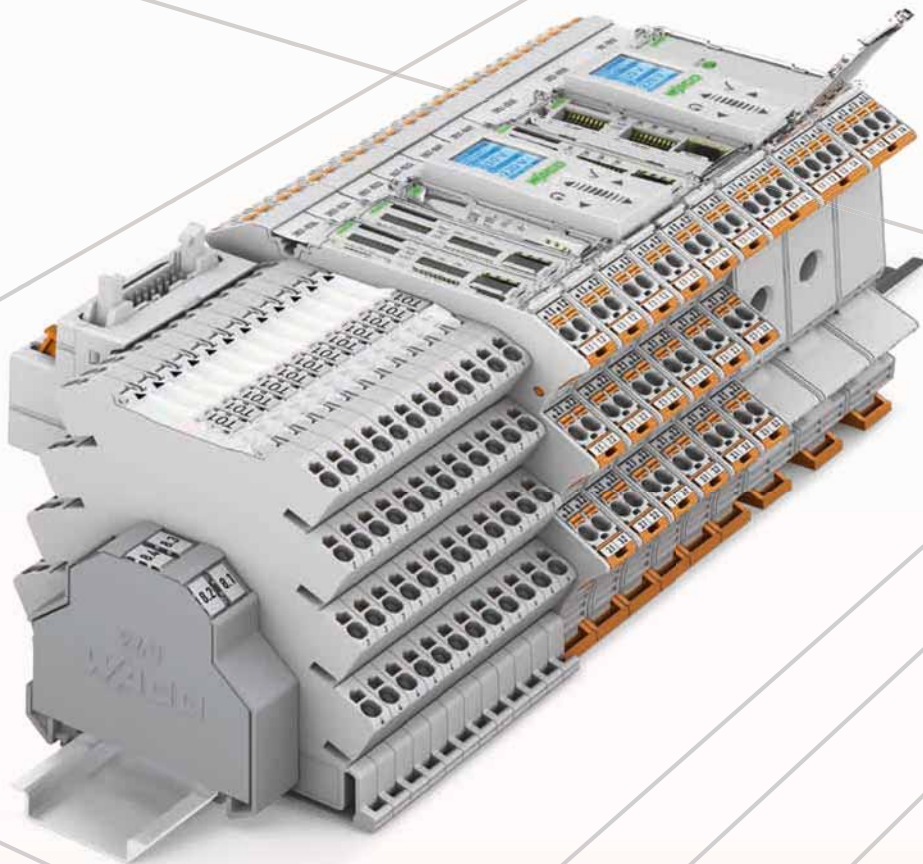


Interface Electronic

Full Line Catalog, Volume 4 – Edition 2017/2018



WAGO Full Line Catalogs



Volume 1, Rail-Mounted Terminal Block Systems

- Rail-Mounted Terminal Blocks
- Rail-Mounted Terminal Blocks with Pluggable Connector (X-COM®-SYSTEM)
- Patchboard Systems
- Terminal Strips
- PUSH WIRE® Connectors for Junction Boxes
- Lighting Connectors
- Shield Connecting System



Volume 2, PCB Terminal Blocks and Connectors

- PCB Terminal Blocks
- SMD PCB Terminal Blocks
- *MULTI CONNECTION SYSTEM (MCS)*
- Pluggable PCB Terminal Blocks
- Feedthrough Terminal Blocks
- Specialty Connectors
- Empty Housings



Volume 3, Automation Technology

- Software
- Operating & Monitoring
- Controllers
- Modular I/O-SYSTEM, IP20/IP67
- Industrial Switches
- Radio Technology, *TO-PASS®* Telecontrol Technology
- IP67 Sensor/Actuator Boxes, IP67 Cables and Connectors



Volume 4, Interface Electronic

- Relay and Optocoupler Modules
- *JUMPFLEX®* Signal Conditioners and Isolation Amplifiers
- Current and Energy Measurement Technology
- *EPSITRON®* Power Supply System
- Interface Modules and System Wiring
- Overvoltage Protection
- Empty Housings



Volume 5, *WINSTA®* – The Pluggable Connection System

- Pluggable Connectors
- Snap-In Device Connectors
- Pluggable PCB Connectors
- Distribution Connectors
- Cable Assemblies
- Flat Cable Systems
- Distribution Boxes



Volume 6, Marking

- Terminal Block Marking
- Cable and Conductor Marking
- Device Marking
- Printer
- Software
- Marker Carriers

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Operating WAGO Connection Technologies

Please follow the applicable product-specific termination instructions:

PUSH-IN CAGE CLAMP®



Push-in CAGE CLAMP® terminates the following copper conductors: solid



stranded



fine-stranded, also with tinned single strands



fine-stranded, tip-bonded



fine-stranded, with ferrule (gastight crimped)



fine-stranded, with pin terminal (gastight crimped)

The universal connection with an additional advantage:

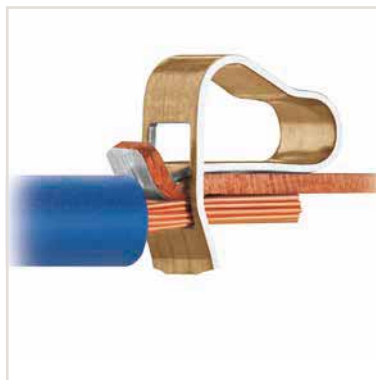
Push-in connection

Terminate solid and stranded, as well as ferruled conductors, by simply pushing them in – no operating tool needed.

Termination for all conductor types:

- Open clamping unit
- Insert the conductor
- Release clamp – done!

CAGE CLAMP®



CAGE CLAMP® terminates the following copper conductors: solid



stranded



fine-stranded, also with tinned single strands



fine-stranded, tip-bonded



fine-stranded, with ferrule (gastight crimped)



fine-stranded, with pin terminal (gastight crimped)

The universal connection for solid, stranded and fine-stranded conductors

Termination:

- Open clamping unit
- Insert the conductor
- Release clamp – done!

Operating WAGO Connection Technologies

Please follow the applicable product-specific termination instructions:

POWER CAGE CLAMP®



POWER CAGE CLAMP terminates the following copper conductors:
solid



stranded



fine-stranded,
also with tinned
single strands



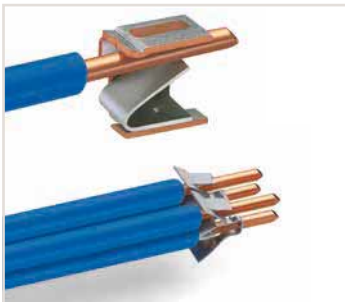
fine-stranded,
with ferrule
(gastight crimped)

The universal connection for conductors larger than 35 mm² (2 AWG)

Termination:

- Open clamp by turning an Allen wrench counter-clockwise
- Press the integrated latch to open clamping unit for hands-free wiring
- Insert the conductor
- A small counter-clockwise rotation closes the clamp, securing conductor

PUSH WIRE®



PUSH WIRE® terminates the following copper conductors:
solid

PUSH WIRE® connection for solid and stranded conductors (depending on the model used)

Termination:

Tool-free, twist-free terminations for solid and rigid stranded conductors – simply push into unit

An Interface Solution for

EPSITRON® Power Supply System



Overvoltage Protection



Relay and Optocoupler Modules

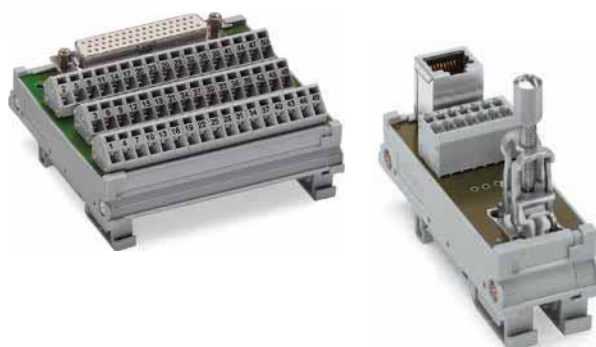


All Applications

JUMPFLEX® Signal Conditioners

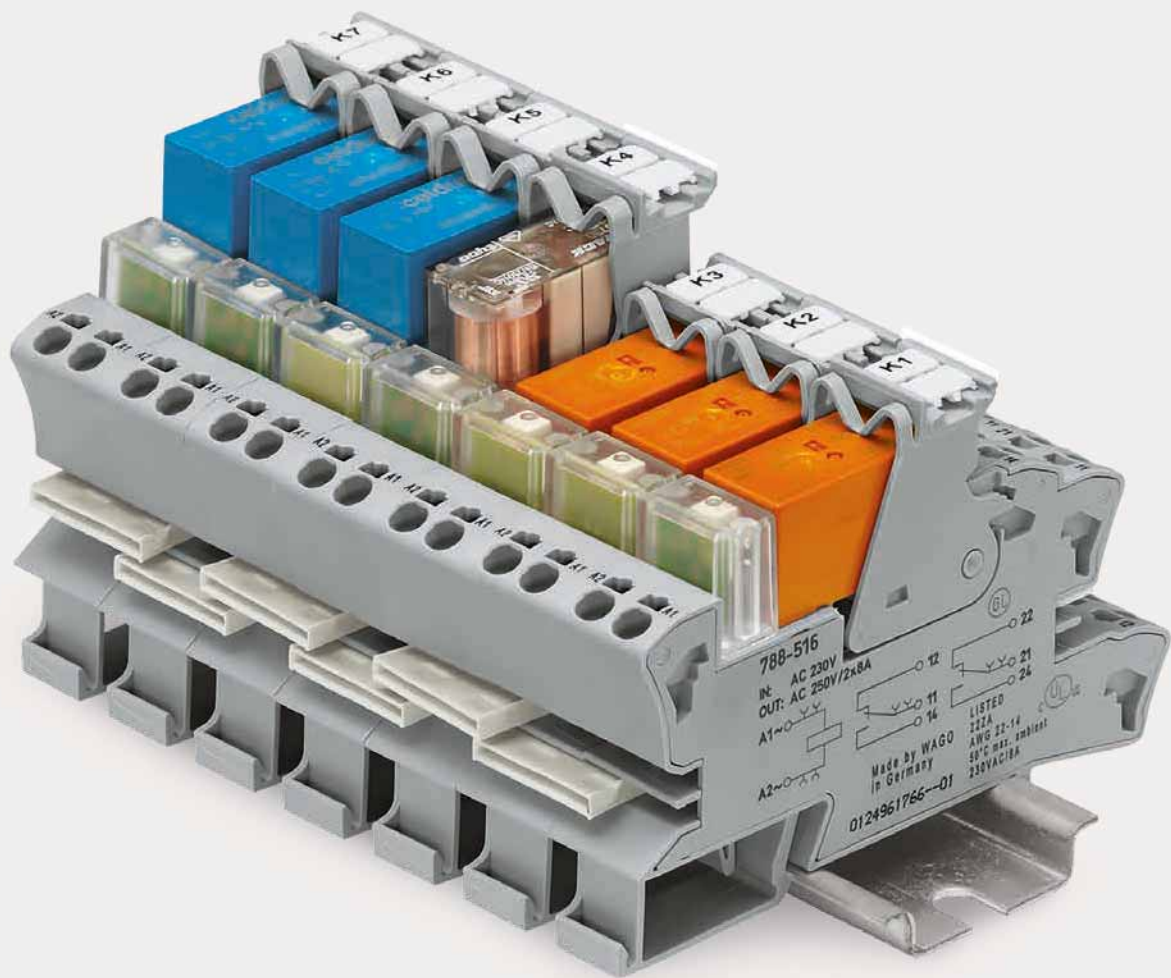


Interface Modules










Current and Energy Measurement Technology





Relay Modules

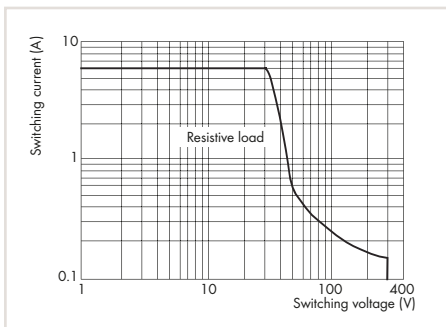
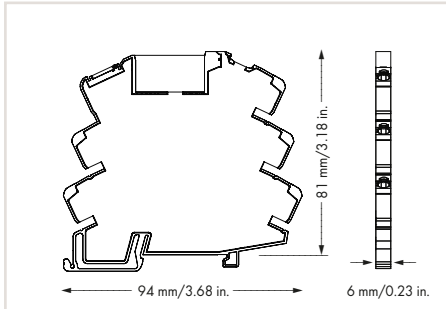
Relay Modules

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Sockets with a Miniature Switching Relay

857 Series

1



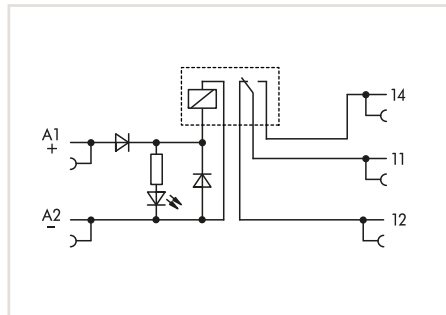
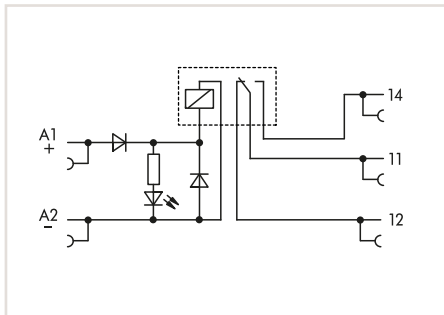
DC load limit curve

Note:

- Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.
- In the case of gold-plated elementary relays switching voltages of 30 VDC and currents of 50 mA should not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce the service life.

Technical Data

Contacts, standard	
Contact material	AgSnO ₂
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA
Contacts, gold	
Contact material	AgNi + Au
Recommended minimum load	1 VDC / 1 mA / 1 mW
Contacts, general	
Max. continuous current	6 A
Max. make current (resistive)	20 ms (AC) 20 A
Max. switching voltage	250 VAC
Max. switching power	1500 VAC / VDC see load limit curve
Switching capacity	AC-15: 3 A / 250 VAC DC-13: 2 A / 24 VDC
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Pull-in/drop-out/bounce time typ.	8 ms / 4 ms / -
Mechanical life	5 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	5 x 10 ⁴ switching operations
Max. switching load with load/without load	6 min ⁻¹ / 180 min ⁻¹
General Specifications	
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Ambient operating temperature at U _N	-40 ... +60 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 81 x 94, height from upper-edge of DIN-rail
Connection technology	Push-in CAGE CLAMP®
Conductor range	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch



Relay module,
1 changeover contact,
max. continuous current: 6 A,
yellow status indicator, 6 mm wide

Relay module,
1 changeover contact,
max. continuous current: 6 A,
with gold contacts,
yellow status indicator, 6 mm wide

U _N	I _N	Item No.	Pack. Unit
12 VDC	17 mA	857-303	25
24 VDC	10 mA	857-304	25
48 VDC	6.5 mA	857-305	25
60 VDC	5.2 mA	857-306	25
115 VAC/DC	4 mA	857-357	25
230 VAC/DC	3.5 mA	857-358	25

U _N	I _N	Item No.	Pack. Unit
24 VDC	10 mA	857-314	25

Specific Technical Data

Coil	
Input voltage range	U _N -15 ... +20 %
Contacts	
Contact material	AgSnO ₂
Max. continuous current	6 A
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA
General Specifications	
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; UL 508; (857-303: ATEX, IEC Ex; 857-304: GL, ATEX, IEC Ex)

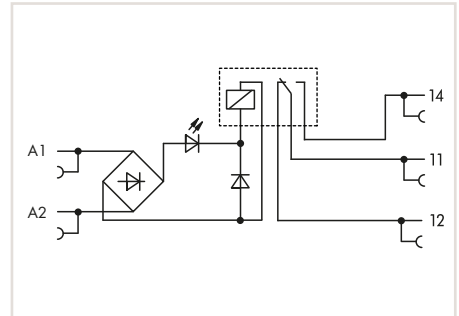
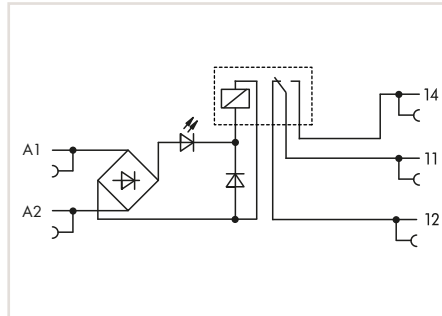
Input voltage range	U _N -15 ... +20 %
Contact material	AgNi + Au
Max. continuous current	6 A
Recommended minimum load	1 VDC / 1 mA / 1 mW
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; UL 508; GL; ATEX; IEC Ex

Input voltage range	U _N -15 ... +20 %
Contact material	AgNi + Au
Max. continuous current	6 A
Recommended minimum load	1 VDC / 1 mA / 1 mW
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; UL 508; GL; ATEX; IEC Ex

Sockets with a Miniature Switching Relay

857 Series

1



Relay module,
1 changeover contact,
max. continuous current: 6 A,
yellow status indicator, 6 mm wide

Relay module,
1 changeover contact,
max. continuous current: 6 A,
with gold contacts,
yellow status indicator, 6 mm wide

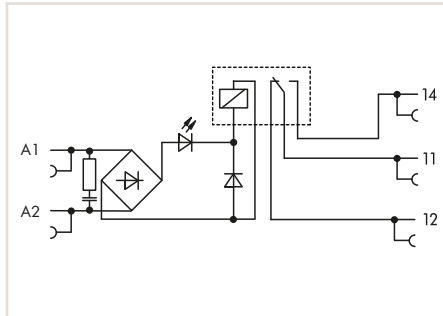
U_N	I_N	Item No.	Pack. Unit
24 VAC/DC	8.5 mA	857-354	25
115 VAC/DC	4 mA	857-357	25
230 VAC/DC	3.5 mA	857-358	25

U_N	I_N	Item No.	Pack. Unit
24 VAC/DC	8.5 mA	857-364	25
115 VAC/DC	4 mA	857-367	25
230 VAC/DC	3.5 mA	857-368	25

Specific Technical Data	
Coil	
Input voltage range	$U_N -15 \dots +20 \%$ (857-354, 857-357) $U_N -20 \dots +10 \%$ (857-358)
Contacts	
Contact material	AgSnO ₂
Max. continuous current	6 A
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA
General Specifications	
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; UL 508; ATEX; IEC Ex (857-358: GL)
	$U_N -15 \dots +20 \%$ (857-364; 857-367) $U_N -20 \dots +10 \%$ (857-368)
	AgNi + Au
	6 A
	1 VDC / 1 mA / 1 mW
	EN 61010-2-201; EN 61810-1; EN 61373; UL 508; ATEX; IEC Ex (857-368: GL)



Similar to picture

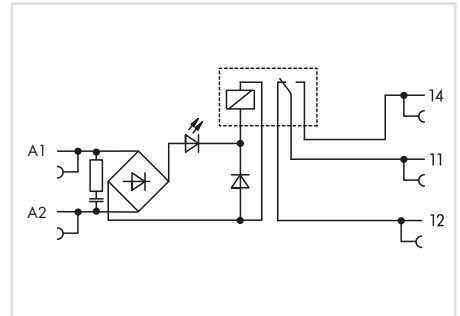


Relay module,
1 changeover contact,
max. continuous current: 6 A,
with integrated base load module,
yellow status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
230 VAC	16 mA	857-358/006-000	25



Similar to picture



Relay module,
1 changeover contact,
max. continuous current: 6 A,
with gold contacts,
with integrated base load module
yellow status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
230 VAC	16 mA	857-368/006-000	25

Specific Technical Data

Coil	
Input voltage range	$U_N -15 \dots +10 \%$
Contacts	
Contact material	AgSnO ₂
Max. continuous current	6 A
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA
General Specifications	
Max. line capacitance	170 nF
Max. line length	> 350 m for a line capacitance of 330 nF/km
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373;

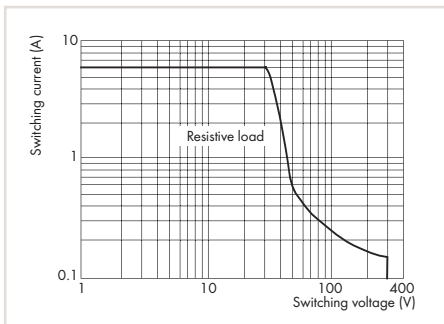
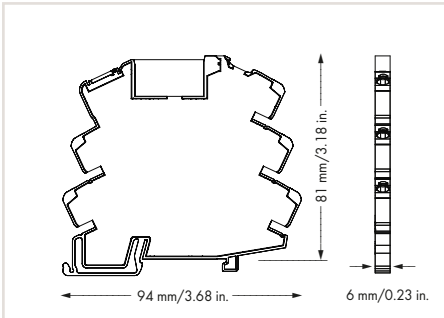
Input voltage range	$U_N -15 \dots +10 \%$
Contact material	AgNi + Au
Max. continuous current	6 A
Recommended minimum load	1 V / 1 mA / 1 mW
Max. line capacitance	170 nF
Max. line length	> 350 m for a line capacitance of 330 nF/km
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373;

Input voltage range	$U_N -15 \dots +10 \%$
Contact material	AgNi + Au
Max. continuous current	6 A
Recommended minimum load	1 V / 1 mA / 1 mW
Max. line capacitance	170 nF
Max. line length	> 350 m for a line capacitance of 330 nF/km
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373;

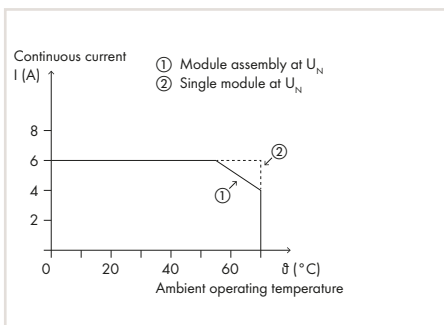
Sockets with a Miniature Switching Relay

857 Series

1



DC load limit curve



Current resistance curve

Note:

- Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.
- In the case of gold-plated elementary relays switching voltages of 30 VDC and currents of 50 mA should not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce the service life.
- These products are designed for use in signal processing networks that are not fed by the low-voltage power supply network.

Technical Data

Contacts, standard

Contact material	AgSnO ₂
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA

Contacts, gold

Contact material	AgNi + Au
Recommended minimum load	1 VDC / 1 mA / 1 mW

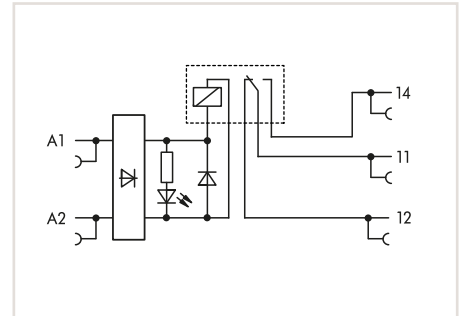
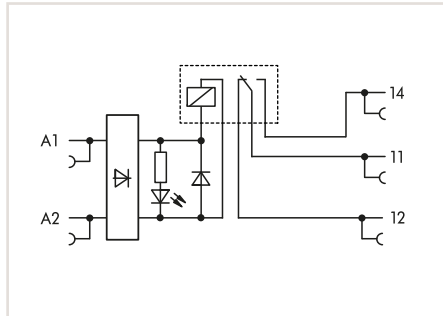
Contacts, general

Max. continuous current	6 A
Max. make current (resistive)	20 ms (AC) 20 A
Max. switching voltage	250 VAC
Max. switching power	1500 VAC / VDC see load limit curve
Switching capacity	AC-15: 3 A / 250 VAC DC-13: 2 A / 24 VDC

Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Pull-in/drop-out/bounce time typ.	8 ms / 4 ms / -
Mechanical life	5 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	5 x 10 ⁴ switching operations
Max. switching load with load/without load	6 min ⁻¹ / 180 min ⁻¹

General Specifications

Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Nominal input current I _N	3.5 mA at 230 VAC ; 20 mA at 24 VDC
Ambient operating temperature at U _N	-40 ... +60 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 81 x 94, height from upper-edge of DIN-rail
Connection technology	Push-in CAGE CLAMP®
Conductor range	0,34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch



Relay module,
1 changeover contact,
max. continuous current: 6 A,
yellow status indicator, 6 mm wide

U_N	Item No.	Pack. Unit
24 ... 230 VAC/DC	857-359	25

Relay module,
1 changeover contact,
max. continuous current: 6 A,
with gold contacts,
yellow status indicator, 6 mm wide

U_N	Item No.	Pack. Unit
24 ... 230 VAC/DC	857-369	25

Specific Technical Data

Coil		
Input voltage range U_N	-30 ... +10 %	-30 ... +10 %
Contacts		
Contact material	AgSnO ₂	AgNi + Au
Max. continuous current	6 A	6 A
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA	1 VDC / 1 mA / 1 mW
General Specifications		
Standards/approvals	EN 50121-3-2; EN 61010-2-201; EN 61810-1; EN 61373; UL 508	EN 50121-3-2; EN 61010-2-201; EN 61810-1; EN 61373; UL 508

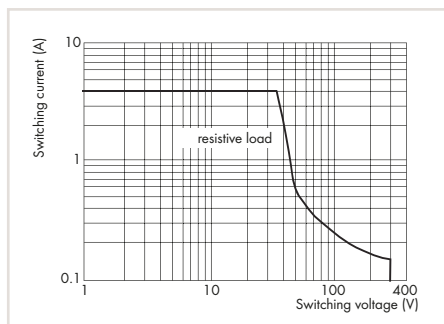
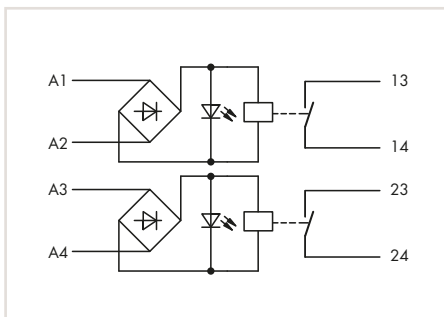
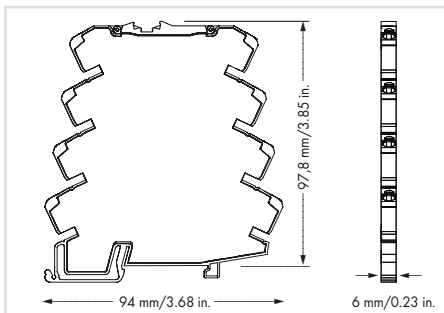
Sockets with a Miniature Switching Relay

857 Series



Relay module, 2-channel,
1 changeover contact,
max. continuous current: 4 A,
with gold contacts,
yellow status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VAC/DC	10 mA	857-1330	25



DC load limit curve

Note:
Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.

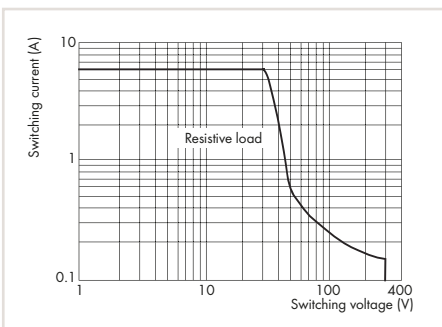
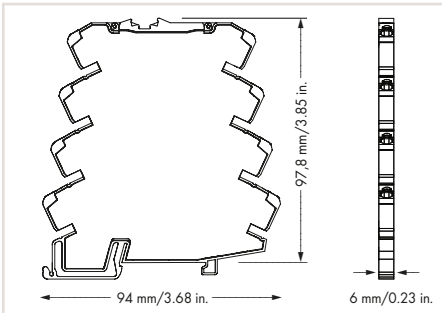
Technical Data

Contacts, standard	
Contact material	AgSnO ₂
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA
Contacts, general	
Max. continuous current	4 A
Max. make current (resistive)	20 ms (AC) 20 A
Max. switching voltage	250 VAC
Max. switching power	AC 1000 VA / DC see load limit curve
Switching capacity	
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Pull-in/drop-out/bounce time typ.	8 ms / 4 ms / -
Mechanical life	5 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	5 x 10 ⁴ switching operations
Max. switching load with load/without load	6 min ⁻¹ / 180 min ⁻¹
General Specifications	
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Ambient operating temperature at U_N	-40 ... +60 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 98 x 94, height from upper-edge of DIN-rail
Connection technology	Push-in CAGE CLAMP®
Conductor range	0,34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; ATEX; IEC Ex; UL 508

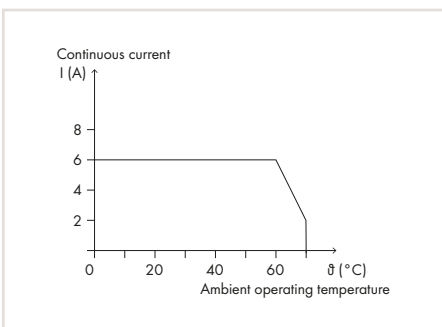
Multifunction Timer Relays

857 Series

1



DC load limit curve

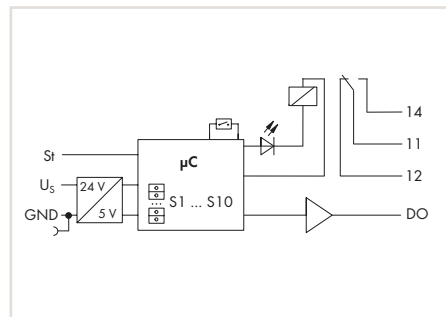
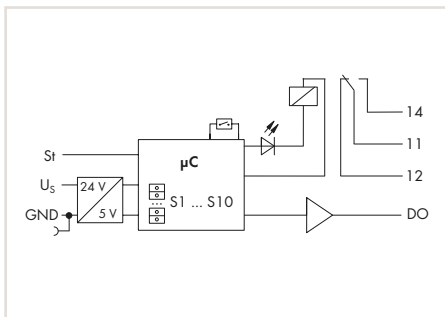


Current resistance curve

Note:
Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.

Technical Data

Power consumption at U_N	18 mA (active) / 4.5 mA (passive)
Input voltage range	$U_N - 30 \dots + 30 \%$
Contacts, standard	
Contact material	AgSnO ₂
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA
Contacts, general	
Max. continuous current	6 A
Max. make current (resistive)	20 ms (AC) 20 A
Max. switching voltage	250 VAC
Max. switching power	1500 VAC / VDC see load limit curve
Switching capacity	AC-15: 3 A / 250 VAC DC-13: 2 A / 24 VDC
Dielectric strength, contact-coil (AC, 1 min)	2.5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Pull-in/drop-out/bounce time typ.	8 ms / 4 ms / -
Mechanical life	5 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	5 x 10 ⁴ switching operations
General Specifications	
Reset time	50 ms
Digital output (DO)	max. 31.2 V, 100 mA
Control input pulse length	min. 10 ms
Nominal voltage	250 V
Rated surge voltage	2.5 kV
Pollution degree	2
Ambient operating temperature at U_N	-25 ... +70 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 98 x 94, height from upper-edge of DIN-rail
Connection technology	Push-in CAGE CLAMP®
Conductor range	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch



Timer relay module,
1 changeover contact,
max. continuous current: 6 A,
railway applications,
multifunction/multi-time range,
yellow status indicator, 6 mm wide

Timer relay module,
1 changeover contact,
max. continuous current: 6 A,
railway applications,
multifunction/multi-time range,
yellow status indicator, 6 mm wide

U _N	I _N	Item No.	Pack. Unit
24 VDC	18 mA	857-640	1

U _N	I _N	Item No.	Pack. Unit
24 VDC	18 mA	857-642	1

Specific Technical Data

General Specifications

Time range	adjustable: 0.01 ... 0.1 s; 0.1 ... 1 s; 1 ... 10 s; 10 ... 100 s; 1 ... 10 min; 10 ... 100 min; 1 ... 10 h; 10 ... 100 h
Functions	<ul style="list-style-type: none"> • On-delay • On-delay,with control input • Off-delay,with control input • On- and off-delay,with control input • Single-shot leading edge • Single-shot leading edge with control input • Single-shot trailing edge with control input • Single-shot leading and trailing edge with control input • On-delay and single-shot leading edge • On-delay and single-shot leading edge with control input • Step switching • Blinking, pulse start • Blinking, interval start • Relay switching
Standards/approvals	EN 61812-1; EN 61373; EN 50121-3-2; UL 508

Time range	adjustable: 0.01 ... 0.1 s; 0.1 ... 1 s; 1 ... 10 s; 10 ... 100 s; 1 ... 10 min; 10 ... 100 min; 1 ... 10 h; 10 ... 100 h
Functions	<ul style="list-style-type: none"> • On- and off-delay,with control input • On-delay and single-shot leading edge • On-delay and single-shot leading edge with control input • Single-shot leading and trailing edge with control input • Pulse sequence evaluation with control input • Repeat cycle timer, pulse start • Repeat cycle timer, interval start, control input
Standards/approvals	EN 61812-1; EN 61373; EN 50121-3-2; UL 508

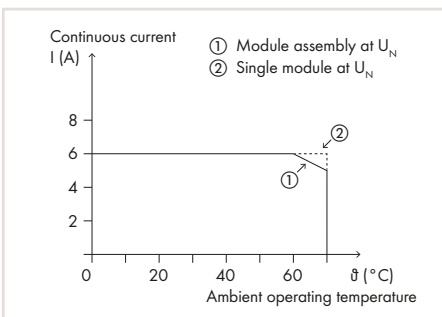
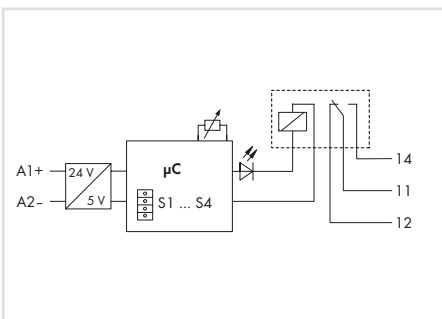
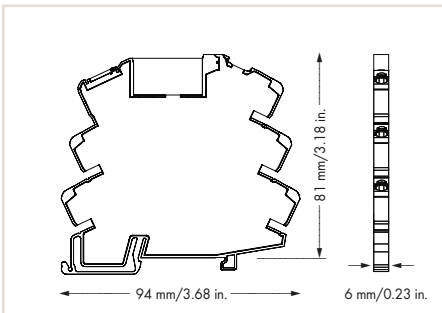
Multifunction Timer Relay

857 Series



Timer relay module,
1 changeover contact,
max. continuous current: 6 A,
railway applications,
multifunction/multi-time range,
yellow status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	17.5 mA	857-604	1



Current resistance curve

- Function and time range adjustable via DIP switch

Note:

Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.

Accessories,
see page 20

Technical Data

Power consumption at U_N	18 mA (active) / 4.5 mA (passive)
Input voltage range	$U_N - 30 \dots + 30 \%$
Contacts, standard	
Contact material	AgSnO ₂
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA
Contacts, general	
Max. continuous current	6 A
Max. make current (resistive)	20 ms (AC) 20 A
Max. switching voltage	250 VAC
Max. switching power	1500 VAC / VDC see load limit curve
Switching capacity	AC-15: 3 A / 250 VAC DC-13: 2 A / 24 VDC
Dielectric strength, contact-coil (AC, 1 min)	2.5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Pull-in/drop-out/bounce time typ.	8 ms / 4 ms / -
Mechanical life	5 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	5 x 10 ⁴ switching operations
General Specifications	
Reset time	50 ms
Digital output (DO)	max. 31.2 V, 100 mA
Control input pulse length	min. 10 ms
Time range	adjustable: 0.1 ... 10 s; 3 ... 300 s; 0.3 ... 30 min; 3 ... 300 min
Nominal voltage	250 V
Rated surge voltage	2.5 kV
Pollution degree	2
Ambient operating temperature at U_N	-25 ... +70 °C
Storage temperature	-40 ... +70 °C
Connection technology	Push-in CAGE CLAMP®
Conductor range	0,34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Dimensions (mm) W x H x D	6 x 81 x 94, height from upper-edge of DIN-rail

Functions

Standards/approvals

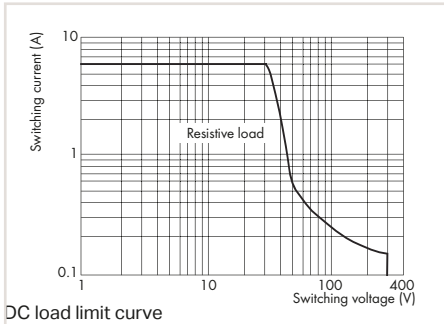
- On-delay
- Single-shot leading edge
- On-delay and single-shot leading edge (1s fixed)
- Blinking

EN 61812-1; EN 61373; EN 50121-3-2; UL 508

Accessories

857 Series

1



Note:

- The 60 VDC spare relays must be used for 60 VDC, 110 VDC, 220 VDC and 115 VAC/DC, 230 VAC/DC relay modules.
- Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.
- In the case of gold-plated elementary relays switching voltages of 30 VDC and currents of 50 mA should not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce the service life.

Technical Data

Contacts, standard

Contact material	AgSnO ₂
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA

Contacts, gold

Contact material	AgNi + Au
Recommended minimum load	1 VDC / 1 mA / 1 mW

Contacts, general

Max. continuous current	6 A
Max. make current (resistive)	20 ms (AC) 20 A
Max. switching voltage	250 VAC
Max. switching power	1500 VAC / VDC see load limit curve
Switching capacity	AC-15: 3 A / 250 VAC DC-13: 2 A / 24 VDC

Dielectric strength, contact-coil (AC, 1 min)

Dielectric strength open contact (AC, 1 min)

Pull-in/drop-out/bounce time typ.

Mechanical life

Electrical life (N.O., resistive load)

Max. switching load with load/without load

General Specifications

Ambient operating temperature at U_N

Storage temperature

Relative humidity

Dimensions (mm) W x H x D

4 kV_{rms}

1 kV_{rms}

8 ms / 4 ms / -

5 x 10⁶ switching operations

5 x 10⁴ switching operations

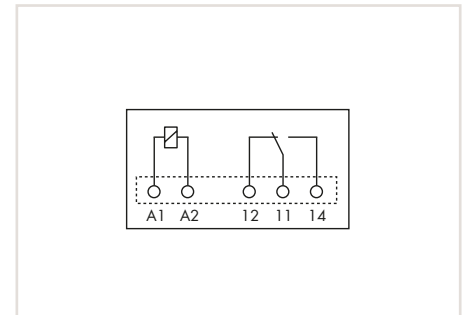
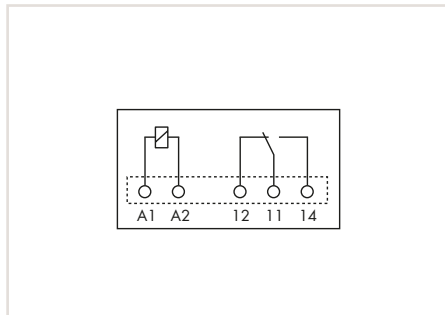
6 min⁻¹ / 180 min⁻¹

-40 ... +85 °C

-40 ... +85 °C

5 ... 85 %

5 x 15 x 28, height from upper-edge of DIN-rail



Basic relay,
1 changeover contact,
max. continuous current: 6 A,
5 mm wide, 15 mm high

Basic relay,
1 changeover contact,
max. continuous current: 6 A,
with gold contacts,
5 mm wide, 15 mm high

U _N	Item No.	Pack. Unit
12 VDC	857-150	20
24 VDC	857-152	20
48 VDC	857-154	20
60 VDC	857-155	20

U _N	Item No.	Pack. Unit
24 VDC	857-153	20
60 VDC	857-157	20

Specific Technical Data

Contacts	
Contact material	AgSnO ₂
Max. continuous current	6 A
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA
General Specifications	
Standards/approvals	EN 61810-1, EN 61373; VDE, UR

Contact material	AgNi + Au
Max. continuous current	6 A
Recommended minimum load	1 VDC / 1 mA / 1 mW
Standards/approvals	EN 61810-1, EN 61373; VDE, UR

Contact material	AgNi + Au
Max. continuous current	6 A
Recommended minimum load	1 VDC / 1 mA / 1 mW
Standards/approvals	EN 61810-1, EN 61373; VDE, UR

Accessories

857 Series

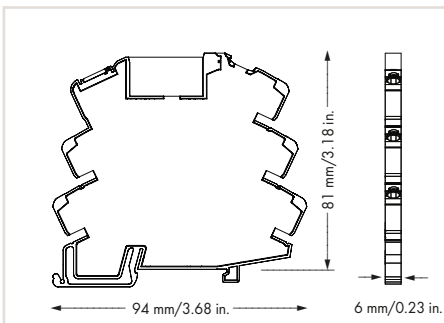


Technical Data

Max. continuous current	6 A
Status indicator	LED yellow
Ambient operating temperature	-40 ... +70 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 81 x 94, height from upper-edge of DIN-rail
Connection technology	Push-in CAGE CLAMP®
Conductor range	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Standards/approvals	UR 508; EN61010-2-201

Socket for miniature switching relay and optocoupler

	Item No.	Pack. Unit
24 VAC/DC	857-104	25
110 VAC/DC	857-107	25
230 VAC/DC	857-108	25



Accessories

857 Series

Push-in type jumper bar, light gray, insulated, 18 A



Description	Item No.	Pack. Unit
2-way	859-402	200 (8x25)
3-way	859-403	200 (8x25)
4-way	859-404	200 (8x25)
5-way	859-405	200 (8x25)
6-way	859-406	100 (4x25)
7-way	859-407	100 (4x25)
8-way	859-408	100 (4x25)
9-way	859-409	100 (4x25)
10-way	859-410	100 (4x25)
Item no. suffixes for colored push-in type jumper bars	yellow	.../000-029
	red	.../000-005
	blue	.../000-006

Comb-style jumper bar, insulated, for conductor entry



Description	Item No.	Pack. Unit
2-way	281-482	100

WMB Multi marking system, 10 strips with 10 markers, white with black printing



Description	Item No.	Pack. Unit	
plain	793-501	5 cards	
Marking	1 ... 10 (10 x)	793-502	5 cards
	11 ... 20 (10 x)	793-503	5 cards
	21 ... 30 (10 x)	793-504	5 cards
	31 ... 40 (10 x)	793-505	5 cards
	41 ... 50 (10 x)	793-506	5 cards
	1 ... 50 (2 x)	793-566	5 cards

Operating tool with a partially insulated shaft

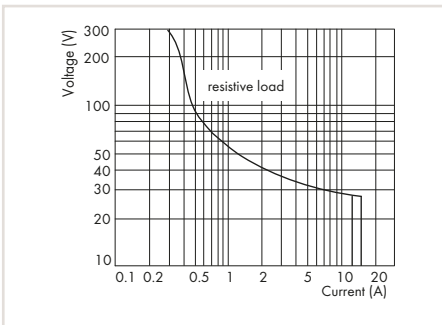
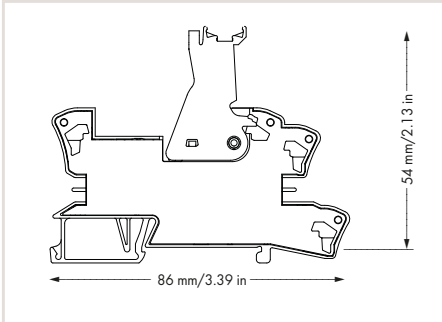


Description	Item No.	Pack. Unit
Typ 2, 3.5 x 0.5 mm blade	210-720	1

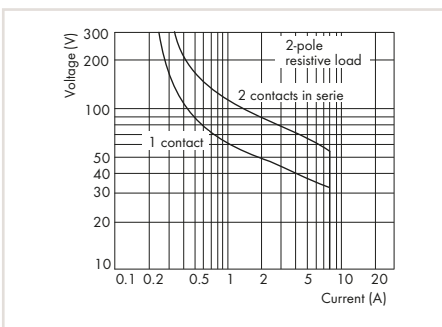
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Sockets with a Miniature Switching Relay 788 Series

1



DC load limit curve (1 contact)



DC load limit curve (2 contacts)

Note:

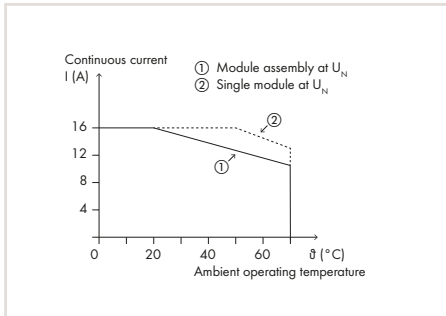
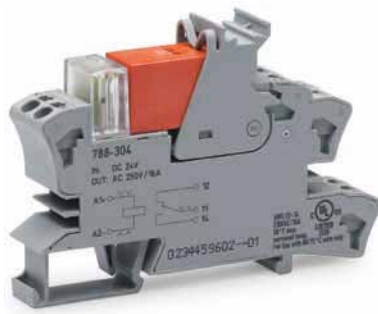
- Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.
- In the case of gold-plated elementary relays switching voltages of 30 VDC and currents of 50 mA should not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce the service life.

Technical Data

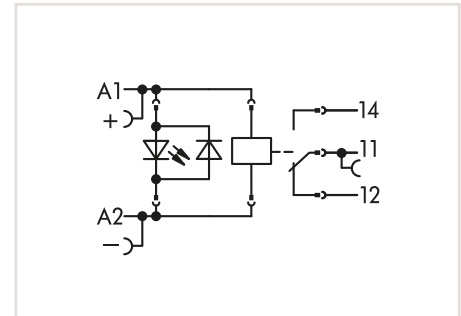
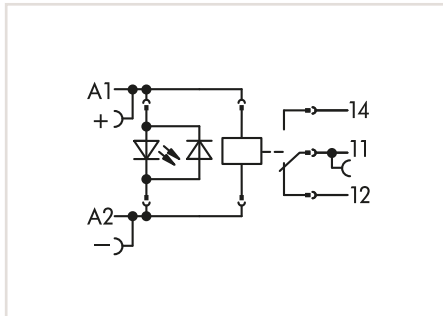
Contacts, standard	
Contact material	AgNi 90/10
Recommended minimum load	12 VDC / 10 mA
Contacts, gold	
Contact material	AgNi + Au
Recommended minimum load	5 V / 2 mA / 50 mW
Contacts, general	
Max. switching voltage	250 VAC
Max. switching power	1 contact: 4 kVA (AC), DC see DC load limit curve
	2 contacts: 2x 2 kVA (AC), DC see DC load limit curve
Switching capacity	1 contact: AC-15: 6 A / 250 VAC DC-13: 2 A / 24 VDC
	2 contacts: AC-15: 3 A / 250 VAC DC-13: 2 A / 24 VDC
Dielectric strength, contact-coil (AC, 1 min)	5 kV _{rms}
Dielectric strength contact-contact	2.5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Mechanical life	30 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	1 contact: 3 x 10 ⁴ switching operations
	2 contacts: 1 x 10 ³ switching operations
Max. switching load with load/without load	6 min ⁻¹ / 600 min ⁻¹
General Specifications	
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Ambient operating temperature at U _N	-40 ... +70 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	15 x 54 x 86, height from upper-edge of DIN-rail
Connection technology	Push-in CAGE CLAMP®
Conductor range	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch



Accessories,
see page 40



Current resistance curve



Relay module,
1 changeover contact,
max. continuous current: 16 A,
red status indicator, 15 mm wide

U_N	I_N	Item No.	Pack. Unit
12 VDC	36 mA	788-303	20
24 VDC	19.1 mA	788-304	20
48 VDC	11 mA	788-305	20
60 VDC	10.5 mA	788-306	20
110 VDC	6 mA	788-307	20

Relay module,
1 changeover contact,
max. continuous current: 16 A,
with gold contacts,
red status indicator, 15 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	19.1 mA	788-404	20

Specific Technical Data

Contacts	
Contact material	AgNi 90/10
Max. continuous current	16 A
Max. make current (resistive)	4 s (AC) 30 A
Recommended minimum load	12 VDC / 10 mA
Pull-in/drop-out/bounce time typ.	8 ms / 6 ms / 6 ms
General Specifications	
Standards/approvals	EN 61010-2-201; EN 61373; EN 61810-1; UL 508 (max. 10 A) (788-307: UL 508, max. 40 °C/10 A)

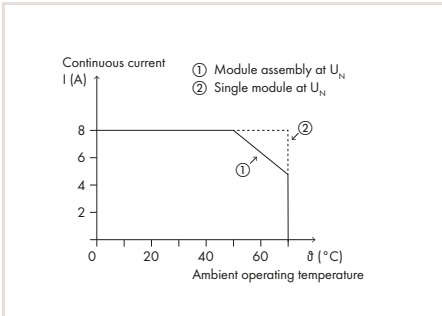
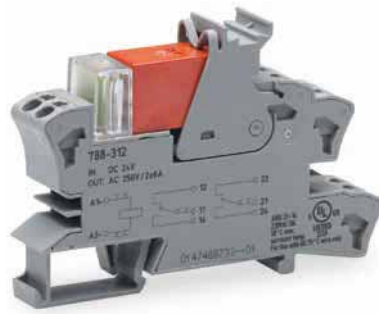
Contact material	AgNi + Au
Max. continuous current	16 A
Max. make current (resistive)	5 V / 2 mA / 50 mW
Recommended minimum load	7 ms / 3 ms / -
Pull-in/drop-out/bounce time typ.	
Standards/approvals	EN 61010-2-201; EN 61373; EN 61810-1; UL 508

Contact material	AgNi + Au
Max. continuous current	16 A
Max. make current (resistive)	5 V / 2 mA / 50 mW
Recommended minimum load	7 ms / 3 ms / -
Pull-in/drop-out/bounce time typ.	
Standards/approvals	EN 61010-2-201; EN 61373; EN 61810-1; UL 508

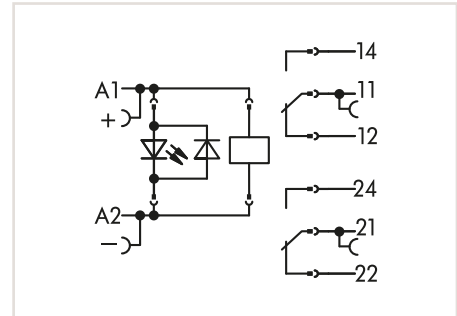
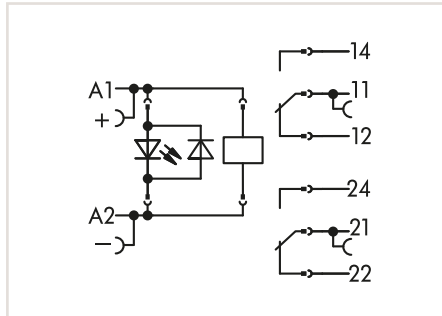
Sockets with a Miniature Switching Relay

788 Series

1



Current resistance curve



Relay module,
2 changeover contacts,
max. continuous current: 8 A,
red status indicator, 15 mm wide

U_N	I_N	Item No.	Pack. Unit
12 VDC	36 mA	788-311	20
24 VDC	19.1 mA	788-312	20
48 VDC	11 mA	788-313	20
60 VDC	10.5 mA	788-314	20
110 VDC	6 mA	788-315	20

Relay module,
2 changeover contacts,
max. continuous current: 8 A,
with gold contacts,
red status indicator, 15 mm wide

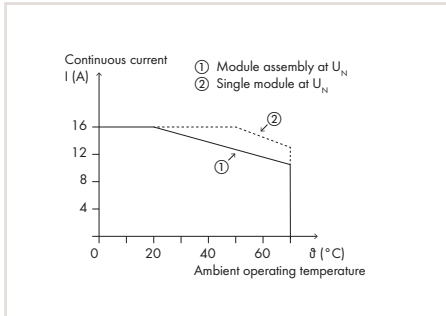
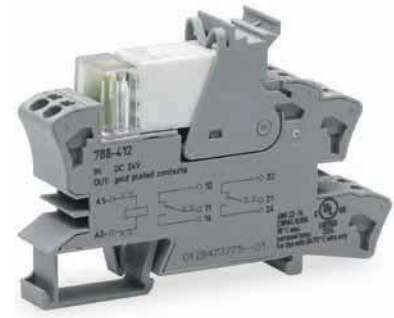
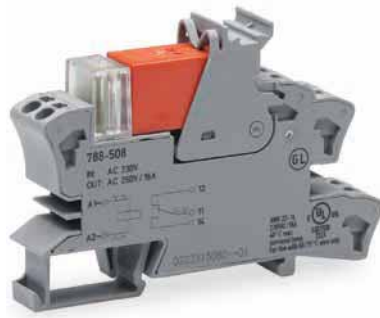
U_N	I_N	Item No.	Pack. Unit
24 VDC	17 mA	788-412	20

Specific Technical Data

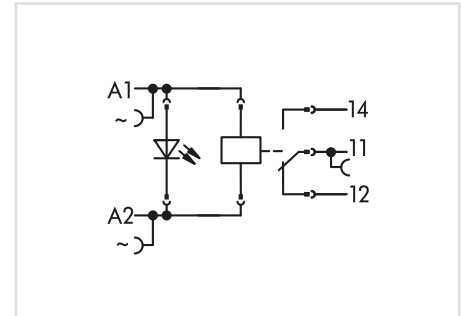
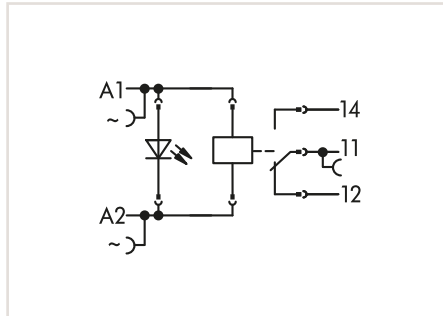
Contacts	
Contact material	AgNi 90/10
Max. continuous current	8 A
Max. make current (resistive)	4 s / 15 A (AC)
Recommended minimum load	12 VDC / 10 mA
Pull-in/drop-out/bounce time typ.	8 ms / 6 ms / 10 ms
General Specifications	
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; UL 508 (788-315: UL 508, max. 40 °C)

Contact material	AgNi + Au
Max. continuous current	8 A
Recommended minimum load	5 V / 2 mA / 50 mW
Pull-in/drop-out/bounce time typ.	7 ms / 3 ms / -
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; UL 508

Contact material	AgNi + Au
Max. continuous current	8 A
Recommended minimum load	5 V / 2 mA / 50 mW
Pull-in/drop-out/bounce time typ.	7 ms / 3 ms / -
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; UL 508



Current resistance curve



Relay module,
1 changeover contact,
max. continuous current: 16 A,
red status indicator, 15 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VAC	34 mA	788-506	20
115 VAC	8 mA	788-507	20
230 VAC	3.5 mA	788-508	20

Relay module,
1 changeover contact,
max. continuous current: 16 A,
with gold contacts,
red status indicator, 15 mm wide

U_N	I_N	Item No.	Pack. Unit
115 VAC	8.2 mA	788-607	20
230 VAC	5 mA	788-608	20

Specific Technical Data

Contacts	
Contact material	AgNi 90/10
Max. continuous current	16 A
Max. make current (resistive)	4 s (AC) 30 A
Recommended minimum load	12 VDC / 10 mA
Pull-in/drop-out/bounce time typ.	8 ms / 6 ms / 6 ms
General Specifications	
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; GL; UL 508 (788-507, 788-508: UL 508, max. 40 °C/10 A)

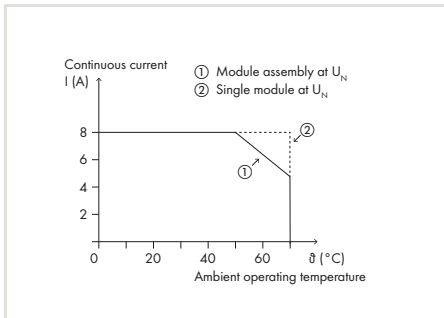
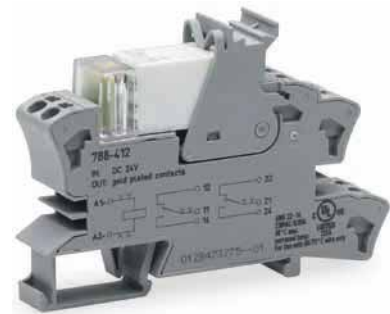
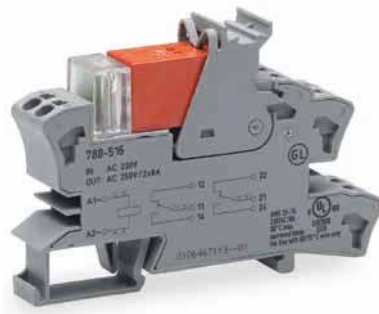
Contact material	AgNi + Au
Max. continuous current	16 A
Max. make current (resistive)	5 V / 2 mA / 50 mW
Recommended minimum load	7 ms / 3 ms / -
Pull-in/drop-out/bounce time typ.	
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; UL 508

Contact material	AgNi + Au
Max. continuous current	16 A
Max. make current (resistive)	5 V / 2 mA / 50 mW
Recommended minimum load	7 ms / 3 ms / -
Pull-in/drop-out/bounce time typ.	
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; UL 508

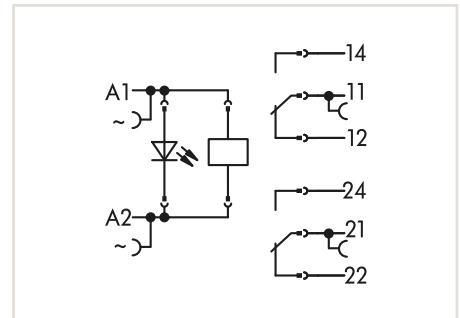
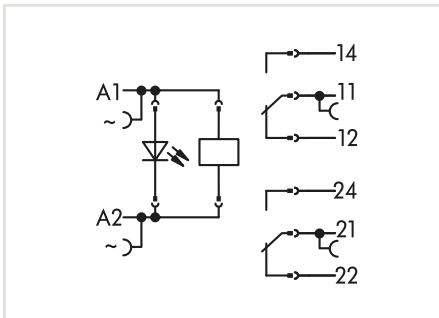
Sockets with a Miniature Switching Relay

788 Series

1



Current resistance curve



Relay module, 2 changeover contacts, max. continuous current: 8 A, red status indicator, 15 mm wide

Relay module, 2 changeover contacts, max. continuous current: 8 A, with gold contacts, red status indicator, 15 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VAC	34 mA	788-512	20
115 VAC	8 mA	788-515	20
230 VAC	3.5 mA	788-516	20

U_N	I_N	Item No.	Pack. Unit
115 VAC	8.2 mA	788-615	20
230 VAC	5 mA	788-616	20

Specific Technical Data

Contacts

Contact material	AgNi 90/10
Max. continuous current	8 A
Max. make current (resistive)	4 s (AC) 15 A
Recommended minimum load	12 VDC / 10 mA
Pull-in/drop-out/bounce time typ.	8 ms / 6 ms / 10 ms

Contact material	AgNi + Au
Max. continuous current	8 A
Recommended minimum load	5 V / 2 mA / 50 mW
Pull-in/drop-out/bounce time typ.	7 ms / 3 ms / -

General Specifications

Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; GL; UL 508
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Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; UL 508
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Sockets with a Miniature Switching Relay

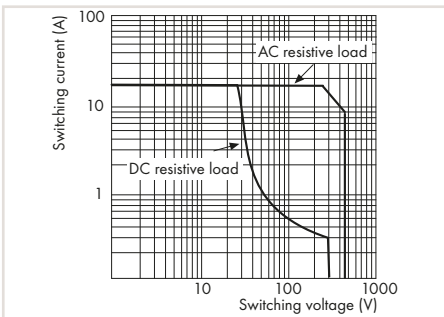
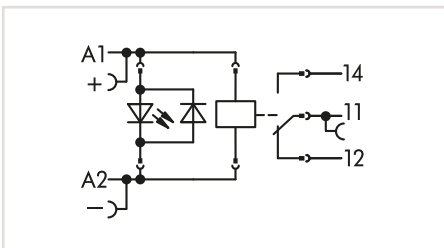
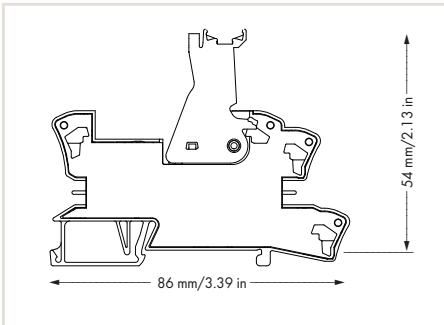
788 Series

1



Relay module, 1 changeover contact, max. continuous current: 16 A, for lamp loads, red status indicator, 15 mm wide

U_N	I_N	Item No.	Pack. Unit
12 VDC	35 mA	788-353	20
24 VDC	19 mA	788-354	20



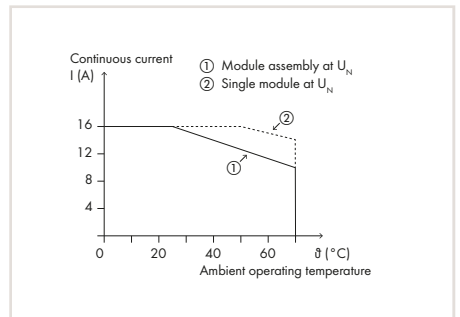
Load limit curve

Technical Data

Coil	
Input voltage range	$U_N -15 \dots +20 \%$
Contacts	
Contact material	AgSnO ₂
Max. continuous current	16 A
Max. make current (resistive)	120 A / 50 ms
Max. switching voltage	250 VAC
Max. switching power (resistive)	4 kVA (AC), DC see load limit curve
Recommended minimum load	100 mA / 5 V DC
Dielectric strength, contact-coil (AC, 1 min)	5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Pull-in/drop-out/bounce time typ.	15 ms / 5 ms / -
Mechanical life	10 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	1 x 10 ⁵ switching operations
General Specifications	
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Ambient operating temperature at U_N	-40 ... +70 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	15 x 54 x 86, height from upper-edge of DIN-rail
Connection technology	Push-in CAGE CLAMP®
Conductor range	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; UL 508 (max. 10 A)

Contact life, type of load	Capability	Electrical life
Incandescent lamp	2200 W	20,000
Halogen lamp 230 VAC	1400 W	50,000
Halogen trafo	120 VA	20,000
Fluorescent lamp not comp., CCG ①,		
cos φ 0.406	20 x 58 W	25,000
Fluorescent lamp comp., CCG ①, C parallel	9 x 58 W	25,000
Fluorescent lamp comp., CCG ①, Duocircuit	600 W	20,000
Fluorescent lamp with ECG ②	12 x 58 W	25,000
Energy saving lamp 15 W	25 pcs	20,000
Energy saving lamp 13 W	30 pcs	20,000
Energy saving lamp 9 W	38 pcs	20,000
Gas discharge lamp	1000 W	20,000
Dulux-Lamp not compensated	800 W	20,000
Dulux-Lamp compensated	500 W	20,000
Max. capacitance at 230 VAC	60 µF	> 5,000

① CCG = Conventional Control Gear
② ECG = Electronic Control Gear

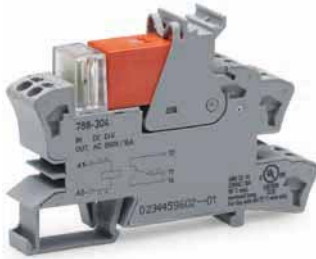


Current resistance curve

Note:

- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.

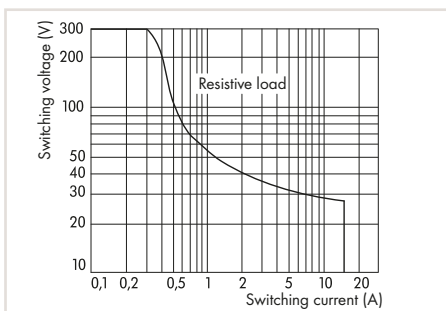
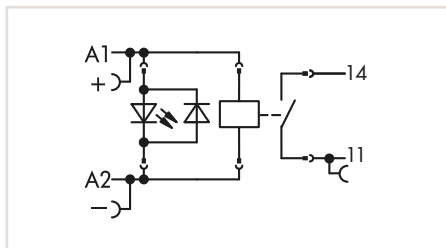
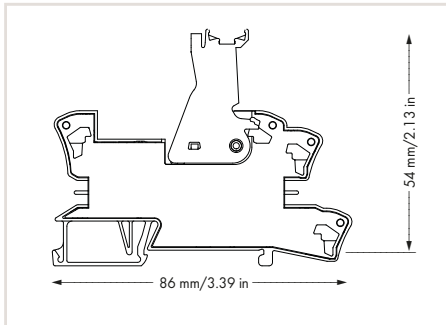
Accessories, see page 40



Similar to picture

Relay module,
1 make contact,
max. continuous current: 16 A,
for lamp loads,
red status indicator, 15 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	19 mA	788-356	20

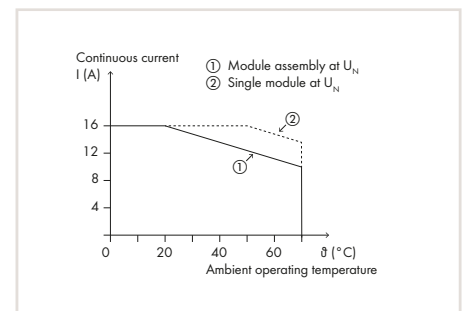


DC load limit curve

Technical Data

Coil	
Input voltage range	$U_N -15 \dots +20 \%$
Contacts	
Contact material	AgSnO ₂
Max. continuous current	16 A
Max. make current (resistive)	30 A / 4 s (AC); 80 A / 20 ms (AC)
Max. switching voltage	250 VAC
Max. switching power (resistive)	4 kVA (AC), DC see load limit curve
Recommended minimum load	12 V / 100 mA
Dielectric strength, contact-coil (AC, 1 min)	5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Pull-in/drop-out/bounce time typ.	9 ms / 6 ms / 3 ms
Mechanical life	30 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	50 x 10 ³ switching operations
General Specifications	
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Ambient operating temperature at U_N	-40 ... +70 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	15 x 53 x 86, height from upper-edge of DIN-rail
Connection technology	Push-in CAGE CLAMP®
Conductor range	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; UL 508 (max. 10 A)

Contact life, type of load	Electrical life
1000 W, incandescent lamp	80,000
16 A, 240 VAC, UL 508	50,000
21/3.5 A, 230 VAC, Compressor, $\cos \varphi = 0.5$	230,000



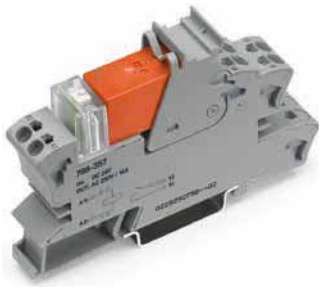
Current resistance curve

Note:

- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.

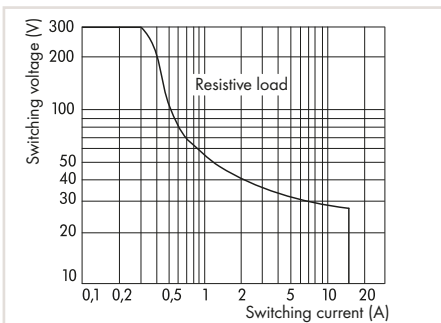
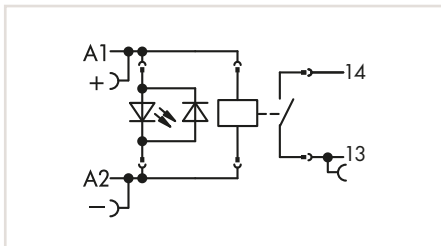
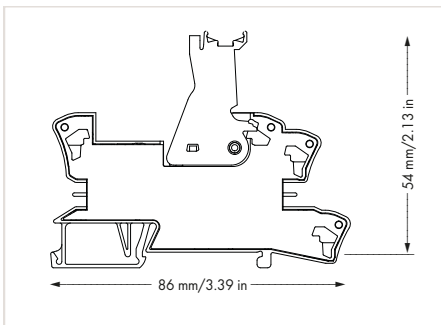
Sockets with a Miniature Switching Relay

788 Series



Relay module,
1 make contact,
max. continuous current: 16 A,
for lamp loads,
red status indicator, 15 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	17 mA	788-357	20



DC load limit curve

Note:

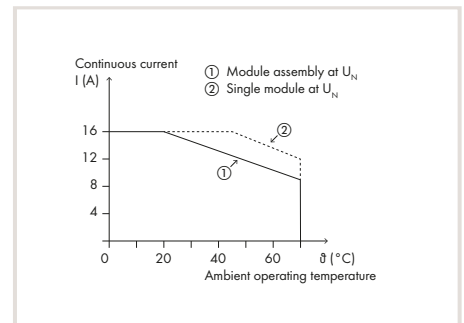
- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.

Technical Data

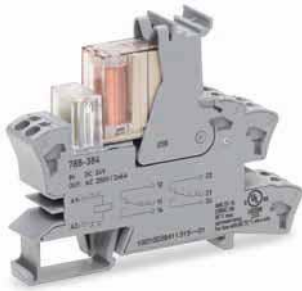
Coil	
Input voltage range	$U_N -10 \dots +20 \%$
Contacts	
Contact material	AgSnO ₂ , pre-make contact W
Max. continuous current	16 A
Max. make current (resistive)	165 A / 20 ms (AC)
Max. switching voltage	250 VAC
Max. switching power (resistive)	AC 4 kVA, DC see load limit curve
Recommended minimum load	12 V / 100 mA
Dielectric strength, contact-coil (AC, 1 min)	5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1.25 kV _{rms}
Pull-in/drop-out/bounce time typ.	10 ms / 5 ms / 4 ms
Mechanical life	5 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	5 x 10 ³ switching operations
Max. switching load with load/without load	6 min ⁻¹ / 60 min ⁻¹
General Specifications	
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Ambient operating temperature at U_N	-40 ... +70 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	15 x 53 x 86, height from upper-edge of DIN-rail
Connection technology	Push-in CAGE CLAMP®
Conductor range	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Standards/approvals	EN 61010-2-210; EN 61810-1; EN 61373

Contact life, type of load	Electrical life
3000 W, incandescent lamp, 230 VAC, OT 8.3 % ①, 5 min ⁻¹	12,000
620 W, gas discharge lamp, CCG ②, 120/277 VAC, UL 508, 50 °C	6,000
1200 W, tungsten lamp, 120/277 VAC, UL 508, 50 °C	6,000
16 A, 250 VAC, cos φ = 1, 85 °C, IEC 61810	5,000

① OT= On-Time
② CCG = Conventional Control Gear

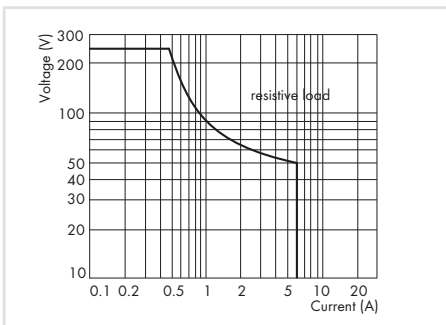
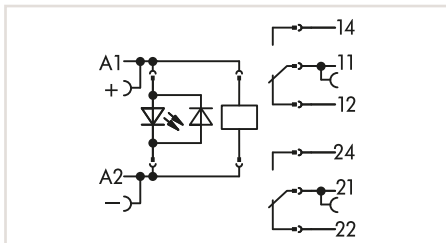
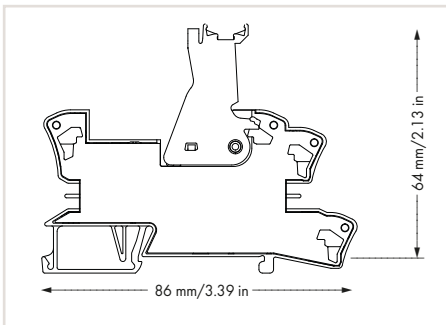


Current resistance curve



Relay module with forced operated contacts,
2 changeover contacts,
max. continuous current: 6 A,
red status indicator, 15 mm wide

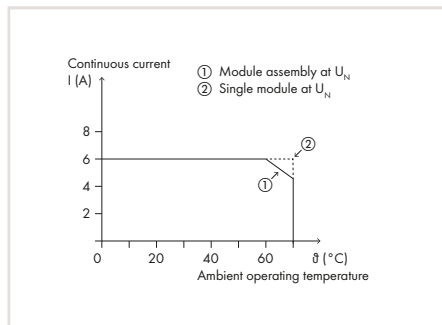
U_N	I_N	Item No.	Pack. Unit
24 VDC	31 mA	788-384	10



DC load limit curve

Technical Data

Coil	
Input voltage range	$U_N -15 \dots +10 \%$
Contacts	
Contact material	AgNi
Max. continuous current	6 A
Max. make current (resistive)	4 s (AC) 14 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	AC 1500 VA, DC see load limit curve
Switching capacity	AC-15: 3 A / 250 VAC DC-13: 3 A / 24 VDC
Recommended minimum load	5 V / 10 mA
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1.5 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	3 kV _{rms}
Pull-in/drop-out/bounce time typ.	10 ms / 4 ms / -
Mechanical life	10 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	1 x 10 ⁵ switching operations
Max. switching load with load/without load	6 min ⁻¹ / 300 min ⁻¹
General Specifications	
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Ambient operating temperature at U_N	-25 ... +75 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	15 x 64 x 86, height from upper-edge of DIN-rail
Connection technology	Push-in CAGE CLAMP®
Conductor range	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Forced operation	Type A
Standards/approvals	EN 61010-2-201, EN 61810-3; EN 50205; UL 508



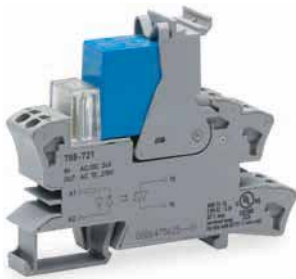
Current resistance curve

Note:

- In accordance with EN 50205, it is only permitted to use 1 make contact/1 break contact for safety circuits (11-14 and 22-21 or 12-11 and 21-24).
- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.

Sockets with a Miniature Switching Relay

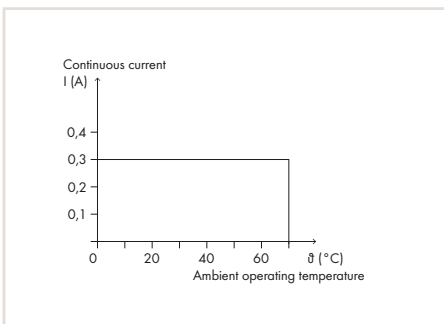
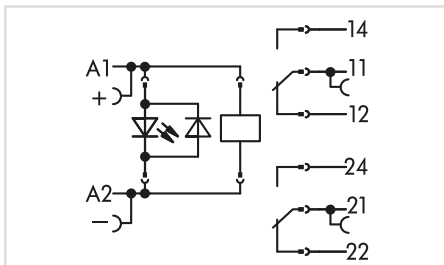
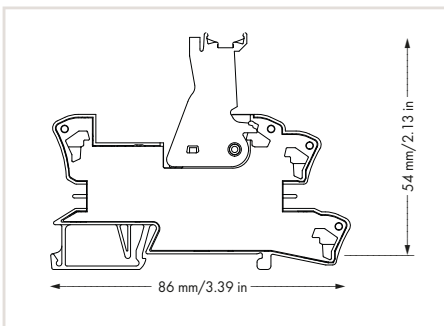
788 Series



Similar to picture

Relay module with forced operated contacts, 2 changeover contacts, max. continuous current: 0.3 A, with gold contacts, green status indicator, 15 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	30 mA	788-906	10



Current resistance curve

Note:

- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.

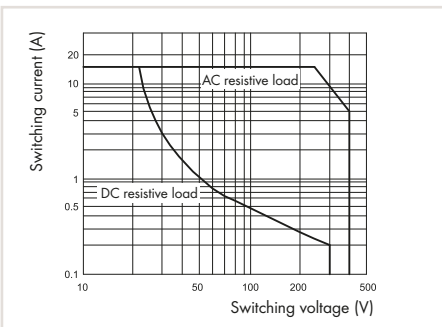
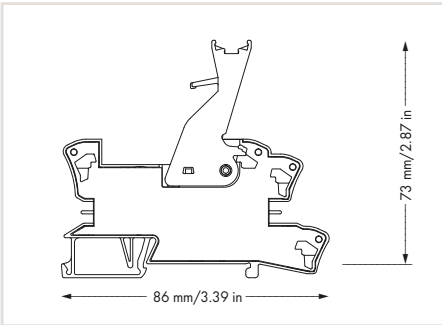
Technical Data

Coil	
Input voltage range	$U_N -15 \dots +10 \%$
Contacts	
Contact material	AgNi + Au
Max. continuous current	0.3 A
Max. switching voltage	60 V
Max. switching power (resistive)	18 W (max.)
Recommended minimum load	0.1 V / 1 mA / 1 mW
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1.5 kV _{rms}
Pull-in/drop-out/bounce time typ.	15 ms / 12 ms / -
Mechanical life	50 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	1 x 10 ⁵
Max. switching load with load/without load	6 min ⁻¹ / 600 min ⁻¹
General Specifications	
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Ambient operating temperature at U_N	-40 ... +70 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	15 x 54 x 86, height from upper-edge of DIN-rail
Connection technology	Push-in CAGE CLAMP®
Conductor range	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.37 inch
Forced operation	Type A
Standards/approvals	EN 61010-2-201, EN 50205, EN 61810-3; UL 508 (max. 40 °C)

Sockets with a Miniature Switching Relay

788 Series

1



DC load limit curve

Note:

- Reinforced insulation between coil and contacts
- A separator plate (e.g., 209-191) must be used for voltages greater than 250 V between adjacent relay modules and for compliance with the reinforced insulation requirements.
- To protect the relay coils and contacts, inductive loads must be dampened with an effective protection circuit.

Technical Data**Contacts, standard**

Contact material	AgNi
Recommended minimum load	10 mA / 12 V AC/DC

Contacts, general

Max. make current	1 contact: 24 A 2 contacts: 12 A
Max. switching voltage	250 VAC
Max. switching power	1 contact: 4 kVA 2 contacts: 2 x 2 kVA
Switching capacity	1 contact: AC-15: 3 A / 240 VAC DC-13: 2 A / 24 VDC 2 contacts: AC-15: 1.5 A / 240 VAC DC-13: 1 A / 24 VDC

Dielectric strength, contact-coil (AC, 1 min)

5 kV_{rms}

Dielectric strength open contact (AC, 1 min)

1 kV_{rms}

Dielectric strength contact-contact

2.5 kV_{rms}

Mechanical life

5 x 10⁶ switching operations

Electrical life (N.O., resistive load)

1 contact: 1 x 10⁴ switching operations
2 contacts: 1 x 10⁴ switching operations

Max. switching load with load/without load

6 min⁻¹ / 300 min⁻¹**General Specifications**

Nominal voltage

250 V

Rated surge voltage

4 kV

Pollution degree

3

Ambient operating temperature at U_N

-40 ... +70 °C

Storage temperature

-40 ... +70 °C

Dimensions (mm) W x H x D

15 x 73 x 86, height from upper-edge of DIN-rail

Connection technology

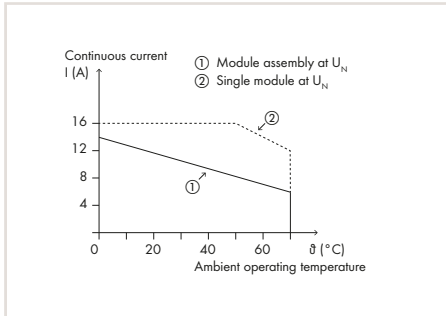
Push-in CAGE CLAMP®

Conductor range

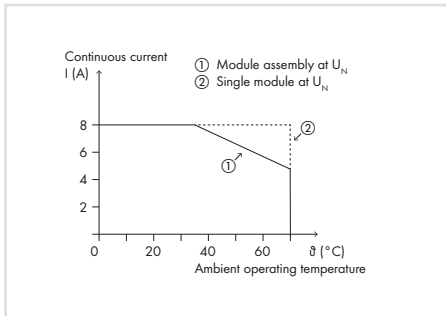
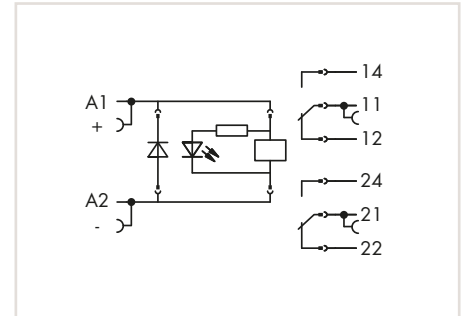
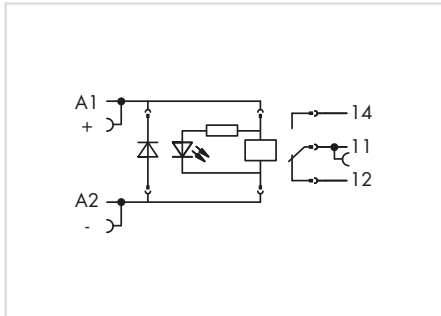
0.34 ... 2.5 mm² / 22 ... 14 AWG

Strip length

9 ... 10 mm / 0.35 ... 0.39 inch



Current resistance curve, for 788-341



Current resistance curve, for 788-346

Relay module,
1 changeover contact,
max. continuous current: 16 A,
manual operation,
red status indicator, 15 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	16.7 mA	788-341	10

Relay module,
2 changeover contacts,
max. continuous current: 8 A,
manual operation,
red status indicator, 15 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	16.7 mA	788-346	10

Specific Technical Data

Coil	
Input voltage range	$U_N \pm 10\%$
Contacts	
Contact material	AgNi
Max. continuous current	16 A
Pull-in/drop-out/bounce time typ.	15 ms / 8 ms / 6 ms
General Specifications	
Standards/approvals	EN 61010-2-210; EN 61810-1; EN 61373; UL 508 (max. 10 A)

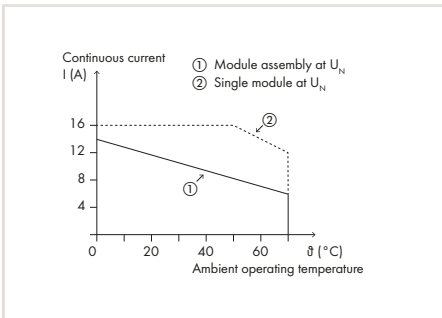
$U_N \pm 10\%$	
AgNi	
16 A	
15 ms / 8 ms / 6 ms	
EN 61010-2-210; EN 61810-1; EN 61373; UL 508 (max. 10 A)	

$U_N \pm 10\%$	
AgNi	
8 A	
15 ms / 8 ms / 7 ms	
EN 61010-2-210; EN 61810-1; EN 61373; UL 508	

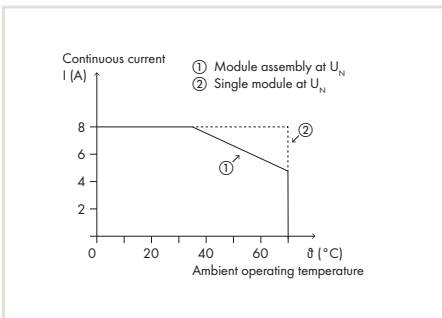
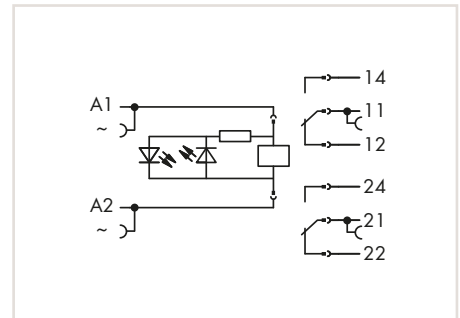
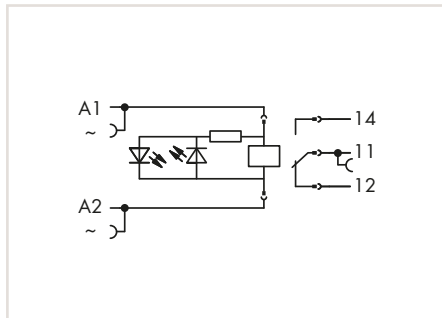
Sockets with a Miniature Switching Relay

788 Series

1



Current resistance curve, for 788-541



Current resistance curve, for 788-546

Relay module,
1 changeover contact,
max. continuous current: 16 A,
manual operation,
red status indicator, 15 mm wide

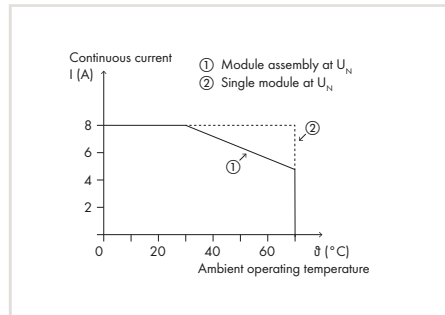
U_N	I_N	Item No.	Pack. Unit
24 VAC	31.6 mA	788-541	10
115 VAC	6.6 mA	788-543	10
230 VAC	3.2 mA	788-544	10

Relay module,
2 changeover contacts,
max. continuous current: 8 A,
manual operation,
red status indicator, 15 mm wide

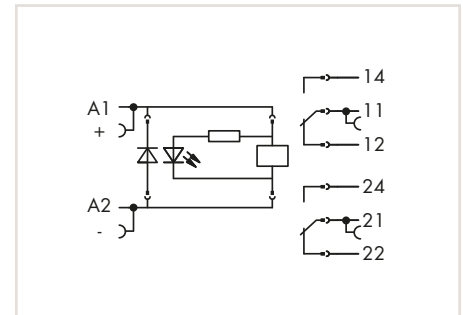
U_N	I_N	Item No.	Pack. Unit
24 VAC	31.6 mA	788-546	10
115 VAC	6.6 mA	788-548	10
230 VAC	3.2 mA	788-549	10

Specific Technical Data

Coil	
Input voltage range	$U_N \pm 10\%$
Contacts	
Contact material	AgNi
Max. continuous current	16 A
Pull-in/drop-out/bounce time typ.	15 ms / 8 ms / 6 ms
General Specifications	
Standards/approvals	EN 61010-2-210; EN 61810-1; EN 61373; UL 508 (max. 10 A)



Current resistance curve, for 788-390



Relay module,
2 changeover contacts,
max. continuous current: 3 A,
manual operation, railway applications,
red status indicator, 15 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	19.1 mA	788-390	10

Specific Technical Data

Coil

Input voltage range

$U_N -30 \dots +25 \%$

Contacts

Contact material

AgNi

Max. continuous current

2 x 8 A

Max. make current

2 x 12 A

Max. switching power (resistive)

2 kVA

Pull-in/drop-out/bounce time typ.

15 ms / 8 ms / 7 ms

General Specifications

Dielectric strength contact-contact
(AC, 1 min)

2.5 kV_{rms}

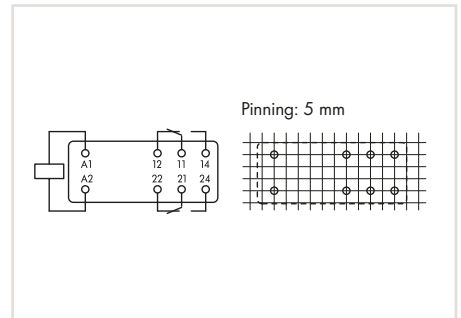
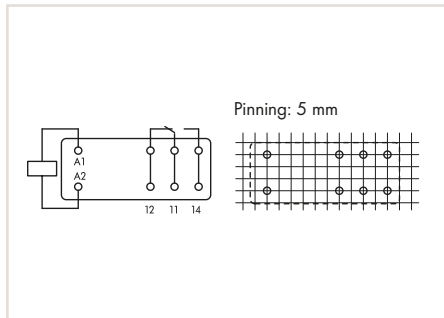
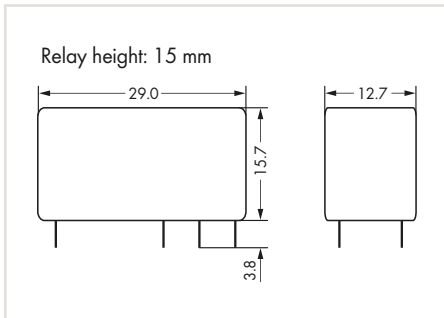
Standards/approvals

EN 61010-2-201; EN 61810-1; EN 61373

Accessories

788 Series

1



Basic relay,
1 changeover contact,
max. continuous current: 16 A,
13 mm wide, 15 mm high

U_N	Item No.	Pack. Unit
12 VDC	788-150	20
24 VDC	788-154	20
48 VDC	788-158	20
60 VDC	788-162	20
110 VDC	788-166	20
24 VAC	788-170	20
115 VAC	788-174	20
230 VAC	788-178	20

Basic relay,
2 changeover contacts,
max. continuous current: 8 A,
13 mm wide, 15 mm high

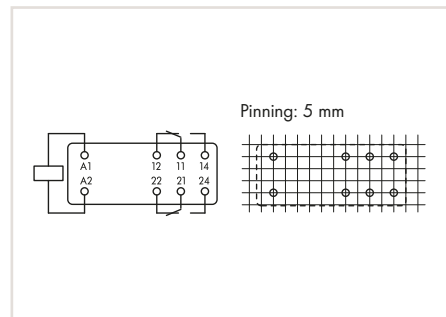
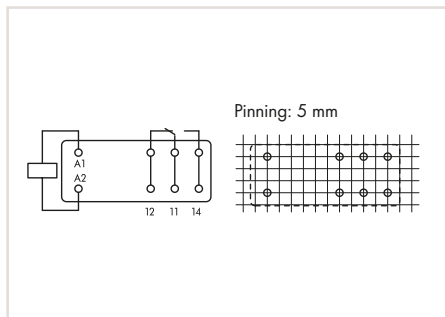
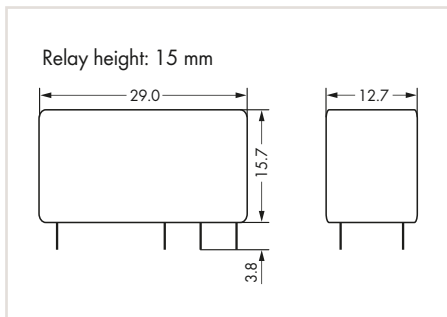
U_N	Item No.	Pack. Unit
12 VDC	788-152	20
24 VDC	788-156	20
48 VDC	788-160	20
60 VDC	788-164	20
110 VDC	788-168	20
24 VAC	788-172	20
115 VAC	788-176	20
230 VAC	788-180	20

Technical Data

Contacts	
Contact material	AgNi 90/10
Max. continuous current	16 A
Max. make current	30 A (4 s)
Max. switching voltage	250 VAC
Max. switching power (resistive)	4 kVA AC
Recommended minimum load	12 VDC / 10 mA
Pull-in/drop-out/bounce time typ.	8 ms / 6 ms / 6 ms
Mechanical life	> 30 x 10 ⁶ switching operations
General Specifications	
Dielectric strength, contact-coil (AC, 1 min)	5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	
Ambient operating temperature at U_N	-40 ... +85 °C
Dimensions (mm) W x H x D	12.7 x 15.7 x 29

Contact material	AgNi 90/10
Max. continuous current	2 x 8 A
Max. make current	15 A (4 s)
Max. switching voltage	250 VAC
Max. switching power (resistive)	2 x 2 kVA AC
Recommended minimum load	12 VDC / 10 mA
Pull-in/drop-out/bounce time typ.	8 ms / 6 ms / 10 ms
Mechanical life	> 30 x 10 ⁶ switching operations
Dielectric strength, contact-coil (AC, 1 min)	5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	2.5 kV _{rms}
Ambient operating temperature at U_N	-40 ... +85 °C
Dimensions (mm) W x H x D	12.7 x 15.7 x 29

Contact material	AgNi 90/10
Max. continuous current	2 x 8 A
Max. make current	15 A (4 s)
Max. switching voltage	250 VAC
Max. switching power (resistive)	2 x 2 kVA AC
Recommended minimum load	12 VDC / 10 mA
Pull-in/drop-out/bounce time typ.	8 ms / 6 ms / 10 ms
Mechanical life	> 30 x 10 ⁶ switching operations
Dielectric strength, contact-coil (AC, 1 min)	5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	2.5 kV _{rms}
Ambient operating temperature at U_N	-40 ... +85 °C
Dimensions (mm) W x H x D	12.7 x 15.7 x 29

**Note:**

In the case of gold-plated elementary relays switching voltages of 30 VDC and currents of 50 mA should not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce the service life.

U_N	Item No.	Pack. Unit
24 VDC	788-155	20
115 VAC	788-175	20
230 VAC	788-179	20

U_N	Item No.	Pack. Unit
24 VDC	788-157	20
115 VAC	788-177	20
230 VAC	788-181	20

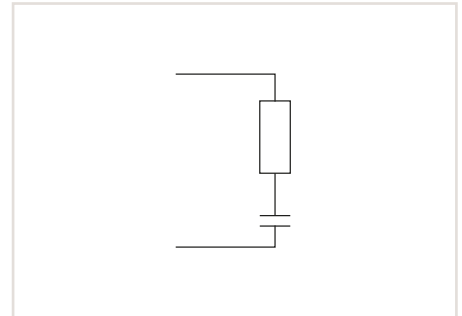
Technical Data**Contacts**

Parameter	16 A Relay (788-155, 175, 179)	8 A Relay (788-157, 177, 181)
Contact material	AgNi + Au	AgNi + Au
Max. continuous current	16 A	2 x 8 A
Max. switching voltage	250 VAC	250 VAC
Max. switching power (resistive)	4 kVA AC	2 x 2 kVA AC
Recommended minimum load	5 V / 2 mA / 50 mW	5 V / 2 mA / 50 mW
Pull-in/drop-out/bounce time typ.	7 ms / 3 ms / -	7 ms / 3 ms / -
Mechanical life	> 3 x 10 ⁷ switching operations	> 3 x 10 ⁷ switching operations
General Specifications		
Dielectric strength, contact-coil (AC, 1 min)	5 kV _{rms}	5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)		2.5 kV _{rms}
Ambient operating temperature at U_N	-40 ... +85 °C	-40 ... +85 °C
Dimensions (mm) W x H x D	12.7 x 15.7 x 29	12.7 x 15.7 x 29

Accessories

788 Series

1



Note:

- To guarantee safe operation, residual voltages (due to the cable capacitance of long connection lines or leakage currents of semi-conductor switches and their protective circuits) must be lower than the release voltage of the relays.
- For DC relays, the release voltage is specified with $\leq 5\%$ of the nominal voltage; for AC relays, it is 15% of the nominal voltage (per VDE 0435).
- The relay may not reset if a high residual voltage exists. Depending on the reason for the residual voltage, changing the cable routing or a parallel connection of an RC element could remedy this situation.

Suppressor module, for pluggable miniature switching relay, for 788 and 858 Series Relay Sockets

U_N	Item No.	Pack. Unit
230 VAC	788-148	50

Technical Data

Operating Data

Operating voltage

max. 230 VAC, 50 ... 60 Hz

Operating current

3.6 mA at 115 VAC, 50 Hz
7.2 mA at 230 VAC, 50 Hz

Module Characteristics

Resistance

470 Ω

Capacitance

100 nF

General Specifications

Ambient operating temperature

-25 ... +70 °C

Storage temperature

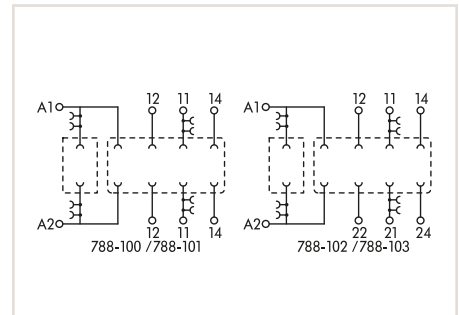
-40 ... +70 °C

Dimensions (mm) W x H x D

15 x 15 x 10

Standards/approvals

EN 60664-1



Socket for miniature switching relay,
1 changeover contact/2 changeover contacts,
for DIN-35 rail

Description	Item No.	Pack. Unit
1 changeover contact (relay height: 15 mm)	788-100	20
2 changeover contacts (relay height: 15 mm)	788-102	20
1 changeover contact (relay height: 25 mm)	788-101	10
2 changeover contacts (relay height: 25 mm)	788-103	10

Specific Technical Data

Contacts	
Max. continuous current	16 A / 2 x 8 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	AC 4 kVA / 2 x 2 kVA
General Specifications	
Nominal input voltage (U_N)	depending on relay; max. 250 VAC
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, contact-coil (AC, 1 min)	6 kV _{rms} (depending on relay)
Dielectric strength open contact (AC, 1 min)	1 kV _{rms} (depending on relay)
Dielectric strength contact-contact (AC, 1 min)	3.5 kV _{rms} (depending on relay)
Storage temperature	-40 ... +80 °C
Ambient operating temperature	-40 ... +70 °C (depending on relay)
Connection technology	Push-in CAGE CLAMP®
Conductor range	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Standards/approvals	EN 60664-1

Accessories

788 Series

Operation status indicator



Description	Power Consumption at U_N	Item No.	Pack. Unit
Operation status indicator with recovery diode, 24 VDC (12 ... 24 V)	2.4 mA	788-120	50 (2x25)
Operation status indicator with recovery diode, 48 VDC (48 ... 60 V)	1.9 mA	788-121	50 (2x25)
Operation status indicator with recovery diode, 110 VDC	1.9 mA	788-122	50 (2x25)
Operation status indicator, 24 VAC	2.1 mA	788-123	50 (2x25)
Operation status indicator, 115 VAC	1.7 mA	788-124	50 (2x25)
Operation status indicator, 230 VAC	1.6 mA	788-125	50 (2x25)

Push-in type jumper bar, I_{max} 18 A



Description	Item No.	Pack. Unit
2-way (module/module)	788-113	200 (8x25)
3-way	788-114	100 (4x25)
4-way	788-115	100 (4x25)
5-way	788-116	100 (4x25)
6-way	788-117	100 (4x25)

Push-in type jumper bar, light gray, insulated, 18 A

Description	Item No.	Pack. Unit
2-way (internal)	859-402	200 (8x25)

WMB Multi marking system,
10 strips with 10 markers,
white, with black printing



Description	Item No.	Pack. Unit	
plain	793-501	5 cards	
Marking	1 ... 10 (10 x)	793-502	5 cards
	11 ... 20 (10 x)	793-503	5 cards
	21 ... 30 (10 x)	793-504	5 cards
	31 ... 40 (10 x)	793-505	5 cards
	41 ... 50 (10 x)	793-506	5 cards
	1 ... 50 (2 x)	793-566	5 cards

Group marker carrier



Item No.	Pack. Unit
209-145	100 (50)

Operating tool with a partially insulated shaft



Description	Item No.	Pack. Unit
Typ 2, 3.5 x 0.5 mm blade	210-720	1

Twin ferrule, red, insulated, 12 mm long

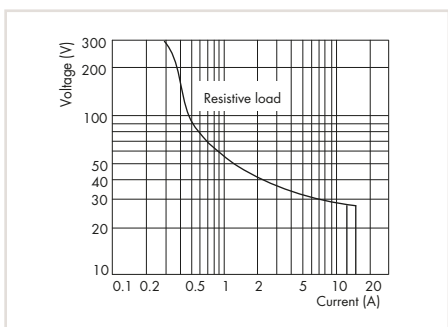
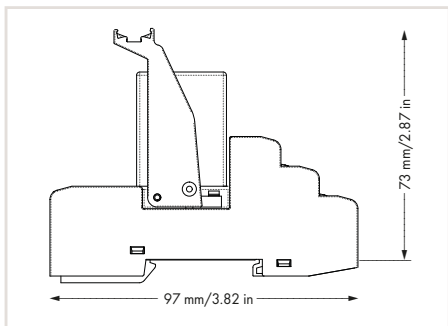


Sleeve for mm ² / AWG	Item No.	Pack. Unit
2 x 1 mm ² / 2 x 18	216-542	500

Sockets with an Industrial Relay

858 Series

1



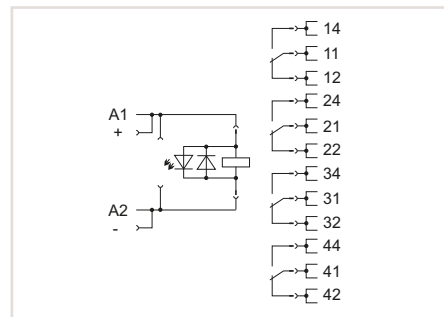
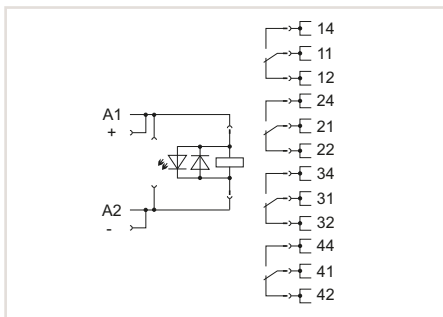
DC load limit curve

Note

- Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.
- In the case of gold-plated elementary relays switching voltages of 30 VDC and currents of 50 mA should not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce the service life.

Technical Data

Contacts, standard	
Contact material	AgCe
Recommended minimum load	100 mA / 12 V AC/DC
Contacts, gold	
Contact material	AgCe + Au
Recommended minimum load	1 mA / DC 5 V / 50 mW
Contacts, general	
Max. continuous current	5 A
Max. make current (resistive)	15 A (4 s)
Max. switching voltage	250 VAC
Max. switching power (resistive)	1250 VA AC, DC see load limit curve
Dielectric strength, contact-coil (AC, 1 min)	1.5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	1.5 kV _{rms}
Pull-in/drop-out/bounce time typ.	25 ms / 25 ms / 4 ms
Mechanical life	20 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	1 x 10 ⁵ switching operations
General Specifications	
Nominal voltage	250 V
Rated surge voltage	2.5 kV
Pollution degree	2
Ambient operating temperature at U _N	-25 ... +70 °C
Storage temperature	-40 ... +80 °C
Dimensions (mm) W x H x D	31 x 73 x 97, height from upper-edge of DIN-rail
Connection technology	Push-in CAGE CLAMP®
Conductor range	2 x 0.34 ... 2 x 1.5 mm ² / 1 x 2.5 mm ² / 2 x 22 ... 2 x 16 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch



Relay module,
4 changeover contacts,
max. continuous current: 5 A,
manual operation,
red status indicator, 31 mm wide

Relay module,
4 changeover contacts,
max. continuous current: 5 A,
with gold contacts,
manual operation,
red status indicator, 31 mm wide

U_N	I_N	Item No.	Pack. Unit
12 VDC	75 mA	858-303	5
24 VDC	36.9 mA	858-304	5
48 VDC	18.5 mA	858-305	5
110 VDC	10 mA	858-307	5
230 VDC	4.1 mA	858-308	5

U_N	I_N	Item No.	Pack. Unit
24 VDC	36.9 mA	858-314	5

Specific Technical Data

Coil	
Input voltage range	$U_N -20 \dots +10 \%$
Contacts	
Contact material	AgCe
Recommended minimum load	100 mA / 12 V AC/DC
General Specifications	
Standards/approvals	EN 61010-2-201; EN 61373; EN 61810-1; UL 508 (max. 50 °C) (858-304: GL)

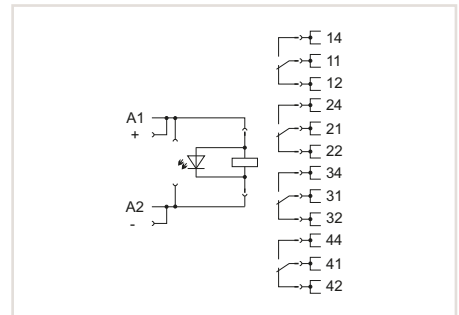
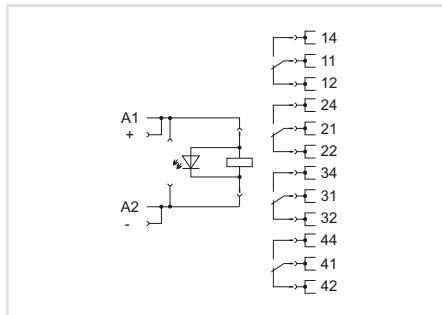
Input voltage range	$U_N -20 \dots +10 \%$
Contact material	AgCe + Au
Recommended minimum load	1 mA / 5 V DC / 50 mW
Standards/approvals	EN 61010-2-201; EN 61373; EN 61810-1; GL; UL 508 (max. 50 °C)

Input voltage range	$U_N -20 \dots +10 \%$
Contact material	AgCe + Au
Recommended minimum load	1 mA / 5 V DC / 50 mW
Standards/approvals	EN 61010-2-201; EN 61373; EN 61810-1; GL; UL 508 (max. 50 °C)

Sockets with an Industrial Relay

858 Series

1



Relay module,
4 changeover contacts,
max. continuous current: 5 A,
manual operation,
red status indicator, 31 mm wide

Relay module,
4 changeover contacts,
max. continuous current: 5 A,
with gold contacts,
manual operation,
red status indicator, 31 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VAC	50 mA	858-504	5
115 VAC	10 mA	858-507	5
230 VAC	8.3 mA	858-508	5

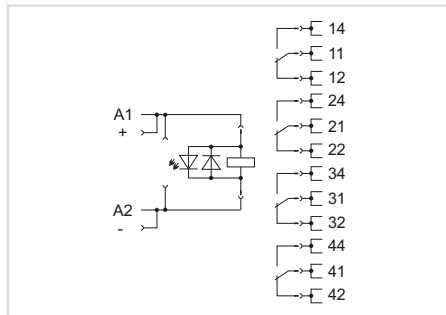
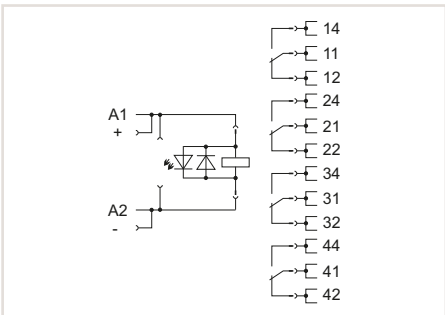
U_N	I_N	Item No.	Pack. Unit
24 VAC	50 mA	858-514	5
115 VAC	10 mA	858-517	5
230 VAC	8.3 mA	858-518	5

Specific Technical Data

Coil	
Input voltage range	$U_N -20 \dots +10 \%$
Contacts	
Contact material	AgCe
Recommended minimum load	100 mA / 12 V AC/DC
General Specifications	
Standards/approvals	EN 61010-2-201; EN 61373; EN 61810-1; UL 508 (max. 50 °C) (858-508: GL)

Input voltage range	$U_N -20 \dots +10 \%$
Contact material	AgCe + Au
Recommended minimum load	1 mA / 5 VDC / 50 mW
Standards/approvals	EN 61010-2-201; EN 61373; EN 61810-1; UL 508 (max. 50 °C) (858-518: GL)

Input voltage range	$U_N -20 \dots +10 \%$
Contact material	AgCe + Au
Recommended minimum load	1 mA / 5 VDC / 50 mW
Standards/approvals	EN 61010-2-201; EN 61373; EN 61810-1; UL 508 (max. 50 °C) (858-518: GL)



Relay module,
4 changeover contacts,
max. continuous current: 5 A,
manual operation, railway applications,
red status indicator, 31 mm wide

Relay module,
4 changeover contacts,
max. continuous current: 5 A,
with gold contacts,
manual operation, railway applications,
red status indicator, 31 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	42 mA	858-354	5

U_N	I_N	Item No.	Pack. Unit
24 VDC	42 mA	858-355	5

Specific Technical Data

Coil	
Input voltage range	$U_N -30 \dots +25 \%$
Contacts	
Contact material	AgCe
Max. switching power (resistive)	1 kVA AC; DC see load limit curve
Recommended minimum load	100 mA / 12 V AC/DC
General Specifications	
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373

	$U_N -30 \dots +25 \%$
	AgCe
	1 kVA AC; DC see load limit curve
	100 mA / 12 V AC/DC
	EN 61010-2-201; EN 61810-1; EN 61373

	$U_N -30 \dots +25 \%$
	AgCe + Au
	1 kVA AC; DC see load limit curve
	1 mA / 5 VDC / 50 mW
	EN 61010-2-201; EN 61810-1; EN 61373

Sockets with an Industrial Relay

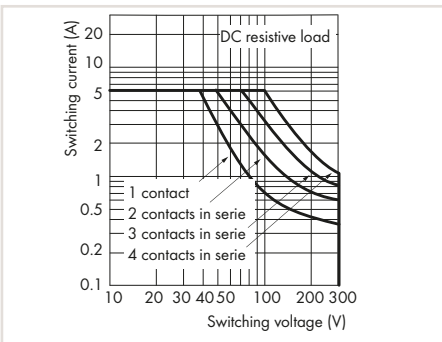
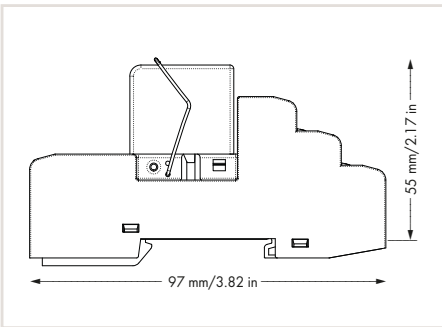
858 Series

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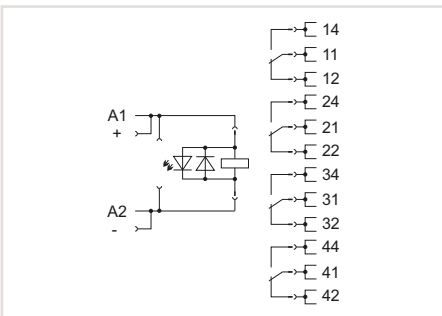


Relay module, 4 changeover contacts, max. continuous current: 6 A, manual operation, red status indicator, 31 mm wide

U _N	I _N	Item No.	Pack. Unit
24 VDC	31.5 mA	858-390	5
110 VDC	7.7 mA	858-392	5
220 VDC	4.3 mA	858-391	5



DC load limit curve



Note: Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.

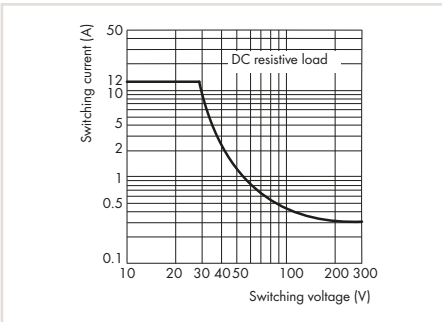
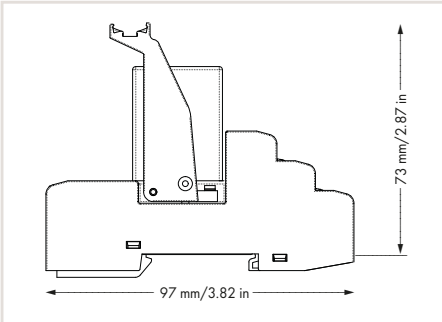
Technical Data

Coil	
Input voltage range	U _N -10 ... +30 %
Contacts, standard	
Contact material	AgNi 90/10
Recommended minimum load	10 mA / 12 V AC/DC
Contacts, general	
Max. continuous current	6 A
Max. make current (resistive)	12 A (20 ms)
Max. switching voltage	240 VAC
Max. switching power (resistive)	1440 VA AC, DC see load limit curve
Dielectric strength, contact-coil (AC, 1 min)	2.5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1.2 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	2 kV _{rms}
Pull-in/drop-out/bounce time typ.	15 ms / 18 ms / 8 ms
Mechanical life	30 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	10 x 10 ⁴ switching operations
Max. switching load with load/without load	6 min ⁻¹ / 60 min ⁻¹
General Specifications	
Nominal voltage	250 V
Rated surge voltage	2.5 kV
Pollution degree	2
Ambient operating temperature at U _N	-40 ... +70 °C
Storage temperature	-40 ... +85 °C
Dimensions (mm) W x H x D	31 x 55 x 97, height from upper-edge of DIN-rail
Conductor range	2 x 0.34 ... 2 x 1.5 mm ² / 1 x 2.5 mm ² / 2 x 22 ... 2 x 16 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Standards/approvals	EN 61010-2-201, EN 61810-1; (858-390, 858-391: UL 508, max. 50 °C)

Sockets with an Industrial Relay

858 Series

1



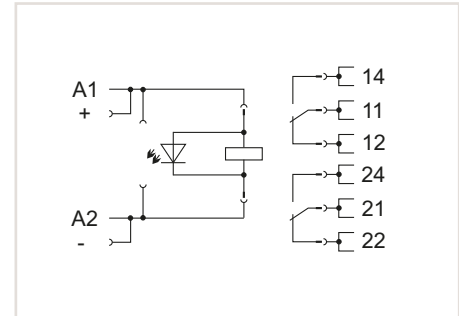
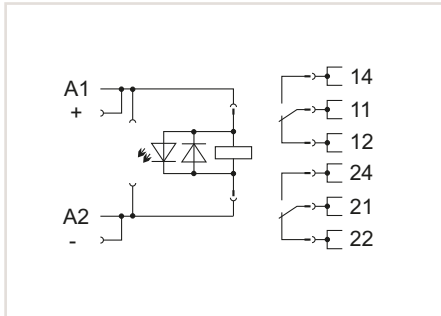
DC load limit curve

Note:

Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.

Technical Data

Coil	
Input voltage range	$U_N - 20 \dots + 10 \%$
Contacts, standard	
Contact material	AgNi
Recommended minimum load	10 V / 5 mA / 0.3 W
Contacts, general	
Max. continuous current	2 x 12 A
Max. make current (resistive)	24 A (4 s)
Max. switching voltage	250 VAC
Max. switching power (resistive)	2 x 3000 VA AC, DC see load limit curve
Max. switching capacity	AC-15: 1.5 A / 240 VAC DC-13: 0.1 A / 250 VDC
Dielectric strength, contact-coil (AC, 1 min)	2.5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1.5 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	2.5 kV _{rms}
Mechanical life	2 x 10 ⁷ switching operations
Electrical life (N.O., resistive load)	1 x 10 ⁵ switching operations
Max. switching load with load/without load	20 min ⁻¹ / 200 min ⁻¹
General Specifications	
Nominal voltage	250 V
Rated surge voltage	2.5 kV
Pollution degree	2
Ambient operating temperature at U_N	-40 ... +55 °C
Storage temperature	-40 ... +85 °C
Dimensions (mm) W x H x D	31 x 73 x 97, height from upper-edge of DIN-rail
Connection technology	Push-in CAGE CLAMP®
Conductor range	2 x 0.34 ... 2 x 1.5 mm ² / 1 x 2.5 mm ² / 2 x 22 ... 2 x 16 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch



Relay module,
2 changeover contacts,
max. continuous current: 12 A,
manual operation,
red status indicator, 31 mm wide

U _N	I _N	Item No.	Pack. Unit
24 VDC	37.5 mA	858-324	5
48 VDC	18.5 mA	858-325	5
110 VDC	8.1 mA	858-327	5
220 VDC	4.1 mA	858-328	5

Relay module,
2 changeover contacts,
max. continuous current: 12 A,
manual operation,
red status indicator, 31 mm wide

U _N	I _N	Item No.	Pack. Unit
230 VAC	11 mA	858-528	5

Specific Technical Data

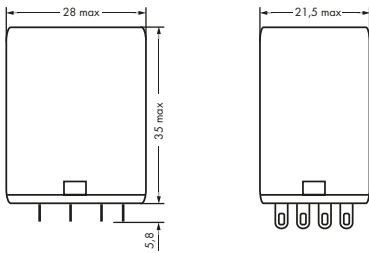
Contacts	
Contact material	AgNi
Recommended minimum load	10 V / 5 mA / 0.3 W
Pull-in/drop-out/bounce time typ.	13 ms / 3 ms / -
General Specifications	
Standards/approvals	EN 61010-2-201; EN 61810-1; UL 508

Contact material	AgNi
Recommended minimum load	10 V / 5 mA / 0.3 W
Pull-in/drop-out/bounce time typ.	10 ms / 8 ms / -
Standards/approvals	EN 61010-2-201; EN 61810-1; UL 508

Contact material	AgNi
Recommended minimum load	10 V / 5 mA / 0.3 W
Pull-in/drop-out/bounce time typ.	10 ms / 8 ms / -
Standards/approvals	EN 61010-2-201; EN 61810-1; UL 508

Accessories

858 Series



Technical Data

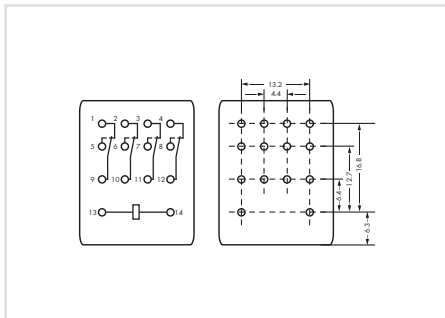
Coil	
Input voltage range	$U_N - 20 \dots + 10 \%$
Contacts, standard	
Contact material	AgCe
Recommended minimum load	100 mA / 12 V AC/DC
Contacts, gold	
Contact material	AgCe + Au
Recommended minimum load	1 mA / DC 5 V / 50 mW
Contacts, general	
Max. continuous current	5 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	1250 VA AC
Dielectric strength, contact-coil (AC, 1 min)	1.5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	1.5 kV _{rms}
Pull-in/drop-out/bounce time typ.	25 ms / 25 ms / 4 ms
Mechanical life	20 x 10 ⁶ switching operations
General Specifications	
Ambient operating temperature at U_N	-25 ... +70 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	21.5 x 35 x 28
Standards/approvals	UR, VDE

Note:

In the case of gold-plated elementary relays switching voltages of 30 VDC and currents of 50 mA should not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce the service life.



Similar to picture

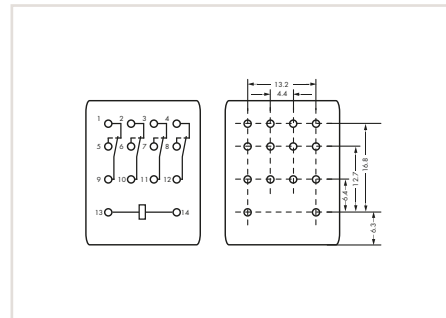


Basic relay module,
4 changeover contacts,
max. continuous current: 5 A,
manual operation,
red status indicator, 22 mm wide, 25 mm high

U_N	I_N	Item No.	Pack. Unit
12 VDC	75 mA	858-164	3
24 VDC	36.9 mA	858-150	3
24 VAC	50 mA	858-154	3
230 VAC	8.3 mA	858-151	3



Similar to picture



Basic relay module,
4 changeover contacts,
max. continuous current: 5 A,
with gold contacts,
manual operation,
red status indicator, 22 mm wide, 25 mm high

U_N	I_N	Item No.	Pack. Unit
24 VDC	36.9 mA	858-152	3
230 VAC	8.3 mA	858-153	3

Specific Technical Data

Contacts	
Contact material	AgCe
Recommended minimum load	100 mA / 12 V AC/DC

Contact material	AgCe + Au
Recommended minimum load	1 mA / 5 VDC / 50 mW

Accessories

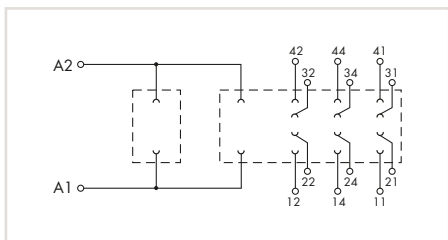
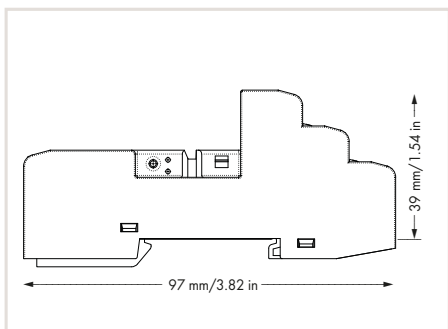
858 Series

1



Relay socket,
4 changeover contacts,
max. continuous current: 6 A,
manual operation,
31 mm wide

	Item No.	Pack. Unit
	858-100	10



Technical Data

Contacts	
Max. switching voltage	250 VAC
Max. continuous current	4 x 6 A (4 changeover contacts); 2 x 12 A (2 changeover contacts)
General Specifications	
Nominal input voltage (U _N)	Depending on relay, max. 250 VAC
Dielectric strength, contact-coil (AC, 1 min)	2.5 kV _{rms} (depending on relay)
Dielectric strength open contact (AC, 1 min)	1.5 kV _{rms} (depending on relay)
Dielectric strength contact-contact (AC, 1 min)	2 kV _{rms} (depending on relay)
Storage temperature	-40 ... +80 °C
Ambient operating temperature	-25 ... +70 °C (depending on relay)
Dimensions (mm) W x H x D	31 x 39 x 97, height from upper-edge of DIN-rail
Connection technology	Push-in CAGE CLAMP®
Conductor range	2 x 0.34 ... 2 x 1.5 mm ² / 1 x 2.5 mm ² / 2 x 22 ... 2 x 16 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Standards/approvals	EN 60664-1; UR

Accessories 858 Series

Holding bracket



Description	Item No.	Pack. Unit
Holding bracket for industrial relays (33.5 ... 35.5 mm high)	858-110	8 (1)

Push-in type jumper bar



Description	Item No.	Pack. Unit
Push-in type jumper bar, for commoning a potential on the control and load side I_N 12 A	858-402	200 (8x25)

Operation status indicator



Description	Power Consumption at U_N	Item No.	Pack. Unit
Operation status indicator with recovery diode, 24 VDC (12 ... 24 V)	2.4 mA	788-120	50 (2x25)
Operation status indicator with recovery diode, 48 VDC (48 ... 60 V)	1.9 mA	788-121	50 (2x25)
Operation status indicator, 110 VDC	1.9 mA	788-122	50 (2x25)
Operation status indicator, 24 VAC	2.1 mA	788-123	50 (2x25)
Operation status indicator, 115 VAC	1.7 mA	788-124	50 (2x25)
Operation status indicator, 230 VAC	1.6 mA	788-125	50 (2x25)

Operating tool with a partially insulated shaft

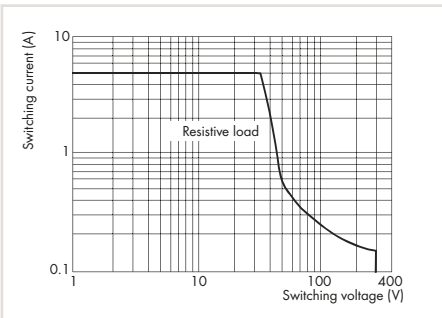
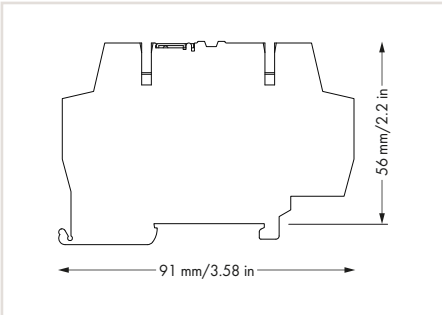


Description	Item No.	Pack. Unit
Type 1, 2.5 x 0.4 mm blade	210-719	1

Rail-Mount Terminal Blocks with a Miniature Switching Relay

859 Series

1



DC load limit curve

Note:

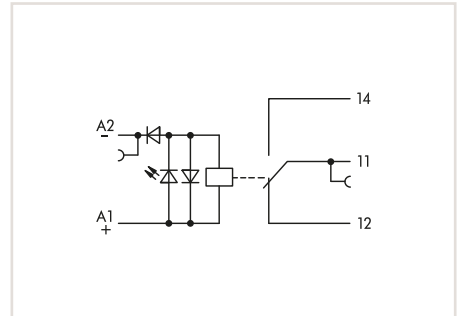
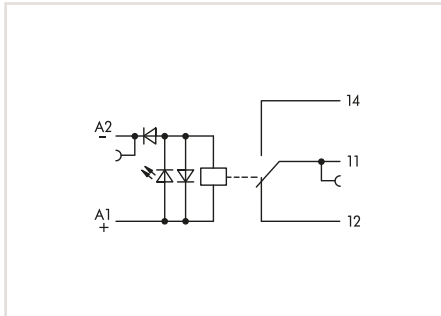
- Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.
- In the case of gold-plated elementary relays switching voltages of 30 VDC and currents of 50 mA should not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce the service life.

Technical Data

Coil	
Input voltage range	$U_N - 15 \dots +20 \%$
Contacts, standard	
Contact material	AgSnO ₂
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA
Contacts, gold	
Contact material	AgNi + Au
Recommended minimum load	1 VDC / 1 mA / 1 mW
Contacts, general	
Max. continuous current	5 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	1250 VA AC, DC see load limit curve
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Pull-in/drop-out/bounce time typ.	8 ms / 4 ms / -
Mechanical life	5 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	5 x 10 ⁴ switching operations
Max. switching load with load/without load	6 min ⁻¹ / 180 min ⁻¹
General Specifications	
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Ambient operating temperature at U _N	-25 ... +50 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 56 x 91, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch



Accessories,
see page 68



Relay module,
1 changeover contact,
max. continuous current: 5 A,
red status indicator, 6 mm wide

Relay module,
1 changeover contact,
max. continuous current: 5 A,
with gold contacts,
red status indicator, 6 mm wide

U _N	I _N	Item No.	Pack. Unit
5 VDC	31 mA	859-302	10
12 VDC	17 mA	859-303	10
24 VDC	10 mA	859-304	10
48 VDC	6.5 mA	859-305	10
220 VDC	3.2 mA	859-308	10

U _N	I _N	Item No.	Pack. Unit
5 VDC	31 mA	859-312	10
24 VDC	10 mA	859-314	10
220 VDC	3.2 mA	859-318	10

Specific Technical Data

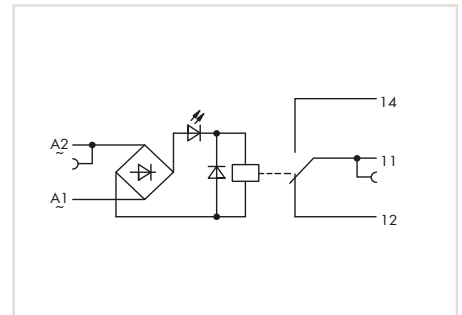
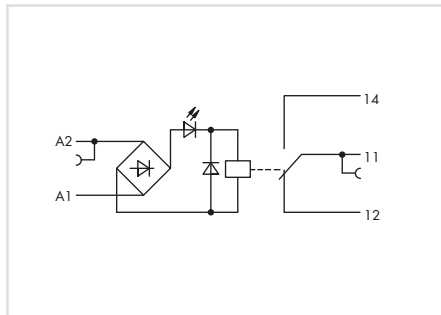
Contacts	
Contact material	AgSnO ₂
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA
General Specifications	
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; GL; UL 508

Contact material	AgNi + Au
Recommended minimum load	1 VDC / 1 mA / 1 mW
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; GL; UL 508

Contact material	AgNi + Au
Recommended minimum load	1 VDC / 1 mA / 1 mW
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; GL; UL 508

Rail-Mount Terminal Blocks with a Miniature Switching Relay 859 Series

1



Relay module,
1 changeover contact,
max. continuous current: 5 A,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
12 VAC/DC	15 mA	859-353	10
24 VAC/DC	8 mA	859-354	10
48 VAC/DC	5.3 mA	859-355	10
60 VAC/DC	4.1 mA	859-356	10
115 VAC/DC	3.5 mA	859-357	10
230 VAC/DC	3.5 mA	859-358	10

Relay module,
1 changeover contact,
max. continuous current: 5 A,
with gold contacts,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
115 VAC	3.5 mA	859-360	10
230 VAC	3.5 mA	859-359	10

Specific Technical Data

Contacts

Contact material

AgSnO₂

AgNi + Au

Recommended minimum load

10 VDC / 10 mA, 24 VDC / 1 mA

1 VDC / 1 mA / 1 mW

General Specifications

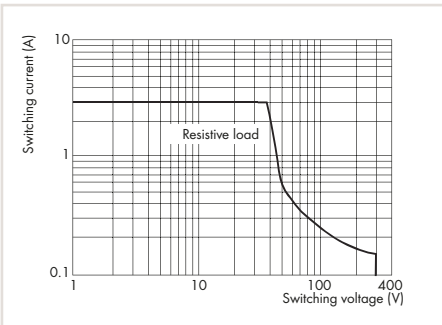
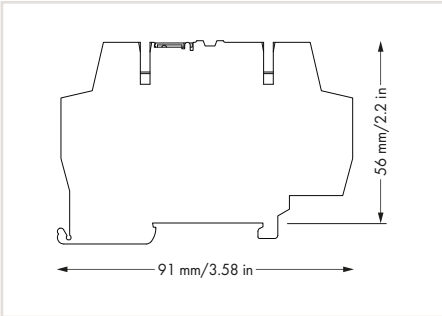
Standards/approvals

EN 61010-2-201; EN 61810-1; EN 61373; GL; UL 508

EN 61010-2-201; EN 61810-1; EN 61373; GL; UL 508

Rail-Mount Terminal Blocks with a Miniature Switching Relay 859 Series

1



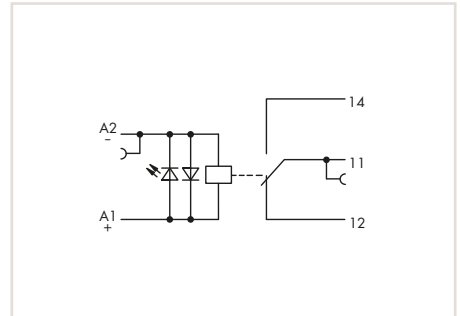
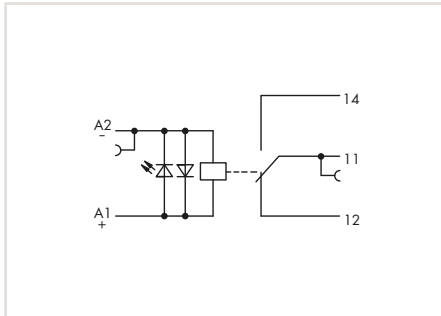
DC load limit curve

Note:

- Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.
- In the case of gold-plated elementary relays switching voltages of 30 VDC and currents of 50 mA should not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce the service life.

Technical Data

Contacts, standard	
Contact material	AgSnO ₂
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA
Contacts, gold	
Contact material	AgNi + Au
Recommended minimum load	1 VDC / 1 mA / 1 mW
Contacts, general	
Max. continuous current	3 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	750 VA AC, DC see load limit curve
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Pull-in/drop-out/bounce time typ.	8 ms / 4 ms / -
Mechanical life	5 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	5 x 10 ⁴ switching operations
Max. switching load with load/without load	6 min ⁻¹ / 180 min ⁻¹
General Specifications	
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Ambient operating temperature at U _N	-25 ... +70 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 56 x 91, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch



Relay module,
1 changeover contact,
max. continuous current: 3 A,
railway applications,
red status indicator, 6 mm wide

Relay module,
1 changeover contact,
max. continuous current: 3 A,
with gold contacts,
railway applications,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	12 mA	859-390	10

U_N	I_N	Item No.	Pack. Unit
24 VDC	10 mA	859-392	10
36 VDC	10.1 mA	859-386	10
48 VDC	7.9 mA	859-384	10
110 VDC	3.1 mA	859-317	10

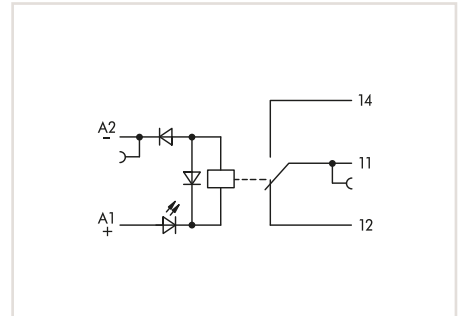
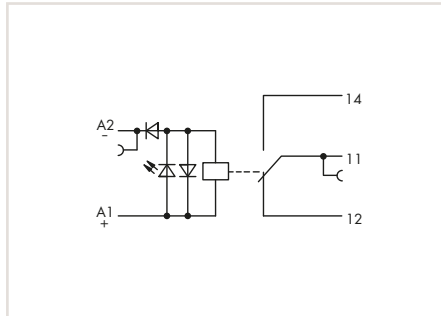
Specific Technical Data

Coil	
Input voltage range	$U_N -30 \dots +25 \%$
Contacts	
Contact material	AgSnO ₂
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA
General Specifications	
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; GL; UL 508

Coil	
Input voltage range	$U_N -30 \dots +25 \%$
Contacts	
Contact material	AgNi + Au
Recommended minimum load	1 VDC / 1 mA / 1 mW
General Specifications	
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373 (859-392, 859-317: GL; UL 508)

Rail-Mount Terminal Blocks with a Miniature Switching Relay 859 Series

1



Relay module,
1 changeover contact,
max. continuous current: 3 A,
railway applications,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
110 VDC	2.7 mA	859-391	10

Relay module,
1 changeover contact,
max. continuous current: 3 A,
railway applications,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	14.4 mA	859-398	10
48 VDC	7.9 mA	859-397	10
110 VDC	3.1 mA	859-399	10

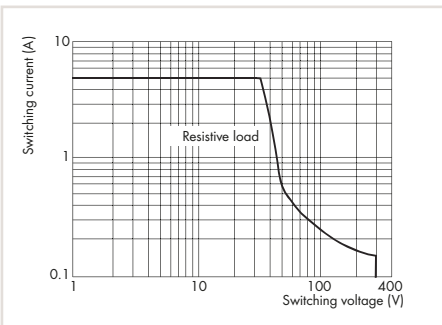
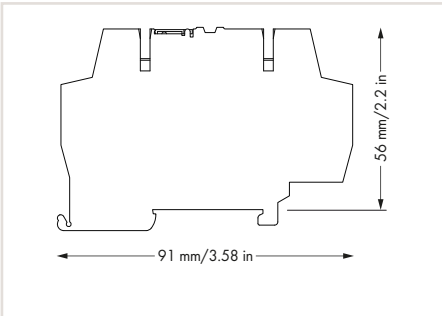
Specific Technical Data

Coil	
Input voltage range	$U_N \pm 30\%$
Contacts	
Contact material	AgSnO ₂
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA
General Specifications	
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; GL; UL 508

Coil	
Input voltage range	$U_N \pm 40\%$
Contacts	
Contact material	AgSnO ₂
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA
General Specifications	
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; GL

Rail-Mount Terminal Blocks with a Miniature Switching Relay 859 Series

1



DC load limit curve

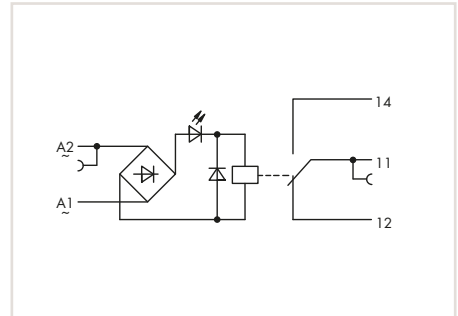
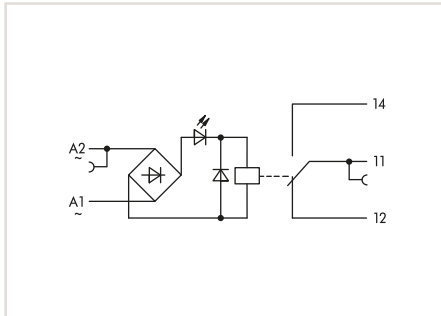
Note:
Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.

Technical Data

Coil	
Input voltage range	$U_N \pm 10\%$
Contacts, standard	
Contact material	AgSnO ₂
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA
Contacts, general	
Max. continuous current	5 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	1250 VA AC, DC see load limit curve
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Pull-in/drop-out/bounce time typ.	8 ms / 4 ms / -
Mechanical life	5 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	5 x 10 ⁴ switching operations
Max. switching load with load/without load	6 min ⁻¹ / 180 min ⁻¹
General Specifications	
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Ambient operating temperature at U _N	-25 ... +50 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 56 x 91, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch



Accessories,
see page 68



Relay module,
1 changeover contact,
max. continuous current: 5 A,
with defined turn-on threshold,
red status indicator, 6 mm wide

Relay module,
1 changeover contact,
max. continuous current: 5 A,
with defined turn-on threshold,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
115 VAC	4.2 mA	859-367	10

U_N	I_N	Item No.	Pack. Unit
230 VAC	4.2 mA	859-368	10

Specific Technical Data

Coil	
Turn-on threshold relay/LED	95 VAC / 80 VAC
Turn-off threshold relay/LED	60 VAC / 60 VAC
Contacts	
Contact material	AgSnO ₂
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA
General Specifications	
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; GL; UL 508

Turn-on threshold relay/LED	190 VAC / 165 VAC
Turn-off threshold relay/LED	140 VAC / 150 VAC
Contact material	AgSnO ₂
Recommended minimum load	10 VDC / 10 mA, 24 VDC / 1 mA
Standards/approvals	EN 61010-2-201; EN 61810-1; EN 61373; GL; UL 508

Accessories

859 Series

Operating tool with a partially insulated shaft



Description	Item No.	Pack. Unit
Type 2, 3.5 x 0.5 mm blade	210-720	1

Felt-tip pen



Description	Item No.	Pack. Unit
Fiber-tip pen for permanent marking	210-110	1

Test pin



Description	Item No.	Pack. Unit
Test pin, Ø 1 mm, with solder connection for test cable	859-500	1

End and intermediate plate



Description	Item No.	Pack. Unit
End and intermediate plate, 1 mm thick, gray	859-525	100 (4x25)

Push-in type jumper bar, light gray, insulated, 18 A



Description	Item No.	Pack. Unit
2-way	859-402	200 (8x25)
3-way	859-403	200 (8x25)
4-way	859-404	200 (8x25)
5-way	859-405	200 (8x25)
6-way	859-406	100 (4x25)
7-way	859-407	100 (4x25)
8-way	859-408	100 (4x25)
9-way	859-409	100 (4x25)
10-way	859-410	100 (4x25)
Item no. suffixes for colored push-in type jumper bars	yellow	... /000-029
	red	... /000-005
	Blue	... /000-006

Miniature WSB Quick marking system,
10 strips with 10 markers,
white, with black printing

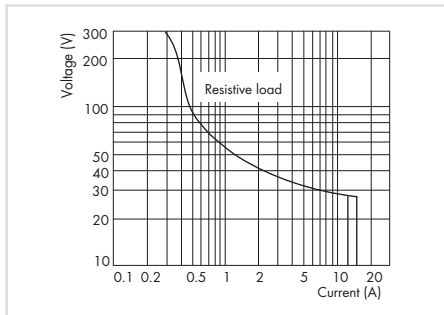
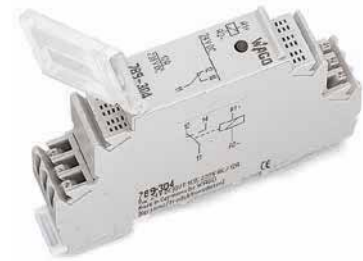
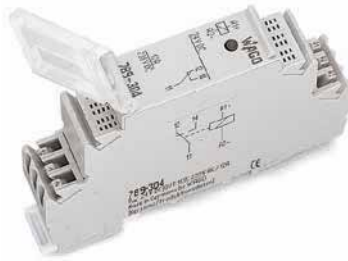


Description	Item No.	Pack. Unit
plain	248-501	5 cards
Marking		
1 ... 10 (10 x)	248-502	5 cards
11 ... 20 (10 x)	248-503	5 cards
21 ... 30 (10 x)	248-504	5 cards
31 ... 40 (10 x)	248-505	5 cards
41 ... 50 (10 x)	248-506	5 cards
1 ... 50 (2 x)	248-566	5 cards
K 1 ... K 10 (10 x)	248-450	5 cards
K 11 ... K 20 (10 x)	248-451	5 cards
K 100 (10 x)	248-452	5 cards
U 1 ... U 10 (10 x)	248-453	5 cards
U 11 ... U 20 (10 x)	248-454	5 cards
U 100 (10 x)	248-455	5 cards

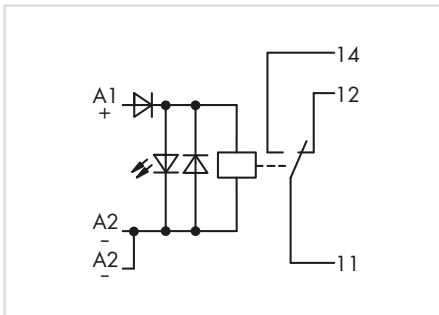
Relay Modules in a DIN-Rail-Mount Enclosure

789 Series

1

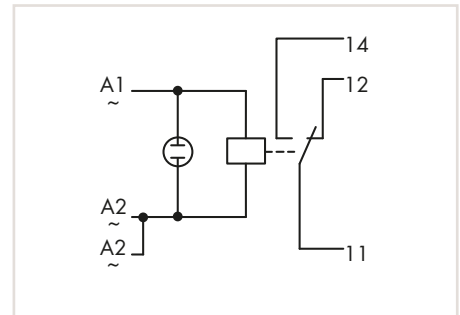


DC load limit curve



Relay module,
1 changeover contact,
max. continuous current: 12 A,
red status indicator, 18 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	19 mA	789-304	10



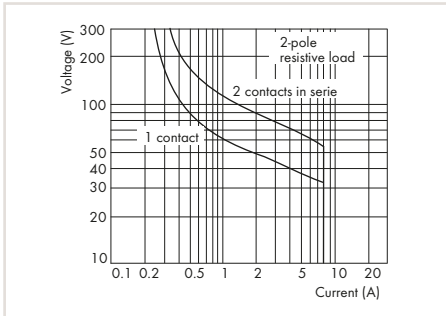
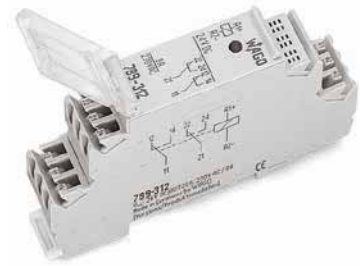
Relay module,
1 changeover contact,
max. continuous current: 12 A,
red status indicator, 18 mm wide

U_N	I_N	Item No.	Pack. Unit
230 VAC	4.2 mA	789-508	10

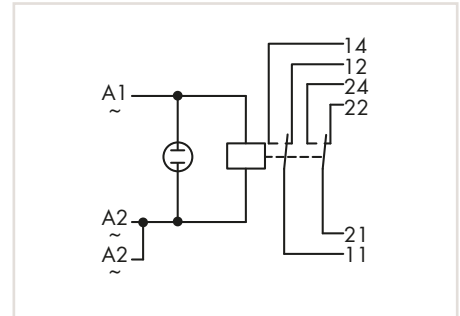
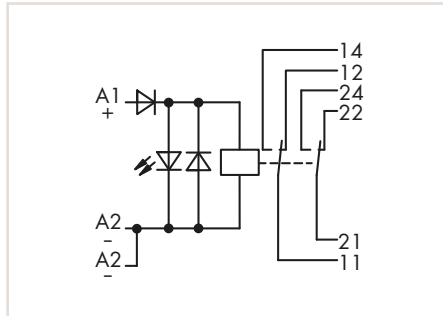
Technical Data

Coil	
Input voltage range	$U_N -15 \dots +10 \%$
Contacts	
Contact material	AgNi 90/10
Max. continuous current	12 A
Max. make current (resistive)	25 A / 4 s
Max. switching voltage	250 VAC
Max. switching power (resistive)	3 kVA (AC), DC see load limit curve
Recommended minimum load	12 VAC/DC, 100 mA
Pull-in/drop-out/bounce time typ.	8 ms / 6 ms / 6 ms
Mechanical life	30×10^6
General Specifications	
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Ambient operating temperature at U_N	-25 ... +40 °C
Storage temperature	-40 ... +85 °C
Dimensions (mm) W x H x D	17.5 x 55 x 90, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Standards/approvals	EN 60664-1

Accessories,
see pages 82



DC load limit curve



Relay module, 2 changeover contacts, max. continuous current: 8 A, red status indicator, 18 mm wide			
U_N	I_N	Item No.	Pack. Unit
24 VDC	21 mA	789-312	10
Relay module, 2 changeover contacts, max. continuous current: 8 A, red status indicator, 18 mm wide			
U_N	I_N	Item No.	Pack. Unit
24 VAC/DC	22 mA	789-512	10
230 VAC	4.2 mA	789-516	10

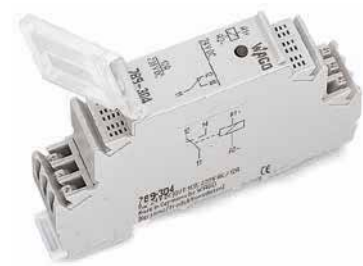
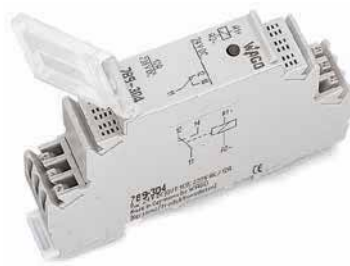
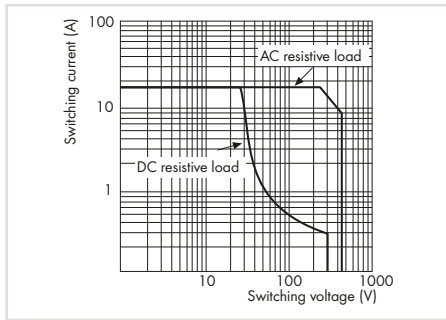
Technical Data

Coil	
Input voltage range	$U_N -15 \dots +10 \%$
Contacts	
Contact material	AgNi 90/10
Max. continuous current	8 A
Max. make current (resistive)	15 A / 4 s
Max. switching voltage	250 VAC
Max. switching power (resistive)	2 kVA (AC), DC see load limit curve
Recommended minimum load	12 VAC/DC, 100 mA
Pull-in/drop-out/bounce time typ.	8 ms / 6 ms / 6 ms
Mechanical life	30×10^6 switching operations
General Specifications	
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	2.5 kV _{rms}
Ambient operating temperature at U_N	-25 ... +40 °C
Storage temperature	-40 ... +85 °C
Dimensions (mm) W x H x D	17.5 x 55 x 90, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Standards/approvals	EN 60664-1

Relay Modules in a DIN-Rail-Mount Enclosure

789 Series

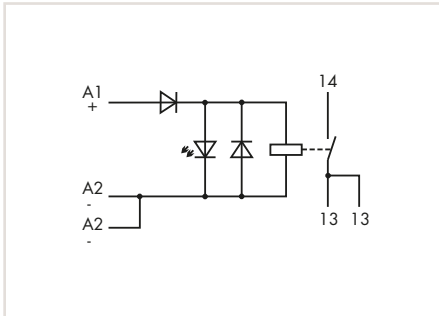
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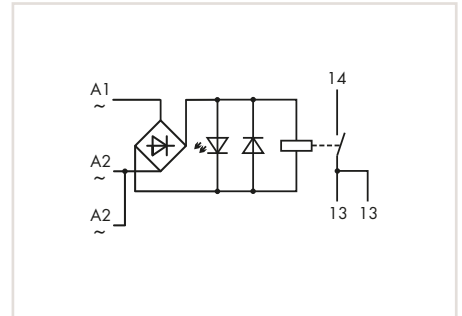
Load limit curve

Contact life, type of load	Capability	Electrical life
Incandescent lamp	2200 W	20,000
Halogen lamp 230 VAC	1400 W	50,000
Halogen trafo	120 VA	20,000
Fluorescent lamp not comp., CCG ①, cos φ 0.406	20 x 58 W	25,000
Fluorescent lamp comp., CCG ①, C parallel	9 x 58 W	25,000
Fluorescent lamp comp., CCG ①, Duocircuit	600 W	20,000
Fluorescent lamp with ECG ②	12 x 58 W	25,000
Energy saving lamp 15 W	25 pcs	20,000
Energy saving lamp 13 W	30 pcs	20,000
Energy saving lamp 9 W	38 pcs	20,000
Gas discharge lamp	1000 W	20,000
Dulux-Lamp not compensated	800 W	20,000
Dulux-Lamp compensated	500 W	20,000
Max. capacitance at 230 VAC	60 µF	> 5,000

① CCG = Conventional Control Gear
② ECG = Electronic Control Gear



Similar to picture



Note:
Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.

Relay module,
1 make contact,
max. continuous current: 16 A,
for lamp loads,
red status indicator, 18 mm wide

U _N	I _N	Item No.	Pack. Unit
24 VDC	19 mA	789-320	10

Relay module,
1 make contact,
max. continuous current: 16 A,
for lamp loads,
red status indicator, 18 mm wide

U _N	I _N	Item No.	Pack. Unit
24 VAC	32 mA	789-520	10

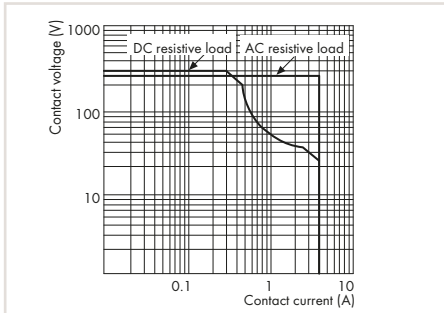
Technical Data

Coil	
Input voltage range	U _N -15 ... +20 %
Contacts	
Contact material	AgSnO ₂
Max. continuous current	16 A
Max. make current (resistive)	120 A / 50 ms (AC)
Max. switching voltage	250 VAC
Max. switching power (resistive)	4 kVA (AC), DC see load limit curve
Recommended minimum load	12 VAC/DC, 100 mA
Pull-in/drop-out/bounce time typ.	15 ms / 5 ms / -
Mechanical life	10 x 10 ⁶ switching operations
General Specifications	
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Ambient operating temperature at U _N	-25 ... +40 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	17.5 x 55 x 90, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Standards/approvals	EN 60664-1, EN 61810-1

Coil	
Input voltage range	U _N -15 ... +20 %
Contacts	
Contact material	AgSnO ₂
Max. continuous current	16 A
Max. make current (resistive)	120 A / 50 ms (AC)
Max. switching voltage	250 VAC
Max. switching power (resistive)	4 kVA (AC), DC see load limit curve
Recommended minimum load	12 VAC/DC, 100 mA
Pull-in/drop-out/bounce time typ.	15 ms / 5 ms / -
Mechanical life	10 x 10 ⁶ switching operations
General Specifications	
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Ambient operating temperature at U _N	-25 ... +40 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	17.5 x 55 x 90, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Standards/approvals	EN 60664-1, EN 61810-1

Coil	
Input voltage range	U _N -15 ... +20 %
Contacts	
Contact material	AgSnO ₂
Max. continuous current	16 A
Max. make current (resistive)	120 A / 50 ms (AC)
Max. switching voltage	250 VAC
Max. switching power (resistive)	4 kVA (AC), DC see load limit curve
Recommended minimum load	12 VAC/DC, 100 mA
Pull-in/drop-out/bounce time typ.	15 ms / 5 ms / -
Mechanical life	10 x 10 ⁶ switching operations
General Specifications	
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Ambient operating temperature at U _N	-25 ... +40 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	17.5 x 55 x 90, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Standards/approvals	EN 60664-1, EN 61810-1

Accessories, see pages 82



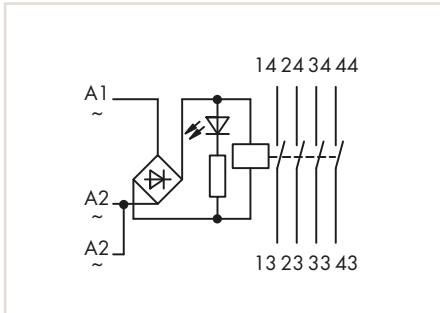
Load limit curve

Note:

- Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.
- In the case of gold-plated elementary relays switching voltages of 30 VDC and currents of 50 mA should not be exceeded. Higher switching power eventually evaporates the gold layer. The resulting deposits in the housing may reduce the service life.

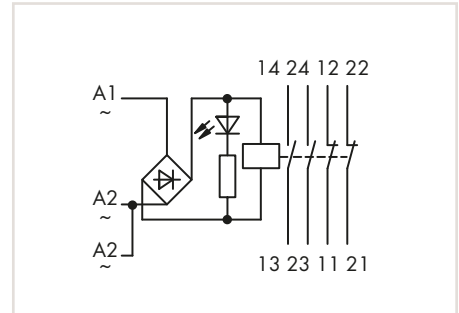
Technical Data

Coil	
Input voltage range	$U_N -15 \dots +10 \%$
Contacts	
Contact material	AgNi + Au
Max. continuous current	4 A
Max. make current (resistive)	4 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	1 kVA, resistive, see load limit curve
Recommended minimum load	100 mA / 100 mV
Pull-in/drop-out/bounce time typ.	20 ms / 20 ms / 1 ms
Mechanical life	10×10^8 switching operations
General Specifications	
Nominal voltage	230 V
Rated surge voltage	2.5 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	1.5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	0.75 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	1 kV _{rms}
Ambient operating temperature at U_N	-25 ... +40 °C
Storage temperature	-40 ... +85 °C
Dimensions (mm) W x H x D	17.5 x 55 x 90, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Standards/approvals	EN 60664-1, EN 61810-1



Relay module,
4 make contacts,
max. continuous current: 4 A,
red status indicator, 18 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VAC/DC	12 mA	789-552	10



Relay module,
2 make contacts and 2 break contacts,
max. continuous current: 4 A,
red status indicator, 18 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VAC/DC	12 mA	789-536	10

Coil	
Input voltage range	$U_N -15 \dots +10 \%$
Contacts	
Contact material	AgNi + Au
Max. continuous current	4 A
Max. make current (resistive)	4 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	1 kVA, resistive, see load limit curve
Recommended minimum load	100 mA / 100 mV
Pull-in/drop-out/bounce time typ.	20 ms / 20 ms / 1 ms
Mechanical life	10×10^8 switching operations
General Specifications	
Nominal voltage	230 V
Rated surge voltage	2.5 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	1.5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	0.75 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	1 kV _{rms}
Ambient operating temperature at U_N	-25 ... +40 °C
Storage temperature	-40 ... +85 °C
Dimensions (mm) W x H x D	17.5 x 55 x 90, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Standards/approvals	EN 60664-1, EN 61810-1

Relay Modules in a DIN-Rail-Mount Enclosure 789 Series

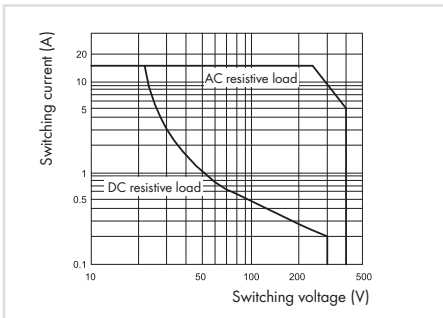
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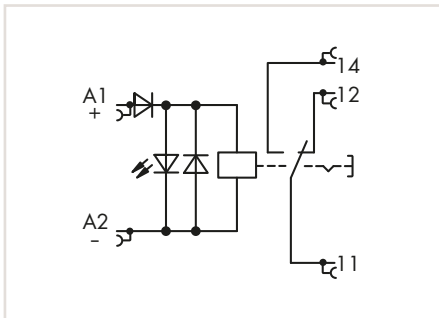


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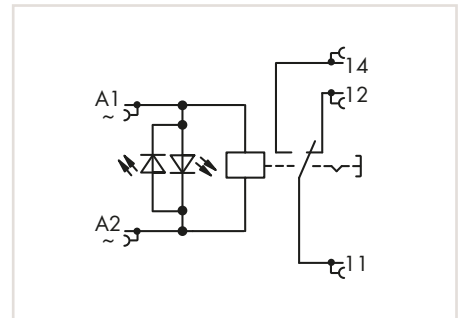
Load limit curve

Note:
Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.



Relay module,
1 changeover contact,
max. continuous current: 12 A,
manual operation,
red status indicator, 18 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	17 mA	789-1341	10



Relay module,
1 changeover contact,
max. continuous current: 12 A,
manual operation,
red status indicator, 18 mm wide

U_N	I_N	Item No.	Pack. Unit
230 VAC	3.5 mA	789-1544	10

Technical Data

Coil	
Input voltage range	$U_N -10 \dots +10 \%$
Contacts	
Contact material	AgNi
Max. continuous current	12 A
Max. make current (resistive)	24 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	AC 3 kVA
Recommended minimum load	10 mA / AC/DC 12 V
Pull-in/drop-out/bounce time typ.	15 ms / 8 ms / 6 ms
Mechanical life	5×10^6 switching operations
General Specifications	
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	3.5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Ambient operating temperature at U_N	-25 ... +50 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	17.5 x 55 x 90, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Standards/approvals	EN 60664-1

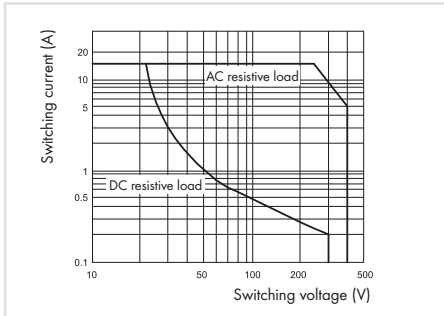
Accessories,
see pages 82



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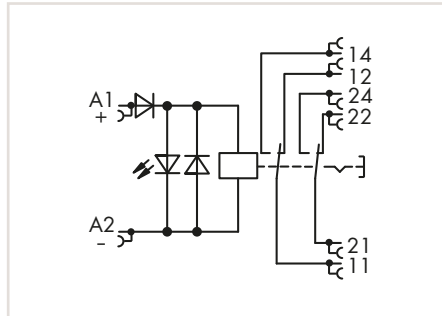


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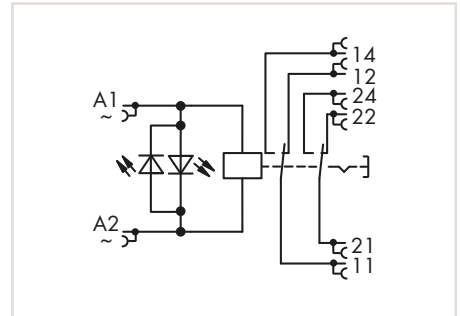
Load limit curve

Note:
Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.



Relay module,
2 changeover contacts,
max. continuous current: 8 A,
manual operation,
red status indicator, 18 mm wide

U _N	I _N	Item No.	Pack. Unit
24 VDC	17 mA	789-1346	10



Relay module,
2 changeover contacts,
max. continuous current: 8 A,
manual operation,
red status indicator, 18 mm wide

U _N	I _N	Item No.	Pack. Unit
230 VAC	3.5 mA	789-1549	10

Technical Data

Coil	
Input voltage range	U _N -10 ... +10 %
Contacts	
Contact material	AgNi
Max. continuous current	8 A
Max. make current (resistive)	12 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	AC 2 x 2 kVA
Recommended minimum load	10 mA / AC/DC 12 V
Pull-in/drop-out/bounce time typ.	15 ms / 8 ms / 6 ms
Mechanical life	5 x 10 ⁶ switching operations
General Specifications	
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	3.5 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	1.5 kV _{rms}
Ambient operating temperature at U _N	-25 ... +50 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	17.5 x 55 x 90, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Standards/approvals	EN 60664-1

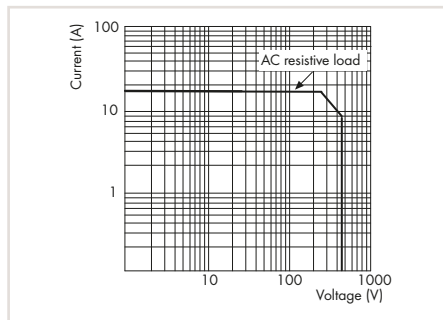
U _N -10 ... +10 %
AgNi
8 A
12 A
250 VAC
AC 2 x 2 kVA
10 mA / AC/DC 12 V
15 ms / 8 ms / 7 ms
5 x 10 ⁶ switching operations
250 V
4 kV
2
3.5 kV _{rms}
1 kV _{rms}
1.5 kV _{rms}
-25 ... +50 °C
-40 ... +70 °C
17.5 x 55 x 90, height from upper-edge of DIN-rail
CAGE CLAMP®
0.08 ... 2.5 mm ² / 28 ... 14 AWG
9 ... 10 mm / 0.35 ... 0.39 inch
EN 60664-1

U _N -10 ... +10 %
AgNi
8 A
12 A
250 VAC
AC 2 x 2 kVA
10 mA / AC/DC 12 V
15 ms / 8 ms / 7 ms
5 x 10 ⁶ switching operations
250 V
4 kV
2
3.5 kV _{rms}
1 kV _{rms}
1.5 kV _{rms}
-25 ... +50 °C
-40 ... +70 °C
17.5 x 55 x 90, height from upper-edge of DIN-rail
CAGE CLAMP®
0.08 ... 2.5 mm ² / 28 ... 14 AWG
9 ... 10 mm / 0.35 ... 0.39 inch
EN 60664-1

Relay Modules in a DIN-Rail-Mount Enclosure

789 Series

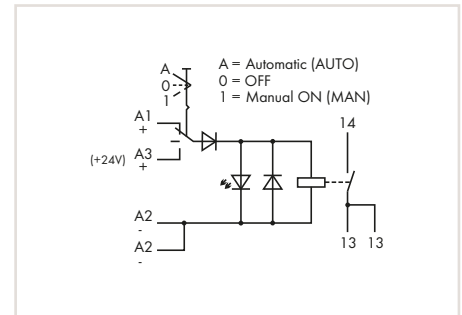
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Load limit curve

Contact life, type of load	Capability	Electrical life
Incandescent lamp	2200 W	20,000
Halogen lamp 230 VAC	1400 W	50,000
Halogen trafo	120 VA	20,000
Fluorescent lamp not comp., CCG ①,		
cos φ 0.406	20 x 58 W	25,000
Fluorescent lamp comp., CCG ①, C parallel	9 x 58 W	25,000
Fluorescent lamp comp., CCG ①, Duocircuit	600 W	20,000
Fluorescent lamp with ECG ②	12 x 58 W	25,000
Energy saving lamp 15 W	25 pcs	20,000
Energy saving lamp 13 W	30 pcs	20,000
Energy saving lamp 9 W	38 pcs	20,000
Gas discharge lamp	1000 W	20,000
Dulux-Lamp not compensated	800 W	20,000
Dulux-Lamp compensated	500 W	20,000
Max. capacitance at 230 VAC	60 µF	> 5,000

① CCG = Conventional Control Gear
② ECG = Electronic Control Gear



Note:
Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.

Relay module,
1 make contact,
max. continuous current: 16 A,
manual-0-automatic switch,
red status indicator, 18 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	19 mA	789-323	10

Technical Data

Coil

Input voltage range

 $U_N -15 \dots +20 \%$

Contacts

Contact material

AgSnO₂

Max. continuous current

16 A

Max. make current (resistive)

120 A / 50 ms (AC)

Max. switching voltage

250 VAC

Max. switching power (resistive)

AC 4 kVA, DC see load limit curve

Recommended minimum load

100 mA / DC 5 V

Pull-in/drop-out/bounce time typ.

15 ms / 5 ms / -

Mechanical life

10 x 10⁶ switching operations

General Specifications

Nominal voltage

250 V

Rated surge voltage

4 kV

Pollution degree

2

Dielectric strength, contact-coil (AC, 1 min)

4 kV_{rms}

Dielectric strength open contact (AC, 1 min)

1 kV_{rms}Ambient operating temperature at U_N

-25 ... +40 °C

Storage temperature

-40 ... +70 °C

Dimensions (mm) W x H x D

17.5 x 55 x 90, height from upper-edge of DIN-rail

Connection technology

CAGE CLAMP®

Conductor range

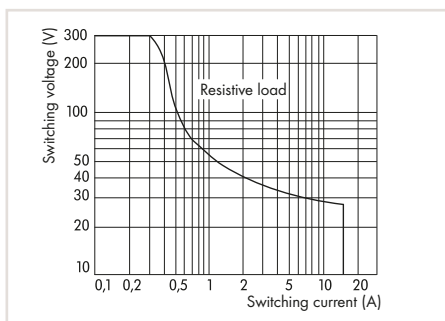
0.08 ... 2.5 mm² / 28 ... 14 AWG

Strip length

9 ... 10 mm / 0.35 ... 0.39 inch

Standards/approvals

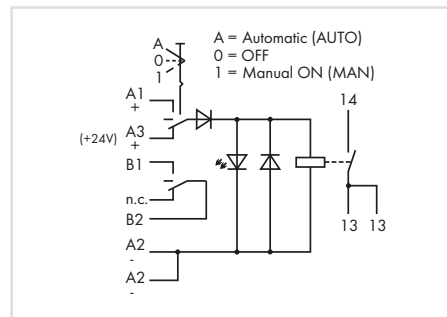
EN 60664-1



DC load limit curve

Contact life, type of load	Electrical life
3000 W, incandescent lamp, 230 VAC, OT 8.3 % ①, 5 min ⁻¹	12,000
620 W, gas discharge lamp, CCG ②, 120/277 VAC, UL 508, 50 °C	6,000
1200 W, tungsten lamp, 120/277 VAC, UL 508, 50 °C	6,000
16 A, 250 VAC, cos φ = 1, 85 °C, IEC 61810	5,000

① OT= On-Time
② CCG = Conventional Control Gear



Relay module,
1 make contact,
max. continuous current: 16 A,
for lamp loads,
manual-0-automatic switch,
red status indicator, 18 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	17 mA	789-324	10

Technical Data

Coil

Input voltage range

$U_N -10 \dots +20 \%$

Contacts

Contact material

AgSnO₂, pre-make contact W

Max. continuous current

16 A

Max. make current (resistive)

165 A / 20 ms (AC)

Max. switching voltage

250 VAC

Max. switching power (resistive)

AC 4 kVA, DC see load limit curve

Recommended minimum load

-

Pull-in/drop-out/bounce time typ.

10 ms / 5 ms / 4 ms

Mechanical life

5 x 10⁶ switching operations

General Specifications

Nominal voltage

250 V

Rated surge voltage

4 kV

Pollution degree

2

Dielectric strength, contact-coil (AC, 1 min)

4 kV_{rms}

Dielectric strength open contact (AC, 1 min)

1 kV_{rms}

Ambient operating temperature at U_N

-25 ... +40 °C

Storage temperature

-40 ... +70 °C

Dimensions (mm) W x H x D

17.5 x 55 x 90, height from upper-edge of DIN-rail

Connection technology

CAGE CLAMP®

Conductor range

0.08 ... 2.5 mm² / 28 ... 14 AWG

Strip length

9 ... 10 mm / 0.35 ... 0.39 inch

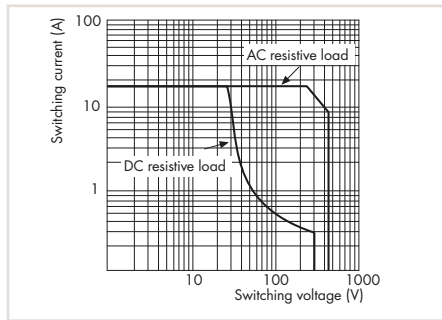
Standards/approvals

EN 60664-1, EN 61810-1

Relay Modules in a DIN-Rail-Mount Enclosure

789 Series

1

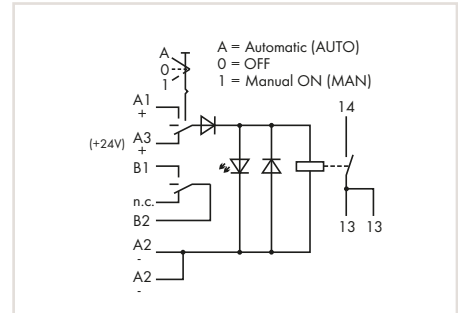


Load limit curve



Contact life, type of load	Capability	Electrical life
Incandescent lamp	2200 W	20,000
Halogen lamp 230 VAC	1400 W	50,000
Halogen trafo	120 VA	20,000
Fluorescent lamp not comp., CCG ①		
cos φ 0.406	20 x 58 W	25,000
Fluorescent lamp comp., CCG ①, C parallel	9 x 58 W	25,000
Fluorescent lamp comp., CCG ①, Duocircuit	600 W	20,000
Fluorescent lamp with ECG ②	12 x 58 W	25,000
Energy saving lamp 15 W	25 pcs	20,000
Energy saving lamp 13 W	30 pcs	20,000
Energy saving lamp 9 W	38 pcs	20,000
Gas discharge lamp	1000 W	20,000
Dulux-Lamp not compensated	800 W	20,000
Dulux-Lamp compensated	500 W	20,000
Max. capacitance at 230 VAC	60 µF	> 5,000

① CCG = Conventional Control Gear
② ECG = Electronic Control Gear



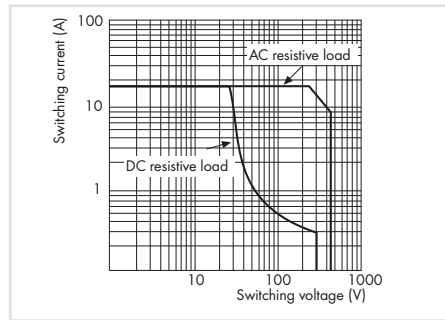
Note:
Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.

Relay module,
1 make contact,
max. continuous current: 16 A,
manual-0-automatic switch,
red status indicator, 18 mm wide

U _N	I _N	Item No.	Pack. Unit
24 VDC	19 mA	789-325	10

Technical Data

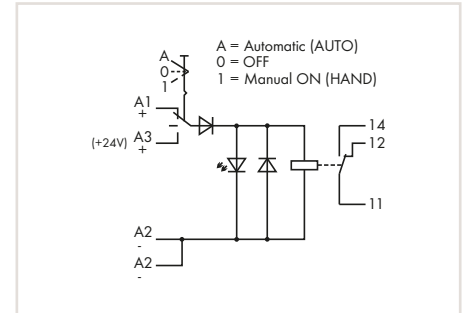
Coil	
Input voltage range	U _N -15 ... +20 %
Contacts	
Contact material	AgSnO ₂
Max. continuous current	16 A
Max. make current (resistive)	120 A / 50 ms (AC)
Max. switching voltage	250 VAC
Max. switching power (resistive)	AC 4 kVA, DC see load limit curve
Recommended minimum load	100 mA / DC 5 V
Pull-in/drop-out/bounce time typ.	15 ms / 5 ms / -
Mechanical life	10 x 10 ⁶ switching operations
General Specifications	
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Ambient operating temperature at U _N	-25 ... +40 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	17.5 x 55 x 90, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Standards/approvals	EN 60664-1



Load limit curve

Contact life, type of load	Capability	Electrical life
Incandescent lamp	2200 W	20,000
Halogen lamp 230 VAC	1400 W	50,000
Halogen trafo	120 VA	20,000
Fluorescent lamp not comp., CCG ①,		
cos φ 0.406	20 x 58 W	25,000
Fluorescent lamp comp., CCG ①, C parallel	9 x 58 W	25,000
Fluorescent lamp comp., CCG ①, Duo-circuit	600 W	20,000
Fluorescent lamp with ECG ②	12 x 58 W	25,000
Energy saving lamp 15 W	25 pcs	20,000
Energy saving lamp 13 W	30 pcs	20,000
Energy saving lamp 9 W	38 pcs	20,000
Gas discharge lamp	1000 W	20,000
Dulux-Lamp not compensated	800 W	20,000
Dulux-Lamp compensated	500 W	20,000
Max. capacitance at 230 VAC	60 µF	> 5,000

① CCG = Conventional Control Gear
② ECG = Electronic Control Gear



Note:
Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.

Relay module,
1 changeover contact,
max. continuous current: 12 A,
for lamp loads,
manual-0-automatic switch,
red status indicator, 18 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	19 mA	789-326	10

Technical Data

Coil

Input voltage range

$U_N -15 \dots +20 \%$

Contacts

Contact material

AgSnO₂

Max. continuous current

12 A

Max. make current (resistive)

120 A / 50 ms (AC)

Max. switching voltage

250 VAC

Max. switching power (resistive)

AC 4 kVA, DC see load limit curve

Recommended minimum load

100 mA / DC 5 V

Pull-in/drop-out/bounce time typ.

15 ms / 5 ms / -

Mechanical life

10 x 10⁶ switching operations

General Specifications

Nominal voltage

250 V

Rated surge voltage

4 kV

Pollution degree

2

Dielectric strength, contact-coil (AC, 1 min)

4 kV_{rms}

Dielectric strength open contact (AC, 1 min)

1 kV_{rms}

Ambient operating temperature at U_N

-20 ... +40 °C

Storage temperature

-40 ... +70 °C

Dimensions (mm) W x H x D

17.5 x 55 x 90, height from upper-edge of DIN-rail

Connection technology

CAGE CLAMP®

Conductor range

0.08 ... 2.5 mm² / 28 ... 14 AWG

Strip length

9 ... 10 mm / 0.35 ... 0.39 inch

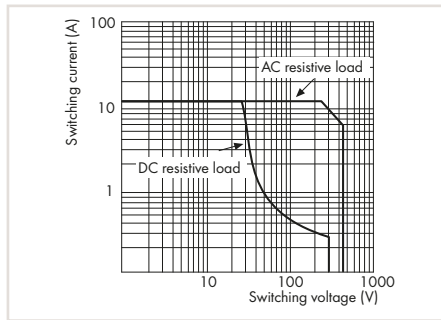
Standards/approvals

EN 60664-1, EN 61810-1

Relay Modules in a DIN-Rail-Mount Enclosure

789 Series

1

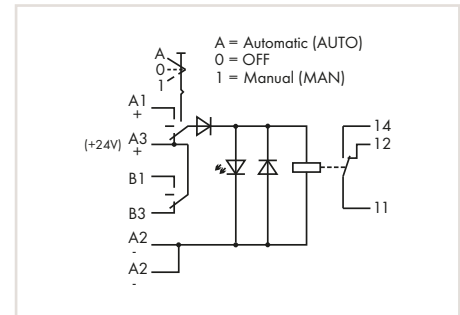


Load limit curve



Contact life, type of load	Capability	Electrical life
Incandescent lamp	2200 W	20,000
Halogen lamp 230 VAC	1400 W	50,000
Halogen trafo	120 VA	20,000
Fluorescent lamp not comp., CCG ①, cos φ 0.406	20 x 58 W	25,000
Fluorescent lamp comp., CCG ①, C parallel	9 x 58 W	25,000
Fluorescent lamp comp., CCG ①, Duo-circuit	600 W	20,000
Fluorescent lamp with ECG ②	12 x 58 W	25,000
Energy saving lamp 15 W	25 pcs	20,000
Energy saving lamp 13 W	30 pcs	20,000
Energy saving lamp 9 W	38 pcs	20,000
Gas discharge lamp	1000 W	20,000
Dulux-Lamp not compensated	800 W	20,000
Dulux-Lamp compensated	500 W	20,000
Max. capacitance at 230 VAC	60 µF	> 5,000

① CCG = Conventional Control Gear
② ECG = Electronic Control Gear



Note:
Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.

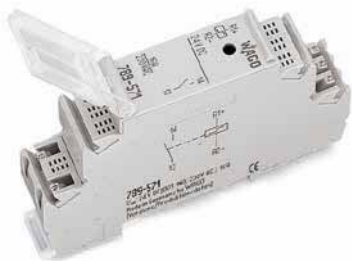
Relay module,
1 changeover contact,
max. continuous current: 12 A,
for lamp loads,
manual-0-automatic switch,
red status indicator, 18 mm wide

U _N	I _N	Item No.	Pack. Unit
24 VDC	19 mA	789-329	10

Technical Data

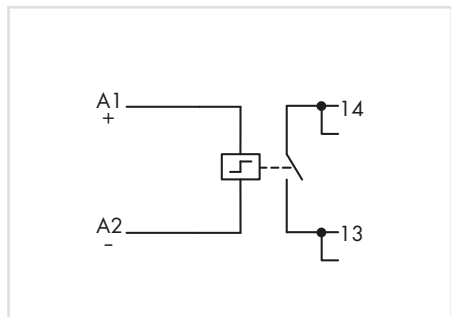
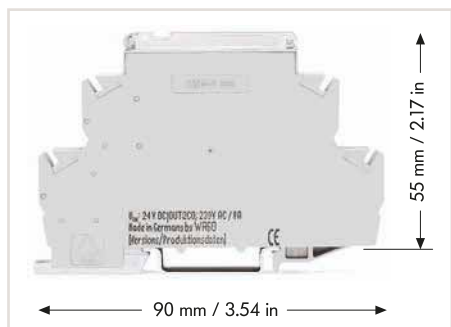
Coil	
Input voltage range	U _N -15 ... +20 %
Contacts	
Contact material	AgSnO ₂
Max. continuous current	12 A
Max. make current (resistive)	120 A / 50 ms (AC)
Max. switching voltage	250 VAC
Max. switching power (resistive)	AC 4 kVA, DC see load limit curve
Recommended minimum load	100 mA / DC 5 V
Pull-in/drop-out/bounce time typ.	15 ms / 5 ms / -
Mechanical life	10 x 10 ⁶ switching operations
General Specifications	
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Ambient operating temperature at U _N	-25 ... +40 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	17.5 x 55 x 90, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Standards/approvals	EN 60664-1

Latching Relay Modules in DIN-Rail Mount Enclosure 789 Series

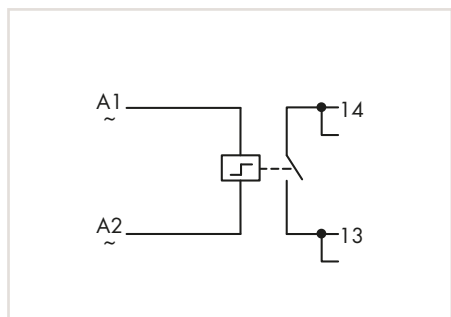


Latching relay module,
1 make contact,
max. continuous current: 16 A,
red status indicator, 18 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	42 mA	789-571	10
230 VAC	10 mA	789-570	10



789-571



789-570

Note:

- Lamp load: max. load 1500 W
- Fluorescent lamp, dual circuit:
max. load 20 x 58 W series compensated
- Electronic ballasts: 10 x 58 W

Technical Data

Contact material	AgSnO ₂
Input voltage range	$U_N - 15 \dots + 10 \%$
Max. switching voltage	250 VAC
Max. make current	50 A / 20 ms
Max. continuous current	16 A
Max. switching power (resistive)	AC 4000 VA
Recommended minimum load	0.1 A
Minimum switch-on time	40 ms
Minimum break time	180 ms
Coil control	Pulse mode
Fuse protection	Circuit breaker max. 16 A, B characteristic
Nominal operating mode	continuous duty
Max. switching load with load/without load	6 min ⁻¹ / 4 s ⁻¹
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Mechanical life	10 x 10 ⁴ switching operations
Electrical life (N.O., resistive load)	5 x 10 ⁴ switching operations
Ambient operating temperature at U_N	-25 ... +40 °C
Storage temperature	-40 ... +85 °C
Dimensions (mm) W x H x D	17.5 x 55 x 90, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Standards/approvals	EN 60664-1

Accessories,
see pages 82

Accessories

789 Series

Push-in type jumper bar



Description	Item No.	Pack. Unit
I _N 16 A, uninsulated, 12-way, to be cut to the required length	789-112	100 (4x25)

Operating tool with a partially insulated shaft



Description	Item No.	Pack. Unit
Type 2, 3.5 x 0.5 mm blade	210-720	1

Felt-tip pen



Description	Item No.	Pack. Unit
Fiber-typ pen for permanent marking	210-110	1

Miniature WSB Quick marking system,
10 strips with 10 markers,
white with black printing

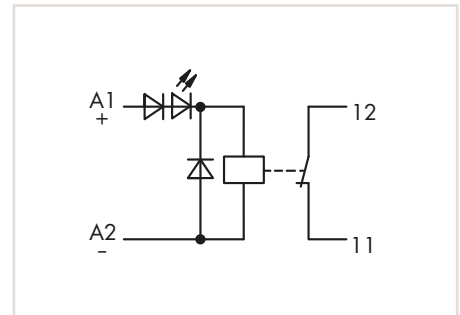
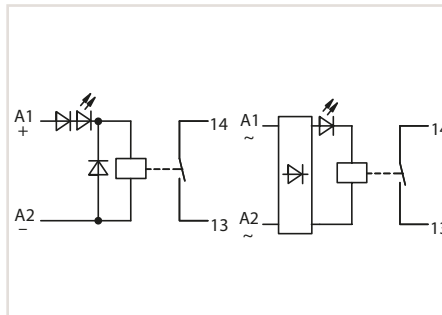


Description	Item No.	Pack. Unit
plain	248-501	5 cards
Marking		
1 ... 10 (10 x)	248-502	5 cards
11 ... 20 (10 x)	248-503	5 cards
21 ... 30 (10 x)	248-504	5 cards
31 ... 40 (10 x)	248-505	5 cards
41 ... 50 (10 x)	248-506	5 cards
1 ... 50 (2 x)	248-566	5 cards
K 1 ... K 10 (10 x)	248-450	5 cards
K 11 ... K 20 (10 x)	248-451	5 cards
K 100 (10 x)	248-452	5 cards
U 1 ... U 10 (10 x)	248-453	5 cards
U 11 ... U 20 (10 x)	248-454	5 cards
U 100 (10 x)	248-455	5 cards

DIN-Rail-Mount Modules - Relay Modules and Sockets

288 Series

1



Relay module,
1 make contact,
max. continuous current: 5 A,
13 mm wide

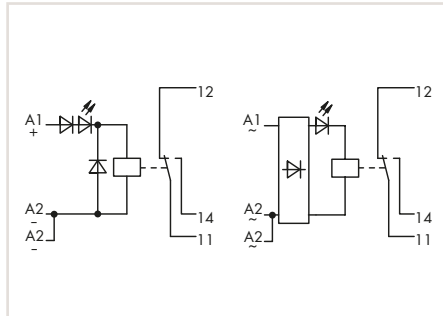
U_N	I_N	Item No.	Pack. Unit
24 VDC	16 mA	288-364	1
24 VAC/DC	16 mA	288-564	1
115 VAC/DC	4.4 mA	288-567	1

Relay module,
1 break contact,
max. continuous current: 5 A,
13 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	16 mA	288-368	1

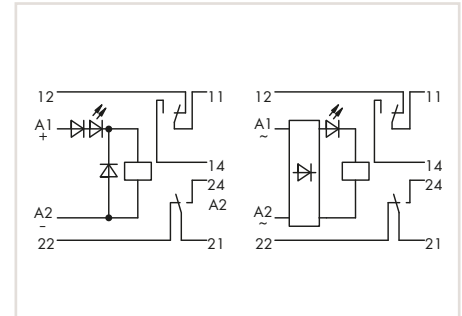
Technical Data

Contact material	AgNi 0.15	AgNi 0.15
Max. switching voltage	250 VAC	250 VAC
Max. make current	4 s / 16 A	4 s / 16 A
Max. continuous current	5 A	5 A
Max. switching power (resistive)	1250 VA	1250 VA
Pull-in/drop-out/bounce time typ.	4 ms / 6 ms / 2 ms	4 ms / 6 ms / 2 ms
Dielectric strength, contact-coil (AC, 1 min)	4 kV	4 kV
Nominal voltage	250 V	250 V
Rated surge voltage	4 kV	4 kV
Pollution degree	2	2
Mechanical life	30 x 10 ⁶ switching operations	30 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	2 x 10 ⁵ switching operations	2 x 10 ⁵ switching operations
Ambient operating temperature	-25 ... +40 °C	-25 ... +40 °C
Dimensions incl. mounting carrier and relay (mm) W x H x D	13 x 47 x 85, height from upper-edge of DIN-rail	13 x 47 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG	0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch	5 ... 6 mm / 0.2 ... 0.24 inch



Relay module,
1 changeover contact,
max. continuous current: 6 A,
12 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	21.8 mA	288-304	1
24 VAC/DC	21.8 mA	288-504	1



Relay module,
2 changeover contacts,
max. continuous current: 6 A,
23 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	21.8 mA	288-312	1
24 VAC/DC	21.8 mA	288-512	1

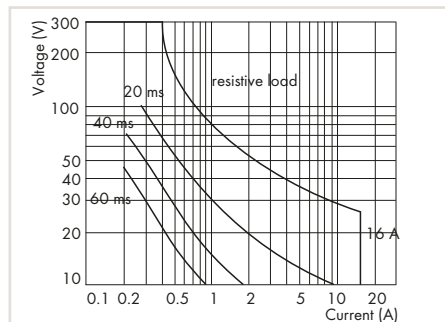
Technical Data

Contact material	AgNi 0.15	AgNi 0.15
Max. switching voltage	250 VAC	250 VAC
Max. make current	4 s / 16 A	4 s / 14 A
Max. continuous current	6 A	6 A
Max. switching power (resistive)	1500 VA	1500 VA
Pull-in/drop-out/bounce time typ.	9 ms / 3 ms / 2 ms	8 ms / 3 ms / 2 ms
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}	2 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)		1.5 kV _{rms}
Nominal voltage	250 V	250 V
Rated surge voltage	2.5 kV	2.5 kV
Pollution degree	2	2
Mechanical life	30 x 10 ⁶ switching operations	20 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	1 x 10 ⁵ switching operations	1 x 10 ⁵ switching operations
Ambient operating temperature	-25 ... +40 °C	-25 ... +40 °C
Storage temperature	-40 ... +80 °C	-40 ... +80 °C
Dimensions incl. mounting carrier and relay (mm) W x H x D	20.5 x 48 x 85, height from upper-edge of DIN-rail	20.5 x 48 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG	0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch	5 ... 6 mm / 0.22 inch

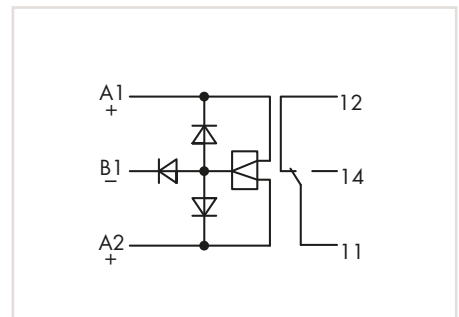
DIN-Rail-Mount Modules - Relay Modules and Sockets

288 Series

1



DC load limit curve



Relay module, bistable,
1 changeover contact,
max. continuous current: 6 A,
21 mm wide

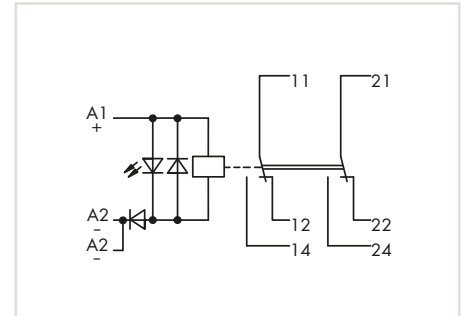
U_N	I_N	Item No.	Pack. Unit
24 VDC	41.5 mA	288-380	1

Technical Data

Input voltage range	$U_N -15 \dots +20 \%$
Contact material	AgNi 0.15
Max. switching voltage	250 VAC
Max. make current	4 s / 16 A
Max. continuous current	6 A
Max. switching power (resistive)	1500 VA
Pull-in/drop-out/bounce time typ.	9 ms / 3 ms / 2 ms
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Dielectric strength open contact	1 kV _{rms}
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Mechanical life	30 x 10 ⁶ switching operations
Ambient operating temperature	-25 ... +40 °C
Storage temperature	-40 ... +70 °C
Dimensions incl. mounting carrier and relay (mm) W x H x D	20.5 x 48 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch



Similar to picture



Relay module, with forced operated contacts,
2 changeover contacts,
max. continuous current: 0.3 A,
19 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	36 mA	288-437	1

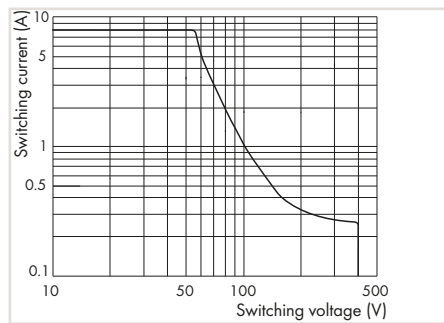
Technical Data

Input voltage range	$U_N -15 \dots +10 \%$
Contact material	AgNi 10 + Au
Contact type	2 changeover contacts
Max. switching voltage	60 V
Max. continuous current	0.3 A
Max. switching power (resistive)	7 W (max.)
Recommended minimum load	100 mV AC/DC / 1 mA / 1 mW
Pull-in/drop-out/bounce time typ.	15 ms / 12 ms / -
Nominal voltage	250 V
Rated surge voltage	1.5 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1.5 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	1 kV _{rms}
Mechanical life	5×10^7 switching operations
Ambient operating temperature	-20 ... +70 °C
Relay fastening	direct soldered
Dimensions incl. mounting carrier and relay (mm) W x H x D	19 x 38 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Nominal operating mode	EN 60664-1, EN 50205

DIN-Rail-Mount Modules - Relay Modules and Sockets

288 Series

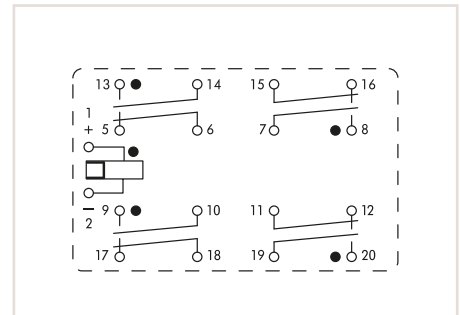
1



DC load limit curve

Note:

- If required a ventilation hole (e) can be made in the cover, reducing the degree of protection from IP67 to IP30.
- If an outer contact (20) should weld then the forced operated inner contact (12) driven by the actuator (d) remains open. The rotating armature (c) remains free to move. The unaffected contact pairs can operate normally, (i.e., their function to make or break remains unaffected).
- If an inner contact should weld (12) then the movement of the rotating armature (c) is blocked via the operator (d). Open contacts of all four contact pairs remain open. This arrangement corresponds to conventional, forced contact operation.



Relay module with forced operated contacts,
4 make contacts and 4 break contacts,
max. continuous current: 6 A,
64 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VAC/DC	26 mA	288-414	1
230 VAC/DC	10 mA	288-418	1

Technical Data**Coil**

Input voltage range

Contacts

Contact material

Max. continuous current

Max. make current (resistive)

Max. switching voltage

Max. switching power (resistive)

Recommended minimum load

Pull-in/drop-out/bounce time typ.

Mechanical life

Electrical life (N.O., resistive load)

General Specifications

Nominal voltage

Rated surge voltage

Pollution degree

Dielectric strength, contact-coil (AC, 1 min)

Dielectric strength contact-contact (AC, 1 min)

Ambient operating temperature at U_N

Storage temperature

Dimensions incl. mounting carrier and relay (mm) W x H x D

Connection technology

Conductor range

Strip length

Forced operation

Standards/approvals

 U_N -15 ... +10 %AgSnO₂

6 A

20 A

250 VAC

1500 VA

≥ 10 V / 10 mA

18 ms / 21 ms / 4 ms

1 x 10⁷ switching operations1 x 10⁵ switching operations

250 V

2.5 kV

2

2 kV_{rms}1.5 kV_{rms}

-40 ... +70 °C

-40 ... +80 °C

63.5 x 40 x 85, height from upper-edge of DIN-rail

CAGE CLAMP®

0.08 ... 2.5 mm² / 28 ... 12 AWG

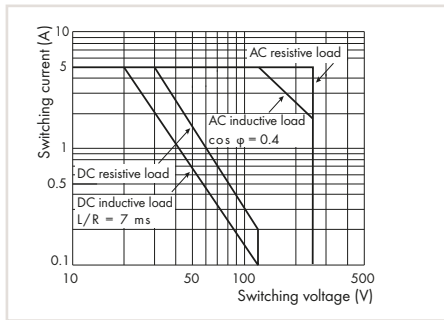
5 ... 6 mm / 0.2 ... 0.24 inch

Type B

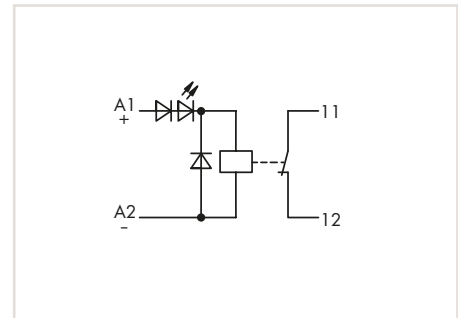
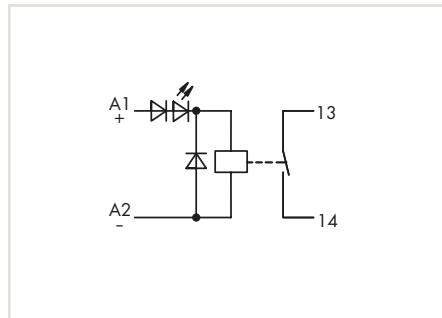
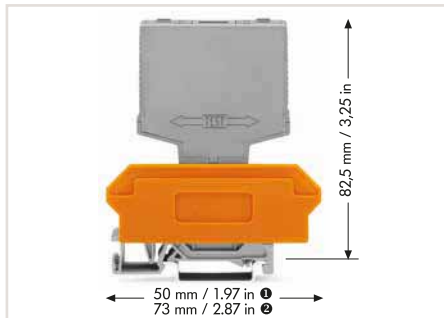
EN 60664-1; EN 50205; EN 61810-1;
ESTI (SEV): 09.1133; UL 508: E120782;
TÜV: 968/EZ 116.02/09

Pluggable Relay Modules 286 Series

1



DC load limit curve



Relay module,
1 make contact,
max. continuous current: 5 A,
red status indicator, 10 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	7.4 mA	286-364	1

Relay module,
1 break contact,
max. continuous current: 5 A,
red status indicator, 10 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	20.4 mA	286-368	1

Technical Data

Contact material	AgSnO
Max. continuous current	5 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	1250 VA
Pull-in/drop-out/bounce time typ.	8 ms / 10 ms / 2 ms
Mechanical life	5 x 10 ⁴ switching operations
Electrical life (N.O., resistive load)	1 x 10 ⁴ switching operations
Nominal voltage	250 V
Rated surge voltage	2.5 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	3 kV _{rms}
Ambient operating temperature	-25 ... +40 °C
Storage temperature	-25 ... +40 °C

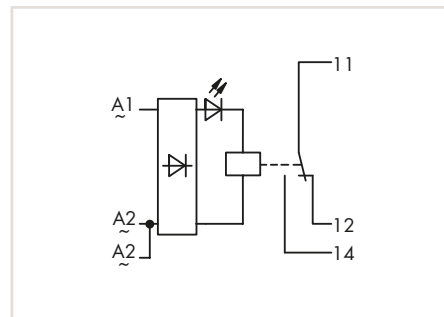
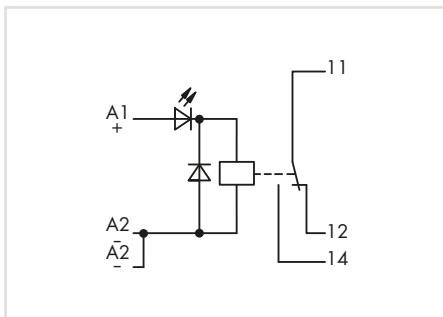
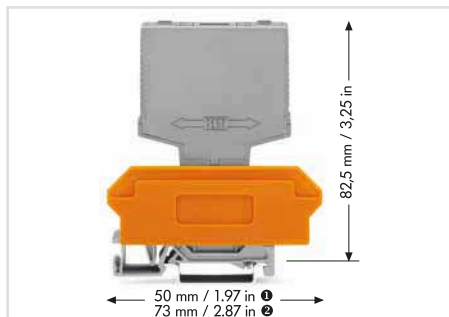
Contact material	AgNi
Max. continuous current	5 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	1250 VA
Pull-in/drop-out/bounce time typ.	10 ms / 4 ms / 3 ms
Mechanical life	5 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	5 x 10 ⁴ switching operations
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Ambient operating temperature	-25 ... +40 °C
Storage temperature	-25 ... +40 °C

Accessories

Terminal block for pluggable modules	Width	Item No.	Pack. Unit
with 2-conductor terminal blocks, orange separator ①	12 mm	280-618	1
with 4-conductor terminal blocks, orange separator ②	12 mm	280-608	1
with 4-conductor terminal blocks, marker plate ②	15 mm	280-762	1
Conductor range: 0.08 mm ² ... 2.5 mm ² / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch			

Terminal block for pluggable modules	Width	Item No.	Pack. Unit
with 2-conductor terminal blocks, orange separator ①	12 mm	280-618	1
with 4-conductor terminal blocks, orange separator ②	12 mm	280-608	1
with 4-conductor terminal blocks, marker plate ②	15 mm	280-762	1
Conductor range: 0.08 mm ² ... 2.5 mm ² / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch			

Marking, see page 95



Relay module, 1 changeover contact, max. continuous current: 7 A, red status indicator, 15 mm wide

U _N	I _N	Item No.	Pack. Unit
24 VDC	19.4 mA	286-304	1

U _N	I _N	Item No.	Pack. Unit
115 VAC	6.1 mA	286-507	1
230 VAC	4.8 mA	286-508	1

Technical Data

Contact material	AgNi 0.15
Max. continuous current	7 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	1750 VA
Pull-in/drop-out/bounce time typ.	8 ms / 6 ms / 4 ms
Mechanical life	30 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	1 x 10 ⁵ switching operations
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Ambient operating temperature	-25 ... +40 °C
Storage temperature	-25 ... +40 °C

Contact material	AgNi 0.15
Max. continuous current	7 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	1750 VA
Pull-in/drop-out/bounce time typ.	8 ms / 6 ms / 4 ms
Mechanical life	30 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	1 x 10 ⁵ switching operations
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Ambient operating temperature	-25 ... +40 °C
Storage temperature	-25 ... +40 °C

Contact material	AgNi 0.15
Max. continuous current	7 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	1750 VA
Pull-in/drop-out/bounce time typ.	8 ms / 6 ms / 4 ms
Mechanical life	30 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	1 x 10 ⁵ switching operations
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Ambient operating temperature	-25 ... +40 °C
Storage temperature	-25 ... +40 °C

Accessories

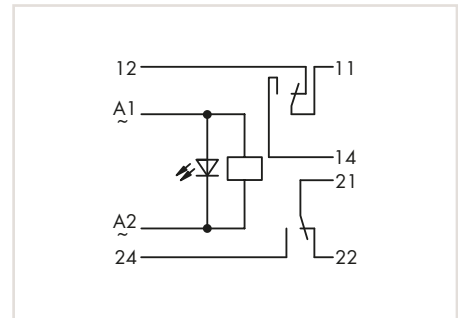
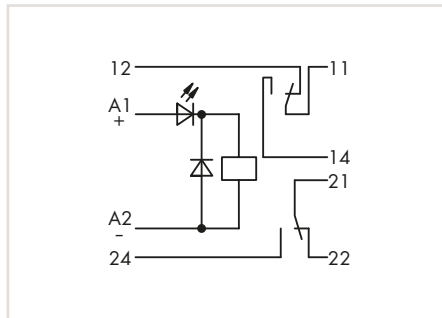
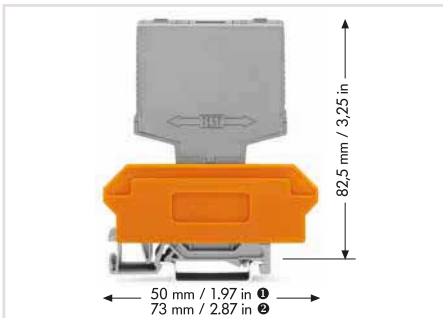
Terminal block for pluggable modules	Width	Item No.	Pack. Unit
with 2-conductor terminal blocks, orange separator ①	17 mm	280-619	1
with 4-conductor terminal blocks, orange separator ②	17 mm	280-609	1
with 4-conductor terminal blocks, marker plate ②	20 mm	280-763	1
Conductor range: 0.08 mm ² ... 2.5 mm ² / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch			

Terminal block for pluggable modules	Width	Item No.	Pack. Unit
with 2-conductor terminal blocks, orange separator ①	17 mm	280-619	1
with 4-conductor terminal blocks, orange separator ②	17 mm	280-609	1
with 4-conductor terminal blocks, marker plate ②	20 mm	280-763	1
Conductor range: 0.08 mm ² ... 2.5 mm ² / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch			

Terminal block for pluggable modules	Width	Item No.	Pack. Unit
with 2-conductor terminal blocks, orange separator ①	17 mm	280-619	1
with 4-conductor terminal blocks, orange separator ②	17 mm	280-609	1
with 4-conductor terminal blocks, marker plate ②	20 mm	280-763	1
Conductor range: 0.08 mm ² ... 2.5 mm ² / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch			

Pluggable Relay Modules 286 Series

1



Relay module, 2 changeover contacts, max. continuous current: 7 A, red status indicator, 20 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	21.8 mA	286-312	1
110 VDC	4.9 mA	286-315	1
220 VDC	5 mA	286-316	1

U_N	I_N	Item No.	Pack. Unit
115 VAC	10.5 mA	286-515	1
230 VAC	5.5 mA	286-516	1

Technical Data

Contact material	AgNi 0.15
Max. continuous current	7 A
Max. make current (resistive)	0.2 s / 30 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	1750 VA
Pull-in/drop-out/bounce time typ.	18 ms / 3 ms / 2 ms
Mechanical life	30 x 10 ⁷ switching operations
Electrical life (N.O., resistive load)	2.5 x 10 ⁵ switching operations
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	2 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	1.5 kV _{rms}
Ambient operating temperature	-25 ... +40 °C
Storage temperature	-25 ... +40 °C

Contact material	AgNi 0.15
Max. continuous current	7 A
Max. make current (resistive)	0.2 s / 30 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	1750 VA
Pull-in/drop-out/bounce time typ.	18 ms / 3 ms / 2 ms
Mechanical life	30 x 10 ⁷ switching operations
Electrical life (N.O., resistive load)	2.5 x 10 ⁵ switching operations
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	2 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	1.5 kV _{rms}
Ambient operating temperature	-25 ... +40 °C
Storage temperature	-25 ... +40 °C

Contact material	AgNi 0.15
Max. continuous current	7 A
Max. make current (resistive)	0.2 s / 30 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	1750 VA
Pull-in/drop-out/bounce time typ.	18 ms / 3 ms / 2 ms
Mechanical life	30 x 10 ⁷ switching operations
Electrical life (N.O., resistive load)	2.5 x 10 ⁵ switching operations
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	2 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	1.5 kV _{rms}
Ambient operating temperature	-25 ... +40 °C
Storage temperature	-25 ... +40 °C

Accessories

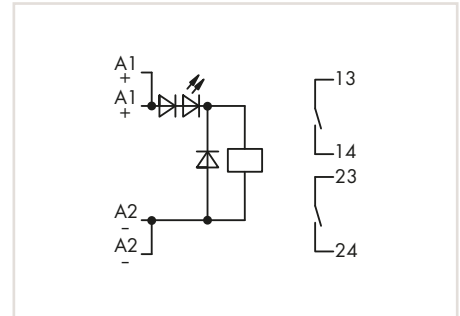
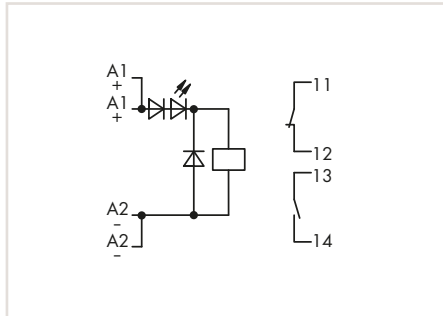
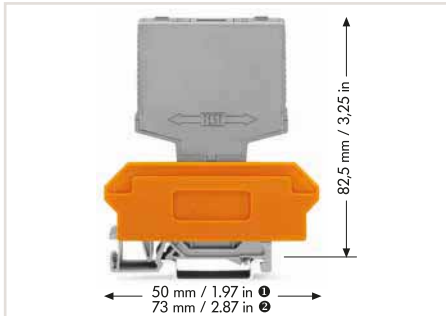
Terminal block for pluggable modules	Width	Item No.	Pack. Unit
with 2-conductor terminal blocks, orange separator ①	22 mm	280-638	1
with 4-conductor terminal blocks, orange separator ②	22 mm	280-628	1
with 4-conductor terminal blocks, marker plate ②	25 mm	280-764	1

Conductor range: 0.08 mm² ... 2.5 mm² / 28 ... 14 AWG;
Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch

Width	Item No.	Pack. Unit
22 mm	280-638	1
22 mm	280-628	1
25 mm	280-764	1

Width	Item No.	Pack. Unit
22 mm	280-638	1
22 mm	280-628	1
25 mm	280-764	1

Marking, see page 95



Relay module, 1 make contact and 1 break contact, max. continuous current: 6 A, red status indicator, 20 mm wide

U _N	I _N	Item No.	Pack. Unit
24 VDC	7.4 mA	286-320	1

Relay module, 2 break contacts, max. continuous current: 6 A, red status indicator, 20 mm wide

U _N	I _N	Item No.	Pack. Unit
24 VDC	7.4 mA	286-328	1

Technical Data

Contact material	AgSnO ₂
Max. continuous current	6 A
Max. make current (resistive)	1 s / 15 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	1500 VA
Pull-in/drop-out/bounce time typ.	10 ms / 4 ms / 1 ms
Mechanical life	5 x 10 ⁷ switching operations
Electrical life (N.O., resistive load)	1 x 10 ⁵ switching operations
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	3 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	1.5 kV _{rms}
Ambient operating temperature	-25 ... +40 °C
Storage temperature	-25 ... +40 °C

Contact material	AgSnO ₂
Max. continuous current	6 A
Max. make current (resistive)	1 s / 15 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	1500 VA
Pull-in/drop-out/bounce time typ.	10 ms / 4 ms / 1 ms
Mechanical life	5 x 10 ⁷ switching operations
Electrical life (N.O., resistive load)	1 x 10 ⁵ switching operations
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	3 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	1.5 kV _{rms}
Ambient operating temperature	-25 ... +40 °C
Storage temperature	-25 ... +40 °C

Contact material	AgSnO ₂
Max. continuous current	6 A
Max. make current (resistive)	1 s / 15 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	1500 VA
Pull-in/drop-out/bounce time typ.	10 ms / 4 ms / 1 ms
Mechanical life	5 x 10 ⁷ switching operations
Electrical life (N.O., resistive load)	1 x 10 ⁵ switching operations
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, contact-coil (AC, 1 min)	3 kV _{rms}
Dielectric strength open contact (AC, 1 min)	1 kV _{rms}
Dielectric strength contact-contact (AC, 1 min)	1.5 kV _{rms}
Ambient operating temperature	-25 ... +40 °C
Storage temperature	-25 ... +40 °C

Accessories

Terminal block for pluggable modules	Width	Item No.	Pack. Unit
with 2-conductor terminal blocks, orange separator ①	22 mm	280-638	1
with 4-conductor terminal blocks, orange separator ②	22 mm	280-628	1
with 4-conductor terminal blocks, marker plate ②	25 mm	280-764	1

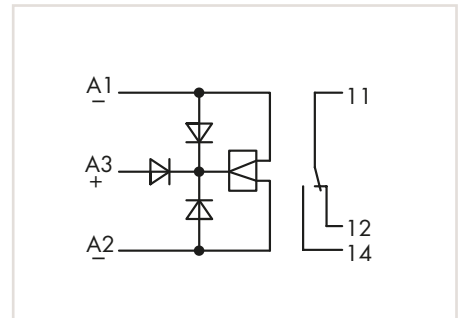
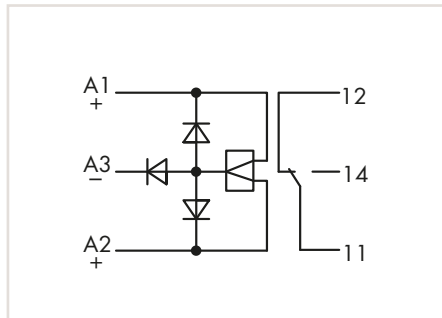
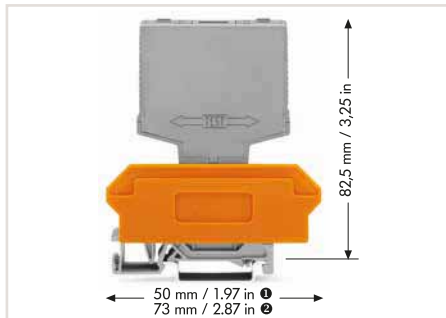
Conductor range: 0.08 mm² ... 2.5 mm² / 28 ... 14 AWG;
Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch

Width	Item No.	Pack. Unit
22 mm	280-638	1
22 mm	280-628	1
25 mm	280-764	1

Width	Item No.	Pack. Unit
22 mm	280-638	1
22 mm	280-628	1
25 mm	280-764	1

Pluggable Relay Modules 286 Series

1



Relay module, 1 changeover contact, max. continuous current: 6 A, red status indicator, 15 mm wide			
U_N	I_N	Item No.	Pack. Unit
24 VDC	41.5 mA	286-380	1

Relay module, 1 changeover contact, max. continuous current: 6 A, red status indicator, 15 mm wide			
U_N	I_N	Item No.	Pack. Unit
24 VDC	41.5 mA	286-381	1

Technical Data

Contact material	AgNi 0.15	AgNi 0.15
Max. continuous current	6 A	6 A
Max. make current (resistive)	20 A	20 A
Max. switching voltage	250 VAC	250 VAC
Max. switching power (resistive)	1500 VA	1500 VA
Pull-in/drop-out/bounce time typ.	9 ms / 3 ms / 2 ms	9 ms / 3 ms / 2 ms
Mechanical life	30 x 10 ⁶ switching operations	30 x 10 ⁶ switching operations
Electrical life (N.O., resistive load)	1 x 10 ⁵ switching operations	1 x 10 ⁵ switching operations
Nominal voltage	250 V	250 V
Rated surge voltage	4 kV	4 kV
Pollution degree	2	2
Dielectric strength, contact-coil (AC, 1 min)	4 kV _{rms}	4 kV _{rms}
Ambient operating temperature	-25 ... +40 °C	-25 ... +40 °C
Storage temperature	-25 ... +40 °C	-25 ... +40 °C

Accessories

Terminal block for pluggable modules	Width	Item No.	Pack. Unit	Width	Item No.	Pack. Unit
with 4-conductor terminal blocks, orange separator ②	17 mm	280-619	1	17 mm	280-619	1
with 4-conductor terminal blocks, orange separator ②	17 mm	280-609	1	17 mm	280-609	1
with 4-conductor terminal blocks, marker plate ②	20 mm	280-763	1	20 mm	280-763	1

Conductor range: 0.08 mm² ... 2.5 mm² / 28 ... 14 AWG;
Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch

Marking,
see page 95

Accessories

286 Series

WSB marker cards,
5 cards each containing 10 strips with 10 markers



Marking	Item No.	Pack. Unit
K	209-782	5
1 ... 10 (10 x)	209-702	5
A1, A2, 13, 14	209-952	5
A1, A2, 11, 12	209-953	5
11, 12, 14, A1, A2, A2, 11, 12, 14	209-994	5
12, A1, A2, 24, 11, 14, 21, 22	209-995	5
A1, A1, A2, A2, 11, 12, 13, 14, 23, 24	209-693	5
12, A1, A2, 23, 24, 11, 13, 14, 21, 22	209-691	5
12, A1, A2, 23, 24, 11, 13, 14, 33, 34	209-690	5
14, A1, A2, 33, 34, 13, 23, 24, 43, 44	209-692	5
A1, A2, 32, 31, 34, 42, 41, 12, 11, 14, 22, 21, 24, 44	249-656	5
L+, 1, L-, L-, 11, 12, 13, 14	209-954	5
A1, A2, A3, 11, 12, 14	249-607	5
A1, A1, A2, A2, 12, 11, 11, 14	209-996	5
A1, A1, St, A2, A2, 12, 11, 11, 14	209-601	5
U1, U2, U3, U4, OV, 12, 11, 11, 14, 14	209-951	5
U	209-789	5
A1, A2, A2, 1, 3, 2	209-685	5
A1, A2, A2, 1, 2, 2	209-686	5
A1+, A1+, A2-, A2-, 1, RL1, RL2, 2	209-955	5
A1+, A1+, A2-, A2-, 1+, 1+, A, 2- +/-	249-651	5
209-552	209-552	5
1, 2, 3, OV, +UB, OUT, ERR., OV	249-622	5
1, 2, OV, +UB, OUT, ERR., OV	249-623	5
Lin, Lin, Lout, Lout, 24V, UA, UA, OV	209-957	5
Lin, Lin, Lout, 11, 14, 14, Lin, Lin, Lout	249-654	5
lin, lin, lout, lout, 24V, 11, 12, 14, OV	209-997	5
S	209-682	5
V	209-784	5
F1 ... F10	209-787	5
D	209-783	5
+, -, 1, 2, 3, 13, 14, 4, 5, 6	249-608	5
L, N, Quitt, Störung, Test, N, 14, 24	249-606	5
A1, A2, Quitt, Störung, 12, 11, 11, 14	249-653	5

WSB marker cards, 4 mm, plain,
5 cards each containing 10 strips with 10 markers

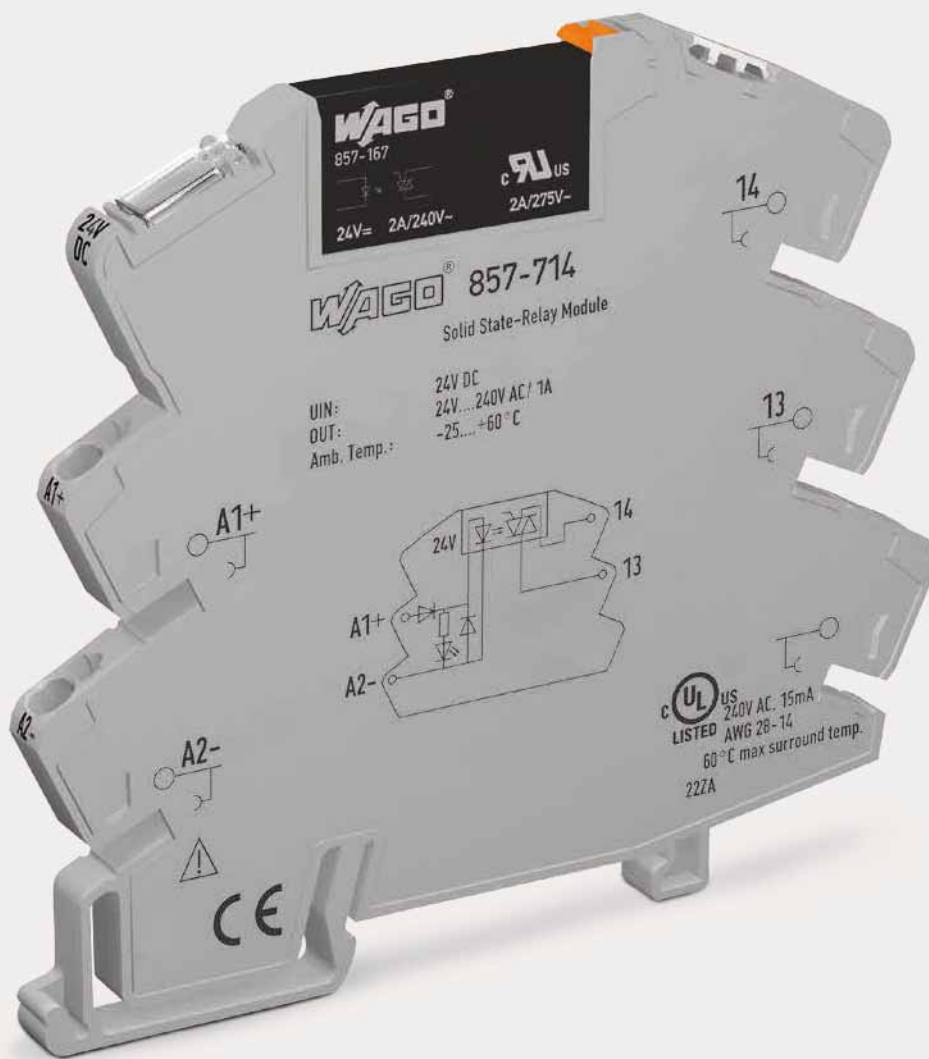


Description	Item No.	Pack. Unit
white	209-701	5
yellow	209-701/000-002	5
red	209-701/000-005	5
Blue	209-701/000-006	5
gray	209-701/000-007	5
orange	209-701/000-012	5
light green	209-701/000-017	5
green	209-701/000-023	5
violet	209-701/000-024	5

Marker strips for mounting carrier
(288 Series)







Marking	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1



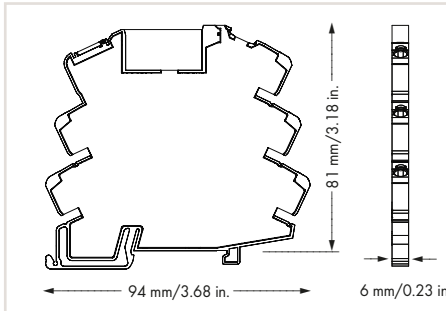
Solid-State Relay and Optocoupler Modules

Solid-State Relay and Optocoupler Modules

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Sockets with a Solid-State Relay

857 Series

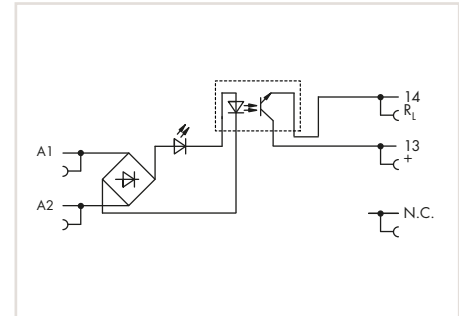
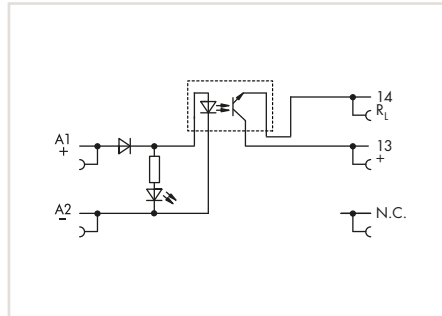


Technical Data

Load Circuit	
Output voltage range	0 ... 48 VDC
Max. continuous current	0.1 ADC
Max. voltage drop at output	< 1 VDC
Reverse voltage transistor/triac	60 V
Min. switching current	50 μ A
Turn-on time	< 100 μ s
Turn-off time	< 600 μ s
Max. switching frequency	1 kHz
General Specifications	
Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV _{rms}
Ambient operating temperature	-20 ... +60 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 81 x 94, height from upper-edge of DIN-rail
Connection technology	Push-in CAGE CLAMP®
Conductor range	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

Note:

Solid-state relays are designed for use in signal processing networks which are not fed by the low-voltage power supply network.



Solid-state relay,
output voltage range: 0 ... 48 VDC,
max. continuous current: 0.1 A,
2-wire connection,
yellow status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	9 mA	857-704	25

Solid-state relay,
output voltage range: 0 ... 48 VDC,
max. continuous current: 0.1 A,
2-wire connection,
yellow status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
115 VAC/DC	4.2 mA	857-707	25

Specific Technical Data

Control Circuit

Input voltage range (low level)

0 ... 10 VDC

0 ... 25 VAC/DC

Input voltage range (high signal)

16.8 ... 30 VDC

100 ... 138 VAC/DC

General Specifications

Standards/approvals

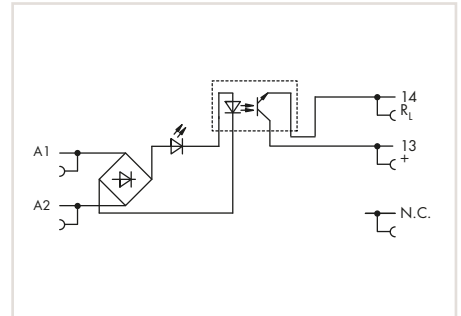
EN 61000-6-2; EN 61000-6-3; EN 61373;
EN 61010-2-201; UL 508

EN 61000-6-2; EN 61000-6-3; EN 61373;
EN 61010-2-201; UL 508

Sockets with a Solid-State Relay

857 Series

2



Solid-state relay,
output voltage range: 0 ... 48 VDC,
max. continuous current: 0.1 A,
2-wire connection,
yellow status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
230 VAC/DC	3.25 mA	857-708	25

Specific Technical Data

Control Circuit

Input voltage range (low level)

0 ... 30 VAC/DC

Input voltage range (high signal)

200 ... 253 VAC/DC

General Specifications

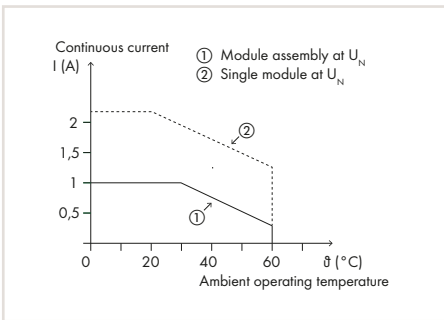
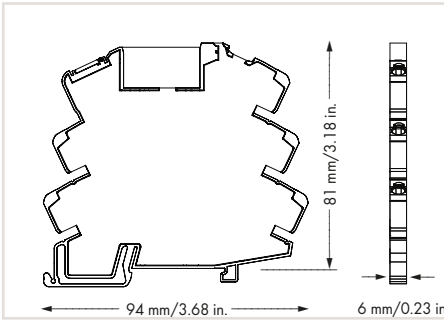
Standards/approvals

EN 61000-6-2; EN 61000-6-3; EN 61373;
EN 61010-2-201; UL 508

Sockets with a Solid-State Relay

857 Series

2



Current carrying capacity

Note:

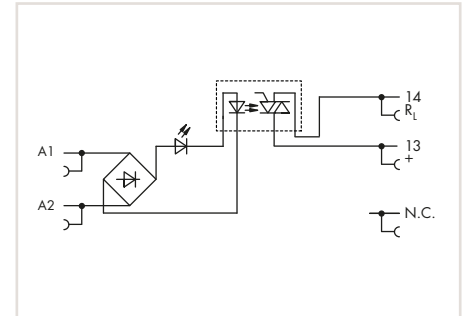
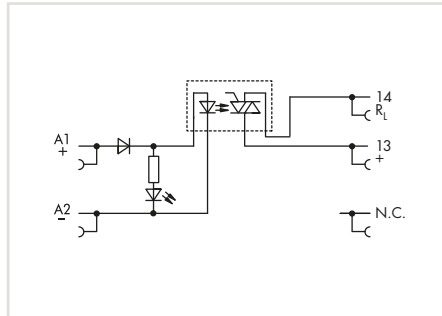
Solid-state relays are designed for use in signal processing networks which are not fed by the low-voltage power supply network.

Technical Data

Load Circuit	
Output voltage range	24 ... 240 VAC
Max. continuous current	2 AAC
Max. voltage drop at output	< 1.6 VAC
Reverse voltage transistor/triac	600 V
Leakage current	< 1.5 mA
Min. switching current	22 mA
Turn-on time	< 10 ms
Turn-off time	< 10 ms
Max. switching frequency	50 Hz / 60 Hz
General Specifications	
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV _{rms}
Ambient operating temperature	-20 ... +60 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 81 x 94, height from upper-edge of DIN-rail
Connection technology	Push-in CAGE CLAMP®
Conductor range	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch



Similar to picture



Solid-state relay,
output voltage range: 24 ... 240 VAC,
max. continuous current: 2 A,
2-wire connection, zero-voltage switching,
yellow status indicator, 6 mm wide

U _N	I _N	Item No.	Pack. Unit
24 VDC	9.2 mA	857-714	25

Solid-state relay,
output voltage range: 24 ... 240 VAC,
max. continuous current: 2 A,
2-wire connection, zero-voltage switching,
yellow status indicator, 6 mm wide

U _N	I _N	Item No.	Pack. Unit
115 VAC/DC	3.9 mA	857-717	25

Specific Technical Data

Control Circuit

Input voltage range (low level)

0 ... 10 VDC

0 ... 25 VAC/DC

Input voltage range (high signal)

20 ... 28.8 VDC

100 ... 138 VAC/DC

General Specifications

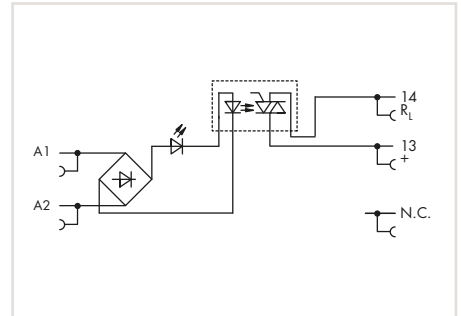
Standards/approvals

EN 61000-6-2; EN 61000-6-3; EN 61373;
EN 61010-2-201; UL 508

EN 61000-6-2; EN 61000-6-3; EN 61373;
EN 61010-2-201; UL 508

Sockets with a Solid-State Relay 857 Series

2



Solid-state relay,
output voltage range: 24 ... 240 VAC,
max. continuous current: 2 A,
2-wire connection, zero-voltage switching,
yellow status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
230 VAC/DC	3.2 mA	857-718	25

Specific Technical Data

Control Circuit

Input voltage range (low level)

0 ... 60 VAC/DC

Input voltage range (high signal)

200 ... 253 VAC/DC

General Specifications

Standards/approvals

EN 61000-6-2; EN 61000-6-3; EN 61373;
EN 61010-2-201; UL 508

Sockets with a Solid-State Relay

857 Series



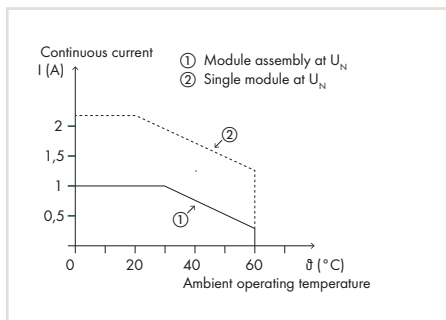
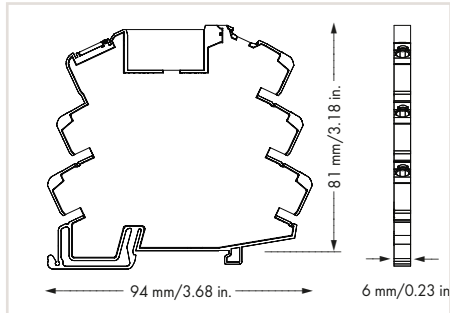
Technical Data

Load Circuit

Output voltage range	0 ... 24 VDC
Max. continuous current	3 ADC
Max. voltage drop at output	120 mV DC
Reverse voltage transistor/triac	33 V
Turn-on time	100 μ s
Turn-off time	600 μ s
Min. switching current	50 μ A
Max. switching frequency	350 Hz

General Specifications

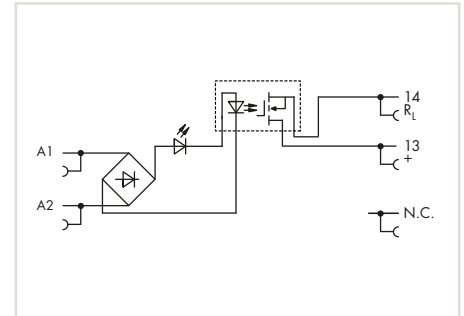
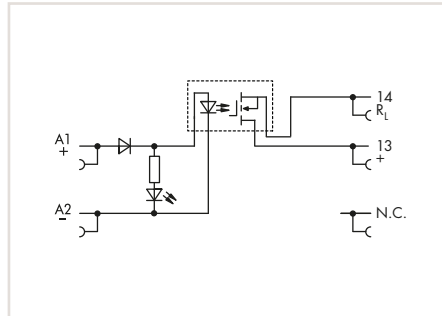
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV _{rms}
Ambient operating temperature	-20 ... +70 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 81 x 94, height from upper-edge of DIN-rail
Connection technology	Push-in CAGE CLAMP®
Conductor range	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch



Current carrying capacity

Note:

Solid-state relays are designed for use in signal processing networks which are not fed by the low-voltage power supply network.



Solid-state relay,
output voltage range: 0 ... 24 VDC,
max. continuous current: 3 A,
2-wire connection,
yellow status indicator, 6 mm wide

U _N	I _N	Item No.	Pack. Unit
24 VDC	9.2 mA	857-724	25

Solid-state relay,
output voltage range: 0 ... 24 VDC,
max. continuous current: 3 A,
2-wire connection,
yellow status indicator, 6 mm wide

U _N	I _N	Item No.	Pack. Unit
115 VAC/DC	3.9 mA	857-727	25

Specific Technical Data

Control Circuit

Input voltage range (low level)

0 ... 10 VDC

0 ... 25 VAC/DC

Input voltage range (high signal)

16.8 ... 31.2 VDC

90 ... 138 VAC/DC

General Specifications

Standards/approvals

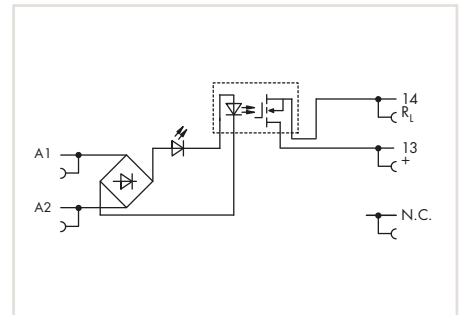
EN 61000-6-2; EN 61000-6-3; EN 61373;
EN 61010-2-201; UL 508

EN 61000-6-2; EN 61000-6-3; EN 61373;
EN 61010-2-201; UL 508

Sockets with a Solid-State Relay

857 Series

2



Solid-state relay,
output voltage range: 0 ... 24 VDC,
max. continuous current: 3 A,
2-wire connection,
yellow status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
230 VAC/DC	3.2 mA	857-728	25

Specific Technical Data

Control Circuit

Input voltage range (low level)

0 ... 60 VAC/DC

Input voltage range (high signal)

200 ... 253 VAC/DC

General Specifications

Standards/approvals

EN 61000-6-2; EN 61000-6-3; EN 61373;
EN 61010-2-201; UL 508

Optocoupler Modules

857 Series



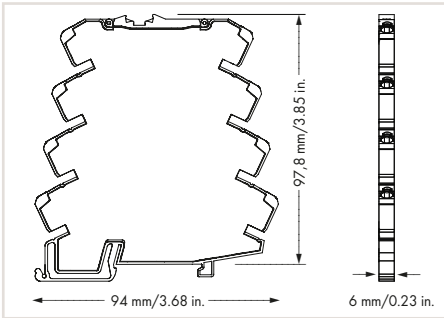
Technical Data

Control Circuit

Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high signal)	16.8 ... 31.2 VDC

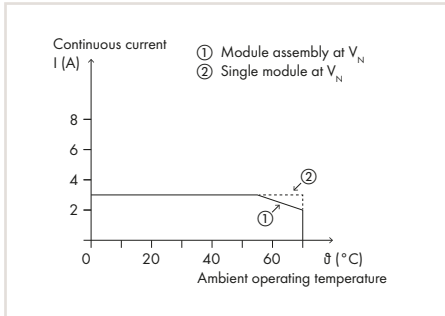
General Specifications

Ambient operating temperature	-25 ... +70 °C
Storage temperature	-40 ... +85 °C
Dimensions (mm) W x H x D	6 x 96 x 94, height from upper-edge of DIN-rail
Connection technology	Push-in CAGE CLAMP®
Conductor range	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

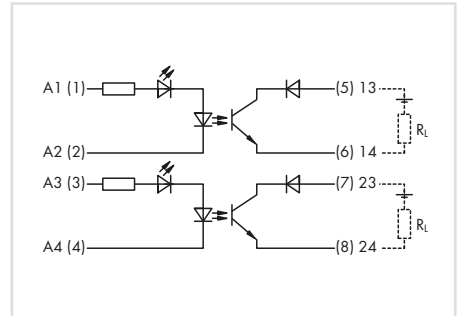
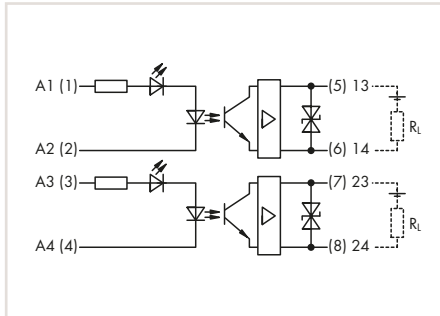


Note:

Solid-state relays are designed for use in signal processing networks which are not fed by the low-voltage power supply network.



Current carrying capacity



Optocoupler module, 2-channel,
output voltage range: 3 ... 31.2 VDC,
max. continuous current: 3 A,
2-wire connection,
yellow status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	7.75 mA	857-1430	25

Optocoupler module, 2-channel,
output voltage range: 9 ... 60 VDC,
max. continuous current: 0.1 A,
2-wire connection,
yellow status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	5.6 mA	857-1494	25

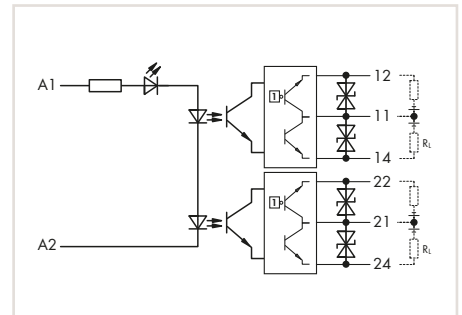
Specific Technical Data

Load Circuit	
Output voltage range	3 ... 31.2 VDC
Max. continuous current	3 ADC
Turn-on time	25 μ s
Turn-off time	250 μ s
Max. switching frequency	1.5 kHz
Max. voltage drop at output	0.2 V
Reverse voltage transistor/triac	55 V
General Specifications	
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV _{rms}
Dielectric strength channel/channel (AC, 1 min)	4 kV _{rms}
Standards/approvals	EN 61000-6-2; EN 61000-6-3; EN 61373; EN 61010-2-201; GL; UL 508 (max. 70 °C/2 A)

Optocoupler Modules

857 Series

2



Optocoupler module, 2-channel,
output voltage range: 9 ... 60 VDC,
max. continuous current: 0.5 A,
2 changeover contacts,
yellow status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	5.9 mA	857-1432	25

Specific Technical Data

Control Circuit

Input voltage range (low level)

0 ... 5 VDC

Input voltage range (high signal)

16.8 ... 30 VDC

Load Circuit

Output voltage range

9 ... 60 VDC

Max. continuous current

0.5 ADC

Turn-on time

25 μ s

Turn-off time

250 μ s

Max. switching frequency

1.5 kHz

Max. voltage drop at output

1.5 V

Reverse voltage transistor/triac

100 V

General Specifications

Dielectric strength, control/load circuit (AC, 1 min)

3.75 kV_{rms}

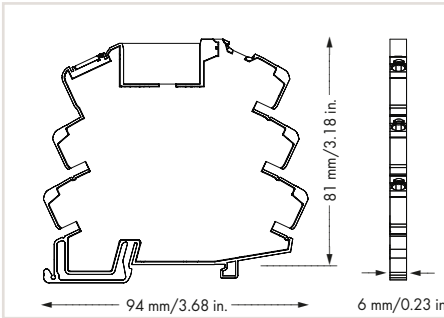
Dielectric strength channel/channel (AC, 1 min)

-

Standards/approvals

EN 61000-6-2; EN 61000-6-3; EN 61373;
EN 61010-2-2001; UL 508 (max. 70 °C / 0.3 A)

Multifunction Timer Relays with a Solid-State Relay 857 Series



Technical Data

Control Circuit

Input voltage range

$U_N - 15\% \dots +30\%$

Current consumption at U_N

9.15 mA (active) / 2.5 mA (passive)

General Specifications

Time range

adjustable:

0.1 ... 10 s; 3 ... 300 s; 0.3 ... 30 min; 3 ... 300 min

Reset time

50 ms

Repeat accuracy

$\pm 1\%$

Dielectric strength, control/load circuit (AC, 1 min)

2.5 kV_{rms}

Ambient operating temperature

-20 ... +60 °C

Storage temperature

-40 ... +70 °C

Dimensions (mm) W x H x D

6 x 81 x 94, height from upper-edge of DIN-rail

Connection technology

Push-in CAGE CLAMP®

Conductor range

0.34 ... 2.5 mm² / 22 ... 14 AWG

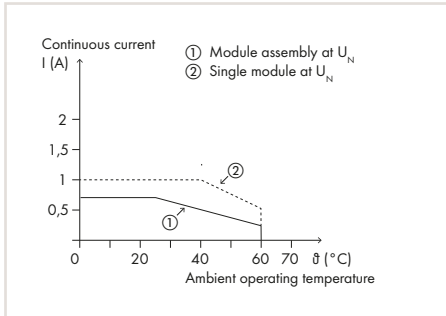
Strip length

9 ... 10 mm / 0.35 ... 0.39 inch

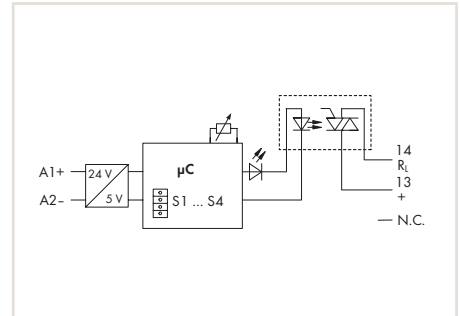
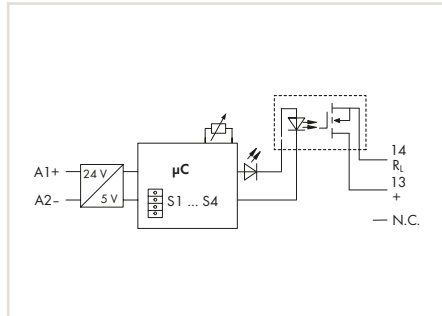
Function and time range adjustable via DIP switch

Note:

Solid-state relays are designed for use in signal processing networks which are not fed by the low-voltage power supply network.



Current carrying capacity



Solid-state timer relay module, output voltage range: 0 ... 24 VDC, max. continuous current: 2 A, 2-wire connection, multifunction/multitime range, yellow status indicator, 6 mm wide

U _N	I _N	Item No.	Pack. Unit
24 VDC	9.15 mA	857-624	25

Solid-state timer relay module, output voltage range: 24 ... 230 VAC, max. continuous current: 1 A, 2-wire connection, multifunction/multitime range, yellow status indicator, 6 mm wide

U _N	I _N	Item No.	Pack. Unit
24 VDC	9.15 mA	857-634	25

Specific Technical Data

Load Circuit	
Output voltage range	0 ... 24 VDC
Reverse voltage transistor/triac	33 V
Max. continuous current	2 ADC
Turn-on time	100 µs
Turn-off time	2 ms
Max. voltage drop input	< DC 120 mV
General Specifications	
Functions	<ul style="list-style-type: none"> • On-delay • Single-shot • On-delay and single-shot leading edge (1 s, fixed) • Blinking
Standards/approvals	EN 61812-1; EN 61373; EN 50121-3-2

Output voltage range	24 ... 230 VAC
Reverse voltage transistor/triac	600 V
Max. continuous current	1 ADC
Turn-on time	1 ms
Turn-off time	10 ms
Max. voltage drop input	< 1 VAC
Functions	<ul style="list-style-type: none"> • On-delay • Single-shot • On-delay and single-shot leading edge (1 s, fixed) • Blinking
Standards/approvals	EN 61812-1; EN 61373; EN 50121-3-2

Output voltage range	24 ... 230 VAC
Reverse voltage transistor/triac	600 V
Max. continuous current	1 ADC
Turn-on time	1 ms
Turn-off time	10 ms
Max. voltage drop input	< 1 VAC
Functions	<ul style="list-style-type: none"> • On-delay • Single-shot • On-delay and single-shot leading edge (1 s, fixed) • Blinking
Standards/approvals	EN 61812-1; EN 61373; EN 50121-3-2

Accessories

857 Series

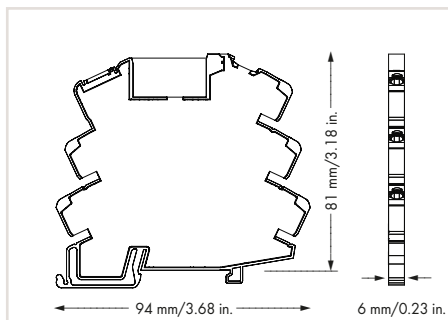


Technical Data

Max. continuous current	6 A
Status indication	LED yellow
Ambient operating temperature	-40 ... +70 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 81 x 94, height from upper-edge of DIN-rail
Connection technology	Push-in CAGE CLAMP®
Conductor range	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Standards/approvals	UR 508; EN61010-2-201

Socket, for miniature switching relays and optocouplers

	Item No.	Pack. Unit
24 VAC/DC	857-104	25
110 VAC/DC	857-107	25
230 VAC/DC	857-108	25



Accessories

857 Series



Basic solid-state relay,
output voltage range: 0 ... 24 VDC,
max. continuous current: 3 A,
5 mm wide, 15 mm high

U_N	I_N	Item No.	Pack. Unit
24 V	7 mA	857-161	20

Basic solid-state relay,
output voltage range: 0 ... 48 VDC,
max. continuous current: 0.1 A,
5 mm wide, 15 mm high

U_N	I_N	Item No.	Pack. Unit
24 V	7 mA	857-164	20

Technical Data

Control Circuit		Load Circuit	
Input voltage range	18 ... 30 VDC	Switching voltage	0 ... 24 VDC
Load Circuit		Reverse voltage transistor/triac	33 V
Max. continuous current	3 ADC	Max. voltage drop input	< 120 mV DC
General Specifications		Dielectric strength, control/load circuit	2.5 kV
Ambient operating temperature	-30 ... +80 °C	Ambient operating temperature	-30 ... +80 °C
Storage temperature	-40 ... +100 °C	Storage temperature	-40 ... +100 °C
Dimensions (mm) W x H x D	5 x 15 x 28	Dimensions (mm) W x H x D	5 x 15 x 28

Accessories

857 Series

2



Basic solid-state relay,
output voltage range: 24 ... 240 VDC,
max. continuous current: 2 A,
5 mm wide, 15 mm high

U_N	I_N	Item No.	Pack. Unit
24 V	7 mA	857-167	20



Basic solid-state relay,
output voltage range: 0 ... 24 VDC,
max. continuous current: 3 A,
5 mm wide, 15 mm high

U_N	I_N	Item No.	Pack. Unit
60 V	3 mA	857-162	20

Specific Technical Data

	857-161	857-162
Control Circuit		
Input voltage range	18 ... 30 VDC	35 ... 72 VDC
Load Circuit		
Switching voltage	24 ... 240 VAC	0 ... 24 VDC
Reverse voltage transistor/triac	600 V	33 V
Max. continuous current	2 AAC	3 ADC
Max. voltage drop input	< 1 VAC	< 120 mV DC
General Specifications		
Dielectric strength, control/load circuit	2.5 kV	2.5 kV
Ambient operating temperature	-30 ... +80 °C	-30 ... +80 °C
Storage temperature	-40 ... +100 °C	-40 ... +100 °C
Dimensions (mm) W x H x D	5 x 15 x 28	5 x 15 x 28



Basic solid-state relay,
output voltage range: 0 ... 48 VDC,
max. continuous current: 0.1 A,
5 mm wide, 15 mm high

U_N	I_N	Item No.	Pack. Unit
60 V	2.8 mA	857-165	20



Basic solid-state relay,
output voltage range: 24 ... 240 VDC,
max. continuous current: 2 A,
5 mm wide, 15 mm high

U_N	I_N	Item No.	Pack. Unit
60 V	3.1 mA	857-168	20

Specific Technical Data

Control Circuit		
Input voltage range	52 ... 72 VDC	35 ... 72 VDC
Load Circuit		
Switching voltage	0 ... 48 VDC	24 ... 240 VAC
Reverse voltage transistor/triac	54 V	600 V
Max. continuous current	0.1 ADC	2 AAC
Max. voltage drop input	< 1 VDC	< 1 VAC
General Specifications		
Dielectric strength, control/load circuit	2.5 kV	2.5 kV
Ambient operating temperature	-20 ... +60 °C	-30 ... +80 °C
Storage temperature	-40 ... +70 °C	-40 ... +100 °C
Dimensions (mm) W x H x D	5 x 15 x 28	5 x 15 x 28

Accessories

857 Series

Push-in type jumper bars, light gray, insulated 18 A



Description	Item No.	Pack. Unit
2-way	859-402	200 (8x25)
3-way	859-403	200 (8x25)
4-way	859-404	200 (8x25)
5-way	859-405	200 (8x25)
6-way	859-406	100 (4x25)
7-way	859-407	100 (4x25)
8-way	859-408	100 (4x25)
9-way	859-409	100 (4x25)
10-way	859-410	100 (4x25)
Item no. suffixes for colored push-in type jumper bars	yellow	.../000-029
	red	.../000-005
	blue	.../000-006

Comb-style jumper bar, insulated, for conductor entry



Description	Item No.	Pack. Unit
2-way	281-482	100

WMB Multi marking system, 10 strips with 10 markers, white, with black printing



Description	Item No.	Pack. Unit	
plain	793-501	5 cards	
Marking	1 ... 10 (10 x)	793-502	5 cards
	11 ... 20 (10 x)	793-503	5 cards
	21 ... 30 (10 x)	793-504	5 cards
	31 ... 40 (10 x)	793-505	5 cards
	41 ... 50 (10 x)	793-506	5 cards
	1 ... 50 (2 x)	793-566	5 cards

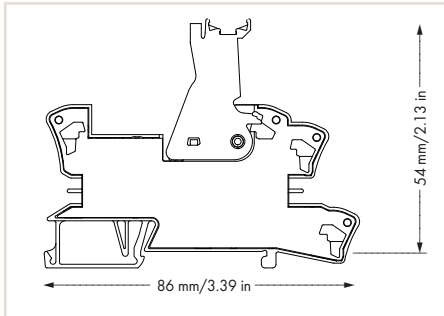
Operating tool, with partially insulated shaft



Description	Item No.	Pack. Unit
Type 2, (3.5 x 0.5) mm blade	210-720	1

Sockets with a Solid-State Relay

788 Series



Technical Data

Load Circuit

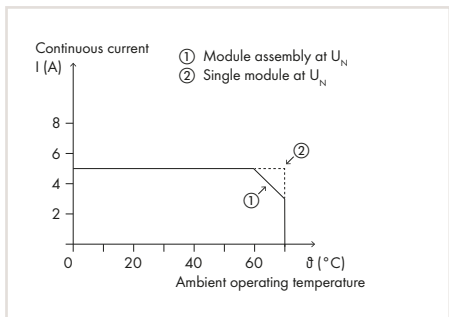
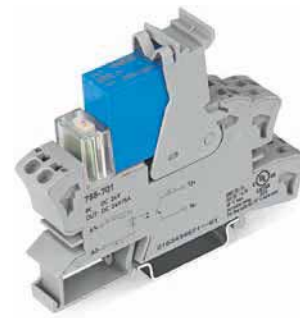
Turn-on time	50 μ s
Turn-off time	600 μ s
Switching frequency	100 Hz

General Specifications

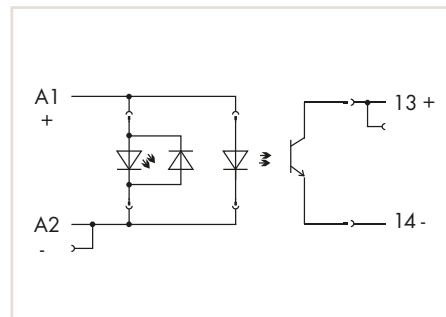
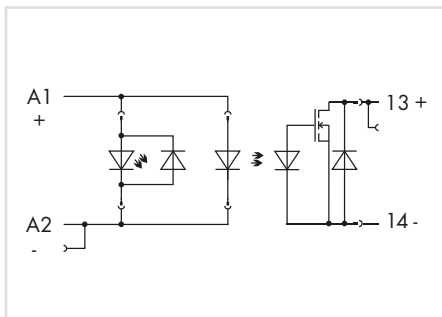
Nominal voltage	250 V
Rated surge voltage	2.5 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV _{rms}
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	15 x 53 x 86, height from upper-edge of DIN-rail
Connection technology	Push-in CAGE CLAMP®
Conductor range	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

Note:

Solid-state relays are designed for use in signal processing networks which are not fed by the low-voltage power supply network.



Current carrying capacity curve, for 788-701



Solid-state relay,
output voltage range: 0 ... 24 VDC,
max. continuous current: 3.5 A,
2-wire connection,
red status indicator, 15 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	7 mA	788-700	20

Solid-state relay,
output voltage range: 0 ... 30 VDC,
max. continuous current: 5 A,
2-wire connection,
red status indicator, 15 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	9.3 mA	788-701	10

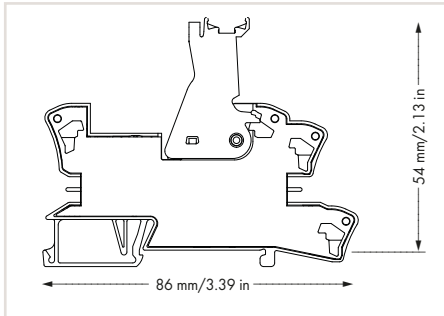
Specific Technical Data

Control Circuit	
Input voltage range (low level)	0 ... 8 VDC
Input voltage range (high signal)	18 ... 30 VDC
Load Circuit	
Output voltage range	0 ... 24 VDC
Max. continuous current	3.5 ADC
Max. switching frequency	
Max. voltage drop at output	0.1 VDC
Reverse voltage transistor/triac	33 V
Ambient operating temperature	-20 ... +60 °C
General Specifications	
Standards/approvals	EN 61000-6-2; EN 61000-6-3; EN 61373; EN 61010-2-201; UL 508

Input voltage range (low level)	0 ... 2.5 VDC
Input voltage range (high signal)	15 ... 30 VDC
Output voltage range	0 ... 30 VDC
Max. continuous current	5 ADC
Max. switching frequency	100 Hz
Max. voltage drop at output	0.3 VDC
Reverse voltage transistor/triac	36 V
Ambient operating temperature	-40 ... +70 °C
Standards/approvals	EN 61000-6-2; EN 61000-6-3; EN 61373; EN 61010-2-201; UL 508 (max. 40 °C/4.7 A)

Sockets with a Solid-State Relay

788 Series

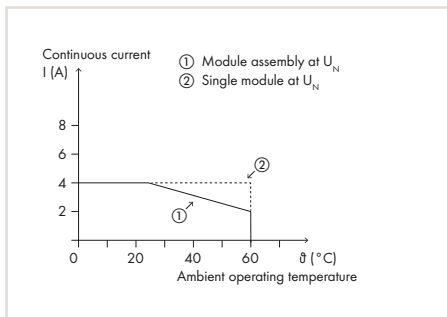
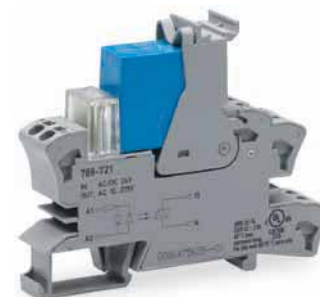


Technical Data

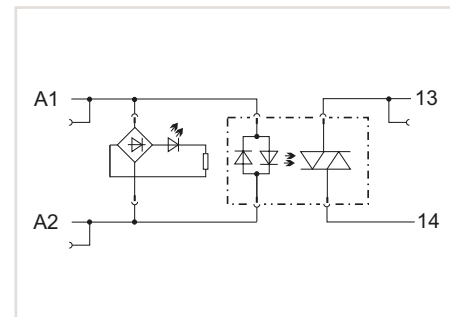
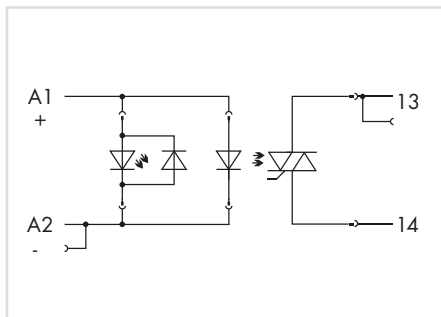
Load Circuit	
Turn-on time	10 ms
Turn-off time	10 ms
Max. voltage drop at output	< 1.1 VAC
Reverse voltage transistor/triac	600 V
Switching frequency	50 / 60 Hz
General Specifications	
Nominal voltage	250 V
Rated surge voltage	2.5 kV
Pollution degree	2
Ambient operating temperature	-20 ... +60 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	15 x 53 x 86, height from upper-edge of DIN-rail
Connection technology	Push-in CAGE CLAMP®
Conductor range	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

Note:

Solid-state relays are designed for use in signal processing networks which are not fed by the low-voltage power supply network.



Current carrying capacity curve, for 788-721



Solid-state relay,
output voltage range: 24 ... 240 VAC,
max. continuous current: 1 A,
2-wire connection, zero-voltage switching,
red status indicator, 15 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	7 mA	788-720	20

Solid-state relay,
output voltage range: 12 ... 275 VAC,
max. continuous current: 4 A,
2-wire connection, zero-voltage switching,
red status indicator, 15 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VAC/DC	10 mA	788-721	10

Specific Technical Data

Control Circuit	
Input voltage range (low level)	0 V...4 VDC
Input voltage range (high signal)	18 ... 30 VDC
Load Circuit	
Output voltage range	24 ... 240 VAC
Max. continuous current	1 AAC
General Specifications	
Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV _{rms}
Standards/approvals	EN 61000-6-2; EN 61000-6-3; EN 61373; EN 61010-2-201; UL 508 (max. 60 °C/1 A)

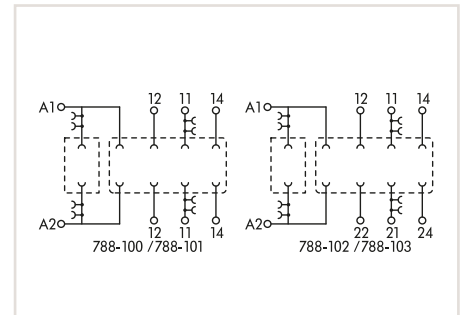
Input voltage range (low level)	0 ...2.5 VAC/DC
Input voltage range (high signal)	15 ... 30 VAC/DC
Output voltage range	12 ... 275 VAC
Max. continuous current	4 AAC
Dielectric strength, control/load circuit (AC, 1 min)	4 kV _{rms}
Standards/approvals	EN 61000-6-2; EN 61000-6-3; EN 61373; EN 61010-2-201; UL 508 (max. 40 °C/2.5 A)

Input voltage range (low level)	0 ...2.5 VAC/DC
Input voltage range (high signal)	15 ... 30 VAC/DC
Output voltage range	12 ... 275 VAC
Max. continuous current	4 AAC
Dielectric strength, control/load circuit (AC, 1 min)	4 kV _{rms}
Standards/approvals	EN 61000-6-2; EN 61000-6-3; EN 61373; EN 61010-2-201; UL 508 (max. 40 °C/2.5 A)

Accessories

788 Series

2



Socket for miniature switching relay,
1 changeover contact/2 changeover contacts,
for DIN 35 rail

Description	Item No.	Pack. Unit
1 changeover contact (relay height: 15 mm)	788-100	20
2 changeover contacts (relay height: 15 mm)	788-102	20
1 changeover contact (relay height: 25 mm)	788-101	10
2 changeover contacts (relay height: 25 mm)	788-103	10

Specific Technical Data

Contacts

Max. continuous current	16 A / 2 x 8 A
Max. switching voltage	250 VAC
Max. switching power (resistive)	4 kVA / 2 x 2 kVAAC

General Specifications

Nominal input voltage (U_N)	Depending on relay, max. 250 VAC
Nominal voltage	250 V
Rated surge voltage	4 kV
Pollution degree	3
Dielectric strength, contact-coil (AC, 1 min)	6 kV _{rms} (depending on relay)
Dielectric strength, open contact (AC, 1 min)	1 kV _{rms} (depending on relay)
Dielectric strength, contact-contact (AC, 1 min)	3.5 kV _{rms} (depending on relay)
Storage temperature	-40 ... +80 °C
Ambient operating temperature	-40 ... +70 °C (depending on relay)
Connection technology	Push-in CAGE CLAMP®
Conductor range	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch.
Standards/approvals	EN 60664-1

Accessories

788 Series

Operation status indicator



Description	Current Consumption at U_N	Item No.	Pack. Unit
Operation status indicator, with recovery diode, 24 VDC (12 ... 24 V)	2.4 mA	788-120	50 (2x25)
Operation status indicator, with recovery diode, 48 VDC (48 ... 60 V)	1.9 mA	788-121	50 (2x25)
Operation status indicator, 110 VDC	1.9 mA	788-122	50 (2x25)
Operation status indicator, 24 VAC	2.1 mA	788-123	50 (2x25)
Operation status indicator, 115 VAC	1.7 mA	788-124	50 (2x25)
Operation status indicator, 230 VAC	1.6 mA	788-125	50 (2x25)

Push-in type jumper bar, I_{max} 18 A



Description	Item No.	Pack. Unit
2-way (module/module)	788-113	200 (8x25)
3-way	788-114	100 (4x25)
4-way	788-115	100 (4x25)
6-way	788-116	100 (4x25)
8-way	788-117	100 (4x25)

Push-in type jumper bars, light gray, insulated 18 A

Description	Item No.	Pack. Unit
2-way (internal)	859-402	200 (8x25)

WMB Multi marking system, 10 strips with 10 markers, white, with black printing



Description	Item No.	Pack. Unit	
plain	793-501	5 cards	
Marking	1 ... 10 (10 x)	793-502	5 cards
	11 ... 20 (10 x)	793-503	5 cards
	21 ... 30 (10 x)	793-504	5 cards
	31 ... 40 (10 x)	793-505	5 cards
	41 ... 50 (10 x)	793-506	5 cards
	1 ... 50 (2 x)	793-566	5 cards

Group marker carriers



Item No.	Pack. Unit
209-145	100 (50)

Operating tool, with partially insulated shaft



Description	Item No.	Pack. Unit
Type 2, (3.5 x 0.5) mm blade	210-720	1

Twin ferrule, red, insulated, 12 mm long



Sleeve for mm ² / AWG	Item No.	Pack. Unit
2 x 1 mm ² / 2 x 18	216-542	500

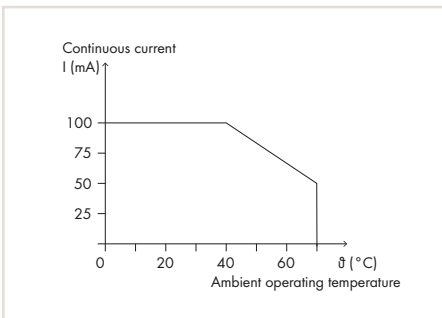
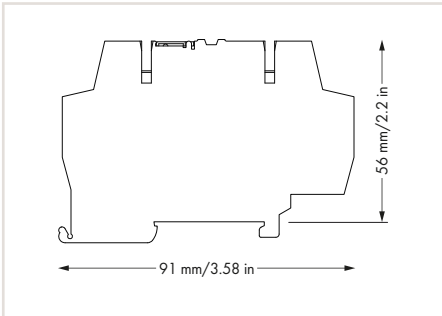
Rail-Mount Terminal Blocks with an Optocoupler 859 Series

2

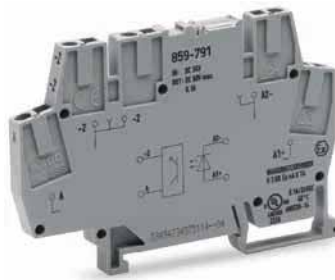


Technical Data

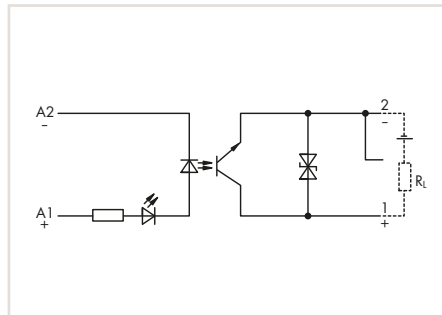
Ambient operating temperature	-40 ... +70 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 56 x 91, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch



Current carrying capacity

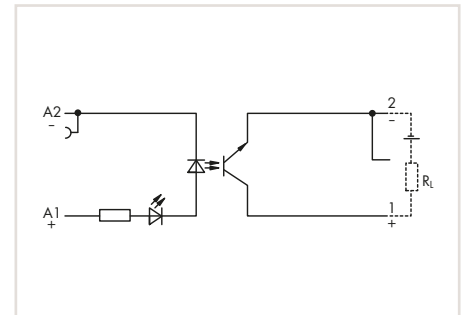


2



Optocoupler module,
output voltage range: 7 ... 60 VDC,
max. continuous current: 0.1 A,
2-wire connection, railway applications,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	4 mA	859-791	5



Optocoupler module,
output voltage range: 9 ... 60 VDC,
max. continuous current: 0.1 A,
2-wire connection, railway applications,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	4.2 mA	859-794	5

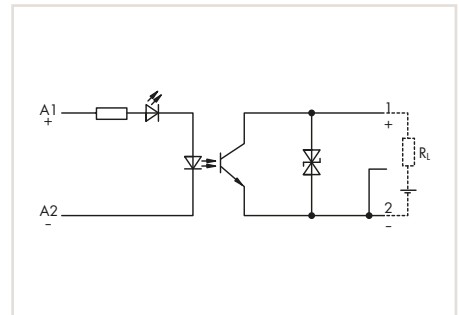
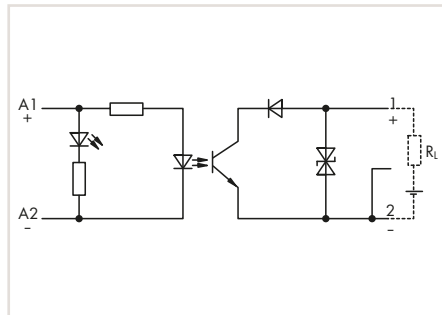
Specific Technical Data

Control Circuit	
Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high signal)	16 ... 30 VDC
Load Circuit	
Max. continuous current	100 mA
Output voltage range	7... 60 VDC
Turn-on time	20 μ s
Turn-off time	120 μ s
Max. switching frequency	3 kHz
Max. voltage drop at output	1.5 V
Reverse voltage transistor/triac	100 V
General Specifications	
Dielectric strength, control/load circuit (AC, 1 min)	4 kV _{rms}
Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 50121-3-2; EN 61373; UL 508

0 ... 5 VDC
16 ... 30 VDC
100 mA
9 ... 60 VDC
20 μ s
120 μ s
1.5 kHz
2 V
100 V
2.5 kV _{rms}
EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 50121-3-2; EN 61373; UL 508

Rail-Mount Terminal Blocks with an Optocoupler 859 Series

2



Optocoupler module,
output voltage range: 3 ... 30 VDC,
max. continuous current: 0.1 A,
2-wire connection, railway applications,
frequency: 10 kHz,
red status indicator, 6 mm wide

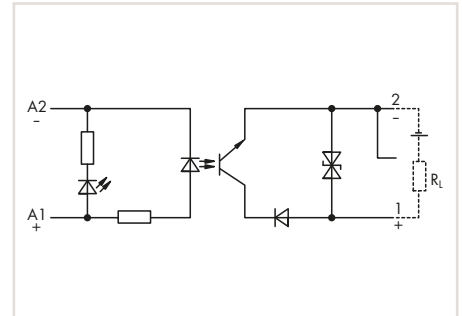
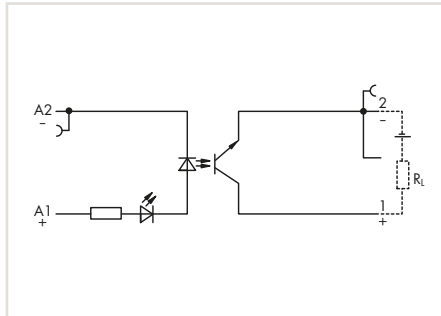
Optocoupler module,
output voltage range: 3 ... 30 VDC,
max. continuous current: 0.1 A,
2-wire connection, railway applications,
frequency: 10 kHz,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
5 VDC	17 mA	859-795	5

U_N	I_N	Item No.	Pack. Unit
24 VDC	9.2 mA	859-796	5

Specific Technical Data

Control Circuit	
Input voltage range (low level)	0 ... 0.8 VDC
Input voltage range (high signal)	2 ... 6.25 VDC
Load Circuit	
Output voltage range	3 ... 30 VDC
Max. continuous current	100 mA
Turn-on time	10 μ s
Turn-off time	50 μ s
Max. switching frequency	10 kHz
Max. voltage drop at output	1 V
Reverse voltage transistor/triac	65 V
General Specifications	
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV _{rms}
Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 50121-3-2; EN 61373; UL 508



Optocoupler module, output voltage range: 9 ... 60 VDC, max. continuous current: 0.1 A, 2-wire connection, railway applications, red status indicator, 6 mm wide

Optocoupler module, output voltage range: 3 ... 60 VDC, max. continuous current: 0.1 A, 2-wire connection, railway applications, red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
12 VDC	4 mA	859-798	5

U_N	I_N	Item No.	Pack. Unit
5 VDC	7.5 mA	859-793	5

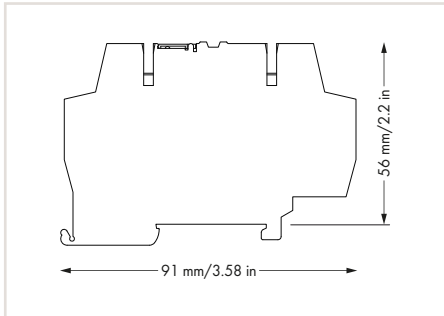
Specific Technical Data

Control Circuit	
Input voltage range (low level)	0.4 ... 4.8 VDC
Input voltage range (high signal)	DC8.4 ... 15 VDC
Load Circuit	
Output voltage range	9 ... 60 VDC
Max. continuous current	100 mA
Turn-on time	20 μ s
Turn-off time	120 μ s
Max. switching frequency	1.5 kHz
Max. voltage drop at output	2 V
Reverse voltage transistor/triac	100 V
General Specifications	
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV _{rms}
Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 50121-3-2; EN 61373

Input voltage range (low level)	0 ... 0.8 VDC
Input voltage range (high signal)	2 V... 6.25 VDC
Output voltage range	3 ... 60 VDC
Max. continuous current	100 mA
Turn-on time	20 μ s
Turn-off time	120 μ s
Max. switching frequency	1.5 kHz
Max. voltage drop at output	2.5 V
Reverse voltage transistor/triac	100 V
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV _{rms}
Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 50121-3-2; EN 61373; UL 508

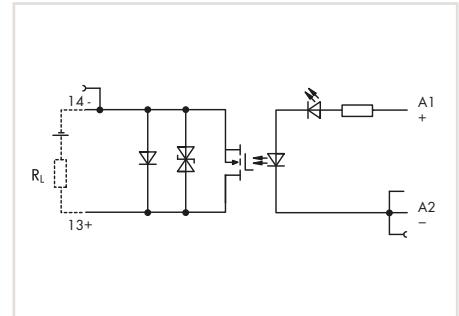
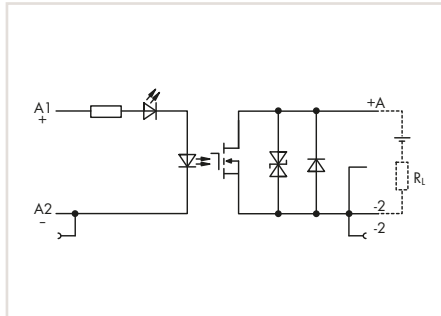
Input voltage range (low level)	0 ... 0.8 VDC
Input voltage range (high signal)	2 V... 6.25 VDC
Output voltage range	3 ... 60 VDC
Max. continuous current	100 mA
Turn-on time	20 μ s
Turn-off time	120 μ s
Max. switching frequency	1.5 kHz
Max. voltage drop at output	2.5 V
Reverse voltage transistor/triac	100 V
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV _{rms}
Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 50121-3-2; EN 61373; UL 508

Rail-Mount Terminal Blocks with an Optocoupler 859 Series



Technical Data

Load Circuit	
Output voltage range	3 ... 30 VDC
Max. continuous current	3 A
Peak output current	25 A
Turn-on time	25 μ s
Turn-off time	450 μ s
Max. switching frequency	350 Hz
Max. voltage drop at output	0.2 V
Reverse voltage transistor/triac	55 V
General Specifications	
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV _{rms}
Ambient operating temperature	-25 ... +55 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 56 x 91, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch



Optocoupler module,
output voltage range: 3 ... 30 VDC,
max. continuous current: 3 A,
2-wire connection,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	14 mA	859-730	5

Optocoupler module,
output voltage range: 3 ... 30 VDC,
max. continuous current: 3 A,
2-wire connection,
yellow status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	7 mA	859-740	5

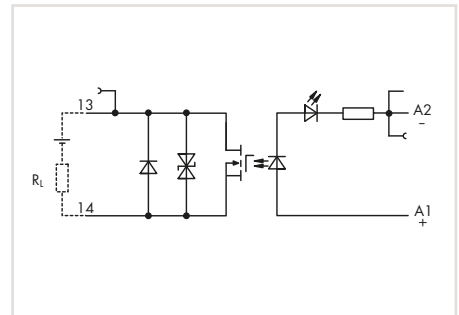
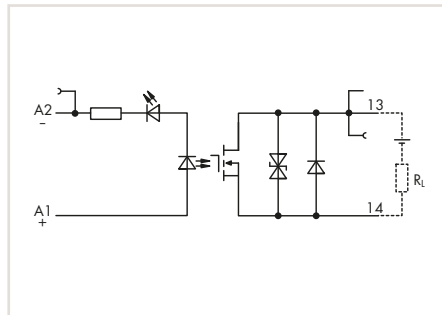
Specific Technical Data

Control Circuit	
Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high signal)	15 ... 27 VDC
General Specifications	
Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508

Input voltage range (low level)	0 ... 9 VDC
Input voltage range (high signal)	19 ... 27 VDC
General Specifications	
Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508

Rail-Mount Terminal Blocks with an Optocoupler 859 Series

2



Optocoupler module,
output voltage range: 3 ... 30 VDC,
max. continuous current: 3 A,
2-wire connection,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	14 mA	859-761	5

Optocoupler module,
output voltage range: 3 ... 30 VDC,
max. continuous current: 3 A,
2-wire connection,
yellow status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	7 mA	859-762	5

Specific Technical Data

Control Circuit

Input voltage range (low level)

0 ... 5 VDC

Input voltage range (high signal)

15 ... 27 VDC

0 ... 9 VDC

19 ... 27 VDC

General Specifications

Standards/approvals

EN 60664-1; EN 61000-6-2; EN 61000-6-3;
EN 61373

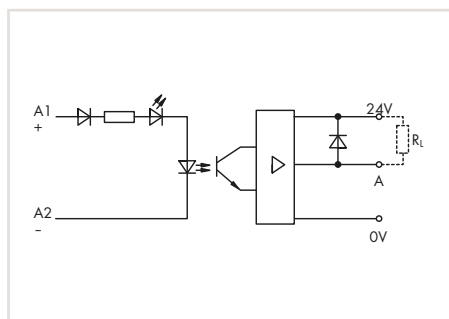
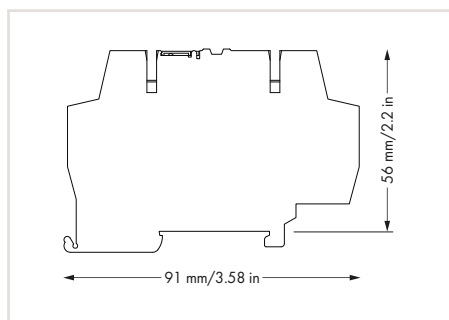
EN 60664-1; EN 61000-6-2; EN 61000-6-3;
EN 61373

Rail-Mount Terminal Blocks with an Optocoupler 859 Series



Optocoupler module,
output voltage range: 10 ... 30 VDC,
max. continuous current: 3 A,
3-wire connection, low-side switching,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	4 mA	859-720	5



Technical Data

Control Circuit

Input voltage range (low level)	0 ... 3 VDC
Input voltage range (high signal)	16 ... 30 VDC

Load Circuit

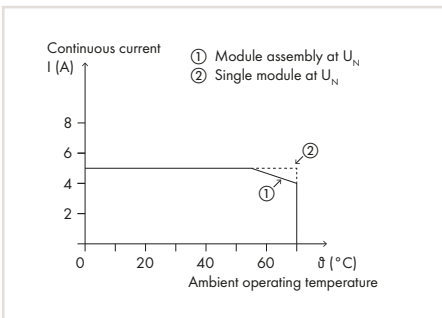
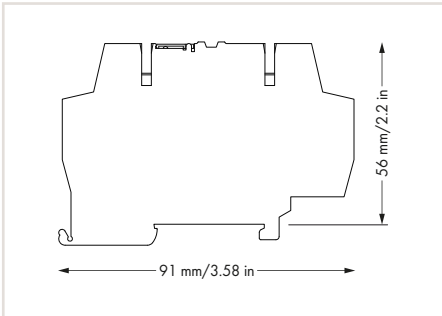
Output voltage range	10 ... 30 VDC
Max. continuous current	3 A
Peak output current	20 A
Turn-on time	25 μ s
Turn-off time	75 μ s
Max. switching frequency	1 kHz / < 2 A, 2 kHz / < 1 A, 3 kHz / < 0.5 A
Max. voltage drop at output	0.5 V
Reverse voltage transistor/triac	55 V

General Specifications

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV _{rms}
Ambient operating temperature	-25 ... +40 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 56 x 91, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508

Rail-Mount Terminal Blocks with an Optocoupler 859 Series

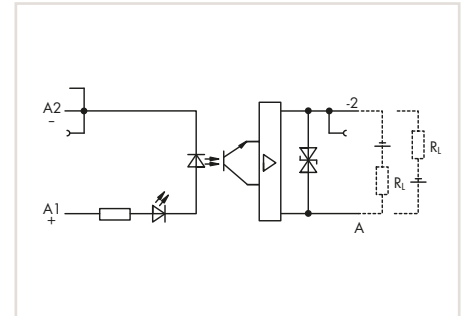
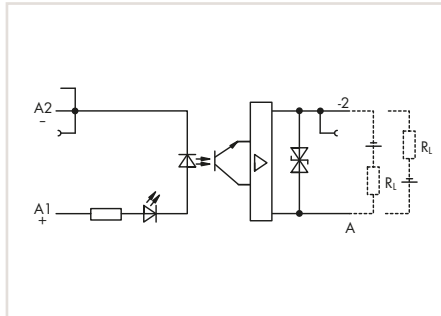
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Current carrying capacity

Technical Data

Load Circuit	
Output voltage range	3 ... 30 VDC
Max. continuous current	5 A
Peak output current	25 A
Turn-on time	200 μ s
Turn-off time	450 μ s
Max. switching frequency	100 Hz
Max. voltage drop at output	0.2 V
Reverse voltage transistor/triac	55 V
General Specifications	
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV _{rms}
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 56 x 91, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch



Optocoupler module, output voltage range: 3 ... 30 VDC, max. continuous current: 5 A, 2-wire connection, red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	3.5 mA	859-737	5

U_N	I_N	Item No.	Pack. Unit
5 VDC	7.2 mA	859-738	5

Specific Technical Data

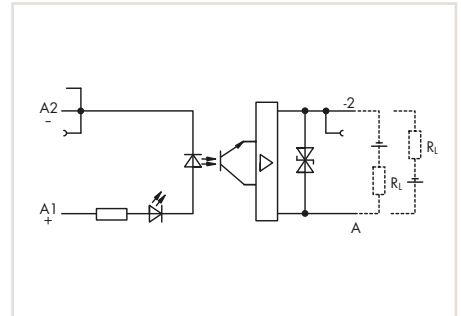
Control Circuit	
Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high signal)	15 ... 30 VDC
General Specifications	
Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373

Input voltage range (low level)	0 ... 2 VDC
Input voltage range (high signal)	4 ... 6 VDC
Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373

Input voltage range (low level)	0 ... 2 VDC
Input voltage range (high signal)	4 ... 6 VDC
Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373

Rail-Mount Terminal Blocks with an Optocoupler 859 Series

2



Optocoupler module,
output voltage range: 3 ... 30 VDC,
max. continuous current: 5 A,
2-wire connection,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
12 VDC	3.2 mA	859-739	5

Specific Technical Data

Control Circuit

Input voltage range (low level)

0 ... 5 VDC

Input voltage range (high signal)

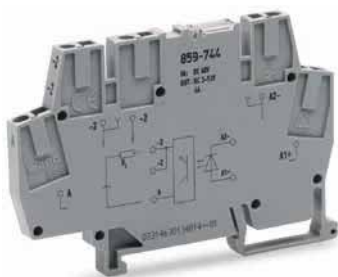
9.6 ... 14.4 VDC

General Specifications

Standards/approvals

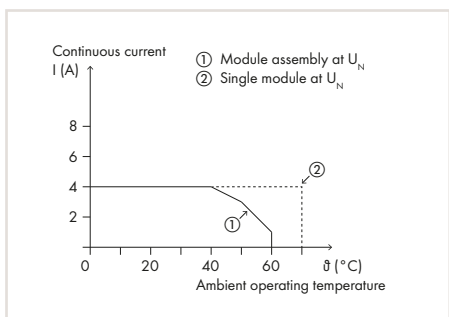
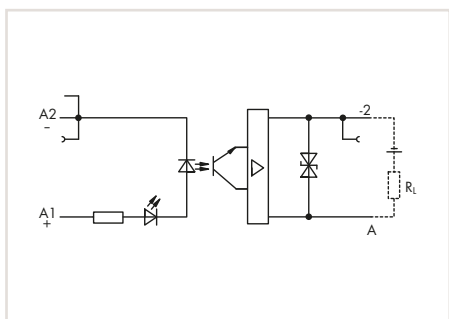
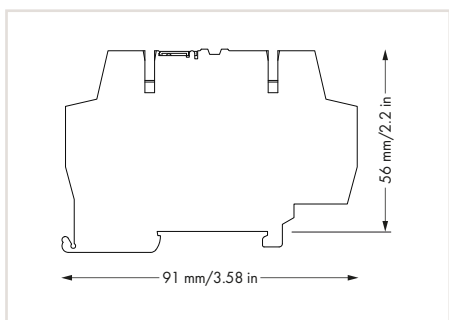
EN 60664-1; EN 61000-6-2; EN 61000-6-3;
EN 61373

Rail-Mount Terminal Blocks with an Optocoupler 859 Series



Optocoupler module,
output voltage range: 10 ... 53 VDC,
max. continuous current: 4 A
2-wire connection,
red status indicator, 6 mm wide

U_N	Item No.	Pack. Unit
12 ... 48 VDC	859-744	5

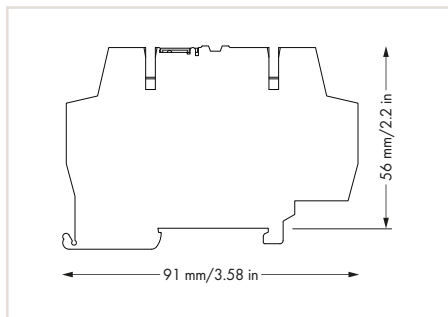


Current carrying capacity

Technical Data

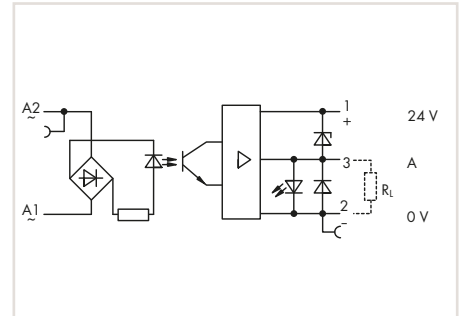
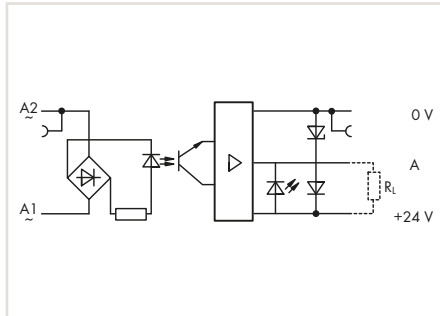
Control Circuit	
Input voltage range (low level)	0 ... 4 VDC
Input voltage range (high signal)	10 ... 53 VDC
Load Circuit	
Output voltage range	3 ... 53 VDC
Max. continuous current	4 A
Peak output current	30 A
Turn-on time	200 μ s
Turn-off time	450 μ s
Max. switching frequency	100 Hz
Max. voltage drop at output	0.2 V
Reverse voltage transistor/triac	80 V
General Specifications	
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV _{rms}
Ambient operating temperature	-40 ... +70 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 56 x 91, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373

Rail-Mount Terminal Blocks with an Optocoupler 859 Series



Technical Data

Load Circuit	
Output voltage range	20 ... 30 VDC
Max. continuous current	500 mA
Turn-on time	< 30 ms
Turn-off time	< 30 ms
Max. voltage drop at output	1.2 V
Reverse voltage transistor/triac	80 V
Switching frequency	5 Hz
General Specifications	
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV _{rms}
Ambient operating temperature	-25 ... +55 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 56 x 91, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch



Optocoupler module,
output voltage range: 20 ... 30 VDC,
max. continuous current: 0.5 A,
3-wire connection, low-side switching,
red status indicator, 6 mm wide

Optocoupler module,
output voltage range: 20 ... 30 VDC,
max. continuous current: 0.5 A,
3-wire connection, high-side switching,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
230 VAC	0.6 mA	859-712	5

U_N	I_N	Item No.	Pack. Unit
230 VAC	0.6 mA	859-772	5

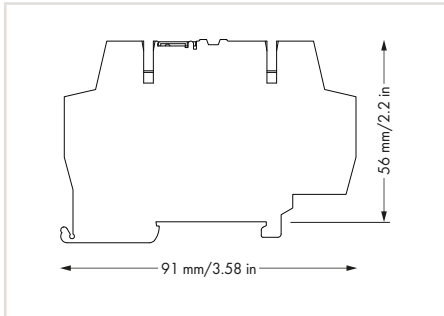
Specific Technical Data

Control Circuit	
Input voltage range (low level)	0 ... 90 VAC
Input voltage range (high signal)	175 ... 270 VAC
General Specifications	
Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508

Input voltage range (low level)	0 ... 90 VAC
Input voltage range (high signal)	175 ... 270 VAC
Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508

Input voltage range (low level)	0 ... 90 VAC
Input voltage range (high signal)	175 ... 270 VAC
Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508

Rail-Mount Terminal Blocks with an Optocoupler 859 Series



Technical Data

Load Circuit

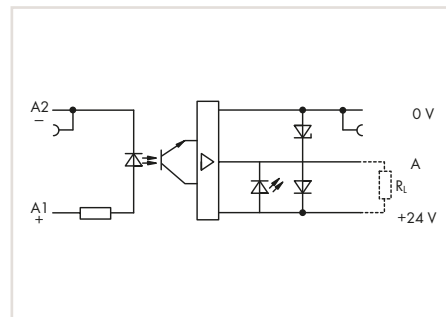
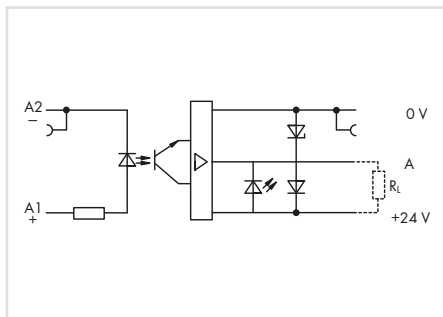
Output voltage range	20 ... 30 VDC
Max. continuous current	500 mA
Max. switching frequency	10 kHz
Max. voltage drop at output	1.2 V
Reverse voltage transistor/triac	80 V

General Specifications

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV _{rms}
Ambient operating temperature	-25 ... +55 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 56 x 91, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch



Similar to picture



Optocoupler module,
output voltage range: 20 ... 30 VDC,
max. continuous current: 0.5 A,
3-wire connection, low-side switching,
frequency: 10 kHz,
red status indicator, 6 mm wide

Optocoupler module,
output voltage range: 20 ... 30 VDC,
max. continuous current: 0.5 A,
3-wire connection, low-side switching,
frequency: 10 kHz,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
5 VDC	9.6 mA	859-702	25

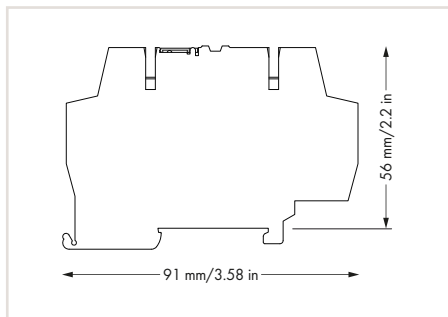
U_N	I_N	Item No.	Pack. Unit
24 VDC	7.7 mA	859-708	25

Specific Technical Data

Control Circuit	
Input voltage range (low level)	0 ... 1 VDC
Input voltage range (high signal)	4 ... 6.25 VDC
Load Circuit	
Turn-on time	< 7 μ s
Turn-off time	< 15 ms
General Specifications	
Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508

Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high signal)	19 ... 30 VDC
Turn-on time	< 10 μ s
Turn-off time	< 10 μ s
Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508

Rail-Mount Terminal Blocks with an Optocoupler 859 Series

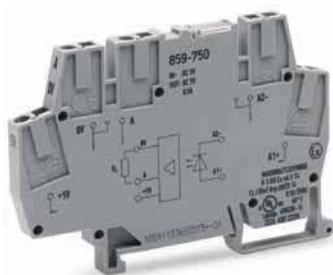


Technical Data

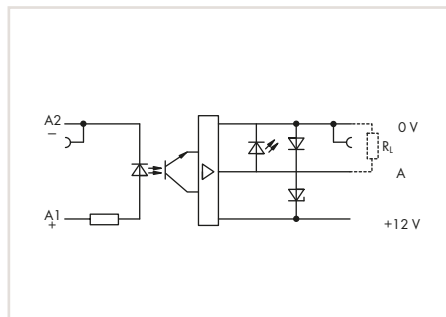
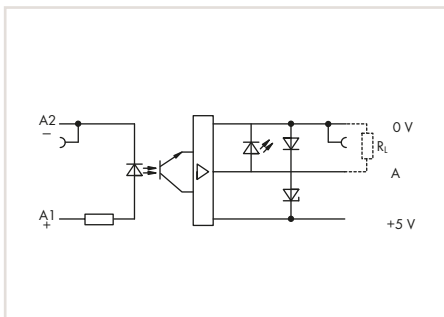
Load Circuit	
Max. continuous current	500 mA
Peak output current	4 A
Turn-on time	< 15 μ s
Turn-off time	< 30 μ s
Max. switching frequency	10 kHz
Max. voltage drop at output	1.2 V
Reverse voltage transistor/triac	80 V
General Specifications	
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV _{rms}
Ambient operating temperature	-25 ... +40 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 56 x 91, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch



Accessories,
see page 156



Similar to picture



Optocoupler module,
output voltage range: 4 ... 6.25 VDC,
max. continuous current: 0.5 A,
3-wire connection, high-side switching,
frequency: 10 kHz,
red status indicator, 6 mm wide

Optocoupler module,
output voltage range: 8 ... 18 VDC,
max. continuous current: 0.5 A,
3-wire connection, high-side switching,
frequency: 10 kHz,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
5 VDC	8 mA	859-750	5

U_N	I_N	Item No.	Pack. Unit
5 VDC	8 mA	859-751	5

Specific Technical Data

Control Circuit

Input voltage range (low level)	0 ... 1 VDC
Input voltage range (high signal)	4 ... 6.25 VDC

Output voltage range	4 ... 6.25 VDC
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General Specifications

Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508
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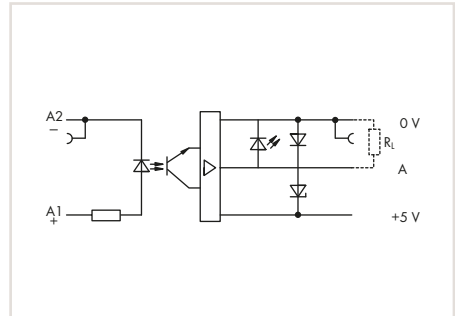
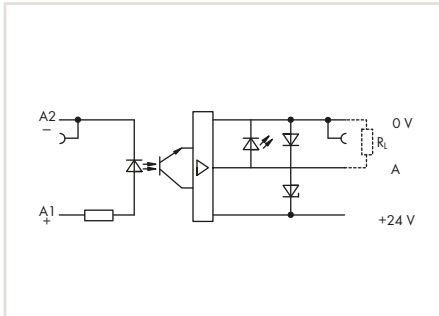
Input voltage range (low level)	0 ... 1 VDC
Input voltage range (high signal)	4 ... 6 VDC

Output voltage range	8 ... 18 VDC
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Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508
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Rail-Mount Terminal Blocks with an Optocoupler 859 Series

2



Optocoupler module,
output voltage range: 20 ... 30 VDC,
max. continuous current: 0.5 A,
3-wire connection, high-side switching,
frequency: 10 kHz,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
5 VDC	10 mA	859-752	5

Optocoupler module.
output voltage range: 4 ... 6.25 VDC,
max. continuous current: 0.5 A,
3-wire connection, high-side switching,
frequency: 10 kHz,
red status indicator, 6 mm wide

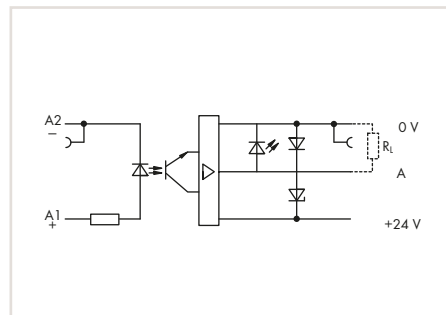
U_N	I_N	Item No.	Pack. Unit
24 VDC	11 mA	859-756	5

Specific Technical Data

Control Circuit	
Input voltage range (low level)	0 ... 1 VDC
Input voltage range (high signal)	4 ... 6 VDC
Load Circuit	
Output voltage range	20 ... 30 VDC
Output voltage range	4 ... 6.25 VDC
General Specifications	
Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508
Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508



2



Optocoupler module,
output voltage range: 20 ... 30 VDC,
max. continuous current: 0.5 A,
3-wire connection, high-side switching,
frequency: 10 kHz,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	8 mA	859-758	25

Specific Technical Data

Control Circuit

Input voltage range (low level)

0 ... 5 VDC

Input voltage range (high signal)

18 ... 30 VDC

Load Circuit

Output voltage range

20 ... 30 VDC

General Specifications

Standards/approvals

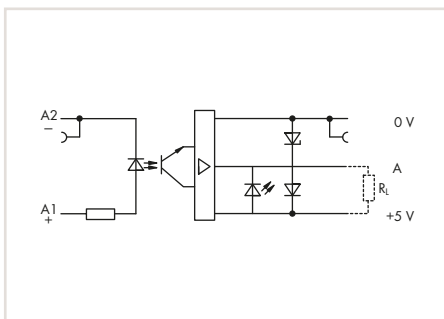
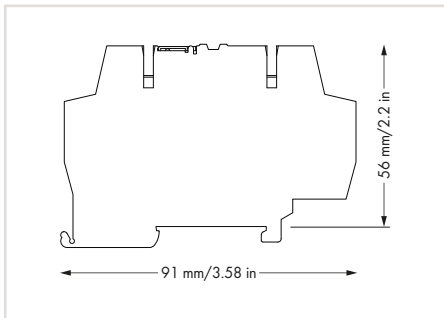
EN 60664-1; EN 61000-6-2; EN 61000-6-3;
EN 61373; UL 508

Rail-Mount Terminal Blocks with an Optocoupler 859 Series



Optocoupler module,
output voltage range: 4 ... 6.25 VDC,
max. continuous current: 0.5 A,
3-wire connection, low-side switching,
frequency: 10 kHz,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	11 mA	859-706	5



Technical Data

Control Circuit

Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high signal)	18 ... 30 VDC

Load Circuit

Max. continuous current	0.5 A
Output voltage range	4 ... 6.25 VDC
Turn-on time	< 7 μ s
Turn-off time	< 15 μ s
Max. switching frequency	10 kHz
Max. voltage drop at output	1.2 V
Reverse voltage transistor/triac	80 V

General Specifications

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV _{rms}
Ambient operating temperature	-25 ... +55 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 56 x 91, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508

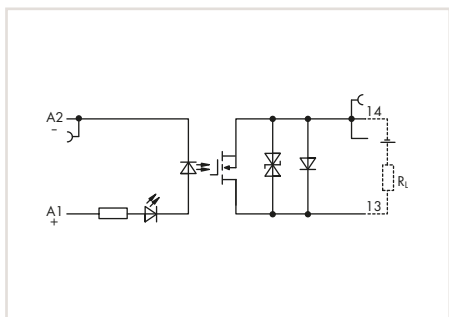
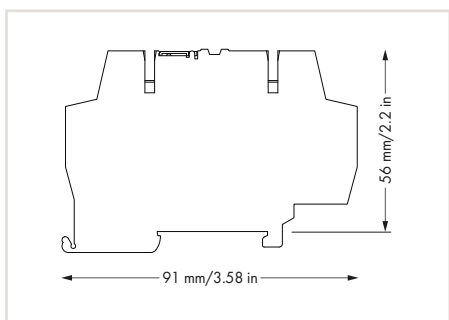
Rail-Mount Terminal Blocks with an Optocoupler 859 Series



Similar to picture

Optocoupler module,
output voltage range: 3 ... 30 VDC,
max. continuous current: 0.5 A,
2-wire connection
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
12 VDC	9.2 mA	859-797	5



Technical Data

Control Circuit

Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high signal)	9 ... 16 VDC

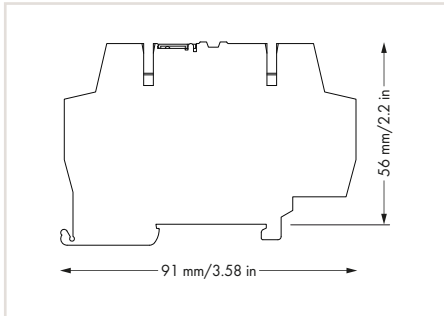
Load Circuit

Max. continuous current	0.5 A
Output voltage range	3 ... 30 VDC
Peak output current	2.7 A
Turn-on time	15 μ s
Turn-off time	100 μ s
Max. switching frequency	2.5 kHz
Max. voltage drop at output	0.2 V
Reverse voltage transistor/triac	55 V

General Specifications

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV _{rms}
Ambient operating temperature	-25 ... +55 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 56 x 91, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; UL 508

Rail-Mount Terminal Blocks with an Optocoupler 859 Series



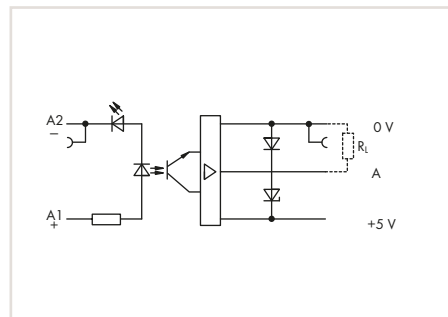
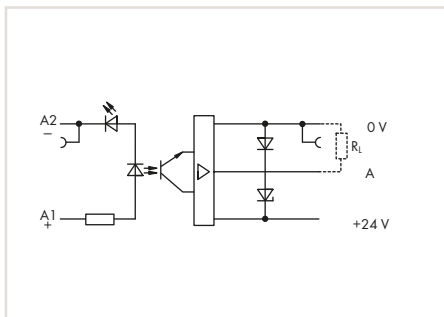
Technical Data

Load Circuit

Max. continuous current	100 mA
Peak output current	0.8 A
Turn-on time	< 0.5 μ s
Turn-off time	< 5 μ s
Max. switching frequency	100 kHz
Reverse voltage transistor/triac	40 V

General Specifications

Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV _{rms}
Ambient operating temperature	-25 ... +55 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 56 x 91, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch



Optocoupler module,
output voltage range: 20 ... 28.8 VDC,
max. continuous current: 0.1 A,
3-wire connection, high-side switching,
frequency: 100 kHz,
red status indicator, 6 mm wide

Optocoupler module,
output voltage range: 4 ... 6 VDC,
max. continuous current: 0.1 A,
3-wire connection, high-side switching,
frequency: 100 kHz,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
5 VDC	16.5 mA	859-753	5

U_N	I_N	Item No.	Pack. Unit
24 VDC	9 mA	859-755	5

Specific Technical Data

Control Circuit

Input voltage range (low level)	0 ... 1 VDC
Input voltage range (high signal)	4 ... 6.25 VDC

Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high signal)	20 ... 30 VDC

Load Circuit

Output voltage range	20 ... 28.8 VDC
Max. voltage drop at output	1.2 V

Output voltage range	4 ... 6 VDC
Max. voltage drop at output	0.6 V

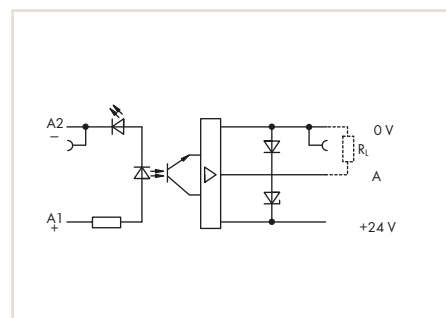
General Specifications

Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508
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Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; EN 61373; UL 508
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Rail-Mount Terminal Blocks with an Optocoupler 859 Series

2



Optocoupler module,
output voltage range: 20 ... 28.8 VDC,
max. continuous current: 0.1 A,
3-wire connection, high-side switching,
frequency: 100 kHz,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	9 mA	859-759	5

Specific Technical Data

Control Circuit

Input voltage range (low level)

0 ... 5 VDC

Input voltage range (high signal)

20 ... 30 VDC

Load Circuit

Output voltage range

20 ... 28.8 VDC

Max. voltage drop at output

1.2 V

General Specifications

Standards/approvals

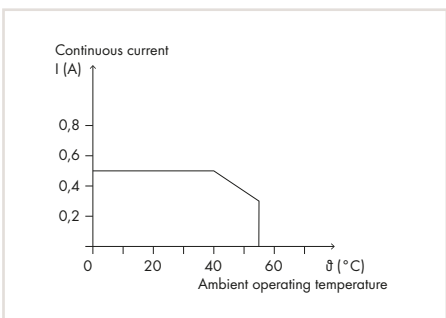
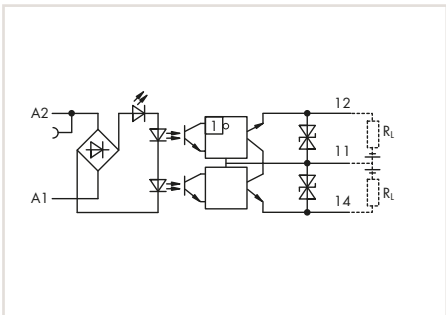
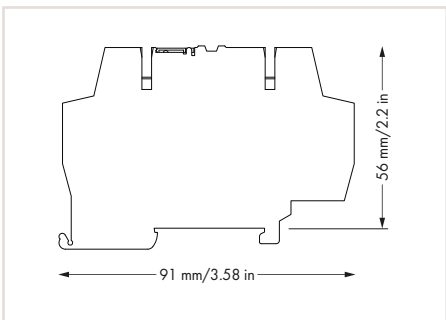
EN 60664-1; EN 61000-6-2; EN 61000-6-3;
EN 61373

Rail-Mount Terminal Blocks with an Optocoupler 859 Series



Optocoupler module,
output voltage range: 3 ... 30 VDC,
max. continuous current: 0.5 A,
1 changeover contact,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	5.3 mA	859-732	5



Current carrying capacity

Technical Data

Control Circuit

Input voltage range (low level)	0 ... 5 VDC
Input voltage range (high signal)	15 ... 42 VDC

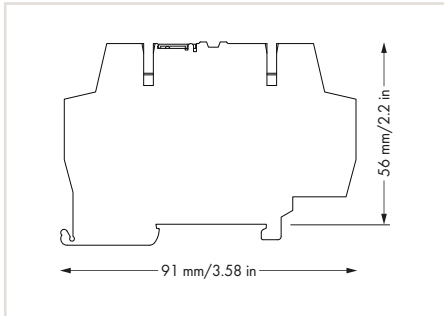
Load Circuit

Output voltage range	3 ... 30 VDC
Max. continuous current	0.5 ADC
Peak output current	4 A
Turn-on time	25 μ s
Turn-off time	150 μ s
Max. switching frequency	1.5 kHz
Max. voltage drop at output	1.5 V
Reverse voltage transistor/triac	80 V

General Specifications

Dielectric strength, control/load circuit (AC, 1 min)	3.75 kV _{rms}
Ambient operating temperature	-25 ... +55 °C
Storage temperature	-25 ... +70 °C
Dimensions (mm) W x H x D	6 x 56 x 91, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Standards/approvals	EN 60664-1; EN 61000-6-2; EN 61000-6-3; UL 508

Rail-Mount Terminal Blocks with an Optocoupler 859 Series

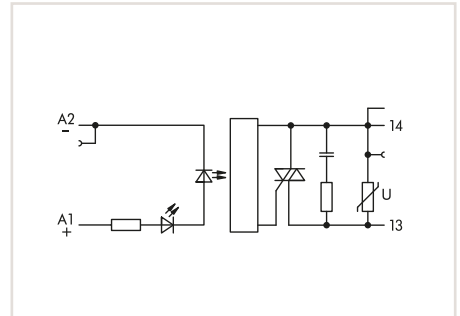
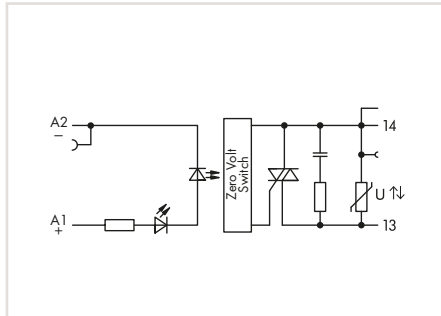


Technical Data

Load Circuit	
Output voltage range	24 ... 260 VAC
Max. continuous current	500 mA
Peak output current	30 A
Turn-on time	10 ms
Turn-off time	10 ms
Switching frequency	50 / 60 Hz
Max. voltage drop at output	1.2 V
Reverse voltage transistor/triac	600 V
General Specifications	
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV _{rms}
Ambient operating temperature	-25 ... +55 °C
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D	6 x 56 x 91, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch



Accessories,
see page 156



Optocoupler module,
output voltage range: 24 ... 260 VAC,
max. continuous current: 0.5 A,
2-wire connection, zero switching,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
24 VDC	6 mA	859-734	5

Optocoupler module,
output voltage range: 24 ... 260 VAC,
max. continuous current: 0.5 A,
2-wire connection, zero switching,
red status indicator, 6 mm wide

U_N	I_N	Item No.	Pack. Unit
5 VDC	7.7 mA	859-902	5

Specific Technical Data

Control Circuit

Input voltage range (low level)

0 ... 5 VDC

0 ... 1 VDC

Input voltage range (high signal)

19 ... 28.8 VDC

4 ... 6.25 VDC

General Specifications

Standards/approvals

EN 61010-2-201; EN 61000-6-2; EN 61000-6-3;
UL 508

EN 61010-2-201; EN 61000-6-2; EN 61000-6-3;
UL 508

Accessories

859 Series

Operating tool, with partially insulated shaft



Description	Item No.	Pack. Unit
Type 2, (3.5 x 0.5) mm blade	210-720	1

Felt-tip pen



Description	Item No.	Pack. Unit
Fiber-tip pen for permanent marking	210-110	1

Test pin



Description	Item No.	Pack. Unit
Ø 1 mm / 0.039 in.; with solder connection for test cable	859-500	100 (100x1)

End and intermediate plate



Description	Item No.	Pack. Unit
End and intermediate plate, 1 mm thick, gray	859-525	100 (4x25)

Push-in type jumper bars, light gray, insulated 18 A



Description	Item No.	Pack. Unit
2-way	859-402	200 (8x25)
3-way	859-403	200 (8x25)
4-way	859-404	200 (8x25)
5-way	859-405	200 (8x25)
6-way	859-406	100 (4x25)
7-way	859-407	100 (4x25)
8-way	859-408	100 (4x25)
9-way	859-409	100 (4x25)
10-way	859-410	100 (4x25)
Item no. suffixes for colored push-in type jumper bars	yellow	... /000-029
	red	... /000-005
	blue	... /000-006

Mini-WSB Quick Marking System,
10 strips with 10 markers, white, with black
printing



Description	Item No.	Pack. Unit
plain	248-501	5 cards
Marking		
1 ... 10 (10 x)	248-502	5 cards
11 ... 20 (10 x)	248-503	5 cards
21 ... 30 (10 x)	248-504	5 cards
31 ... 40 (10 x)	248-505	5 cards
41 ... 50 (10 x)	248-506	5 cards
1 ... 50 (2 x)	248-566	5 cards
K 1 ... K 10 (10 x)	248-450	5 cards
K 11 ... K 20 (10 x)	248-451	5 cards
K 100 (10 x)	248-452	5 cards
U 1 ... U 10 (10 x)	248-453	5 cards
U 11 ... U 20 (10 x)	248-454	5 cards
U 100 (10 x)	248-455	5 cards

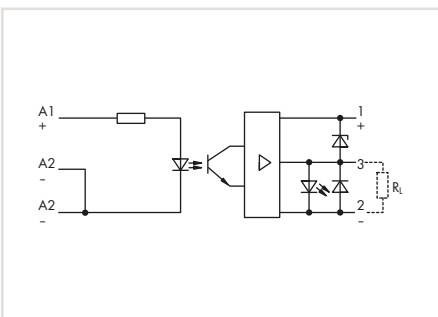
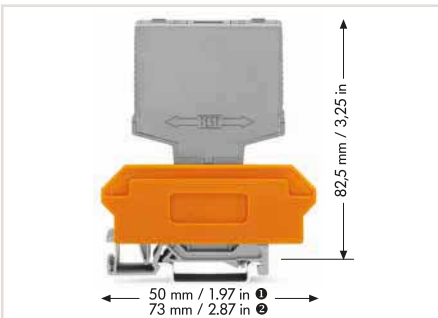
Pluggable Modules – Optocouplers

286 Series



Optocoupler module,
output voltage range: 20 ... 30 VDC,
max. continuous current: 0.5 A,
3-wire connection, high-side switching,
red status indicator, 15 mm wide

U_N	I_N	Item No.	Pack. Unit
5 V	14 mA	286-752/002-000	1



Technical Data

Control Circuit

Input voltage range (high signal)	2 ... 6.25 VDC
Input current range	3.3 ... 18.5 mADC

Load Circuit

Output voltage range	20 ... 30 VDC
Max. continuous current	500 mA
Turn-on time	< 5 μ s
Turn-off time	< 10 μ s
Max. switching frequency	25 kHz
Leakage current	2.5 μ A
Max. voltage drop at output	\leq 1.2 V
Max. output (reverse current)	12 mA
Reverse voltage transistor/triac	80 VDC

General Specifications

Nominal voltage	50 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-25 ... +70 °C
Standards/specifications	EN 60664-1

Accessories

Terminal block for pluggable modules

with 2-conductor terminal blocks, orange separator ②

with 4-conductor terminal blocks, orange separator ②

with 4-conductor terminal blocks, orange separator ②

Conductor range: 0.08 mm² ... 2.5 mm² / 28 ... 14 AWG;
Strip length: 8 ... 9 mm / 0.31 ... 0.35 in.

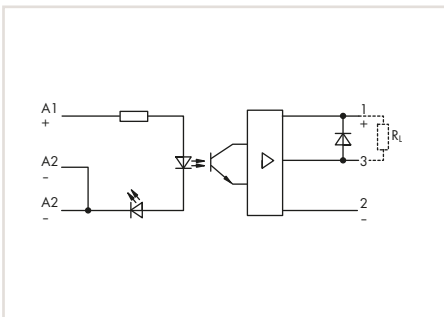
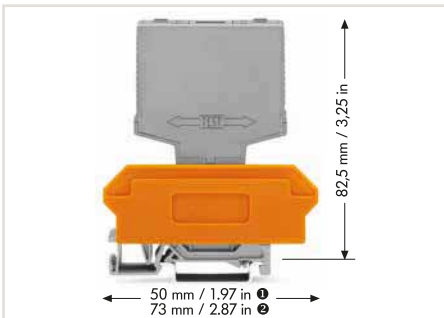
Width	Item No.	Pack. Unit
17 mm	280-619	1
17 mm	280-609	1
20 mm	280-763	1

 Accessories,
see page 166



Optocoupler module,
output voltage range: 15 ... 40 VDC,
max. continuous current: 5 A,
3-wire connection, low-side switching,
frequency: 1 kHz,
red status indicator, 15 mm wide

U_N	I_N	Item No.	Pack. Unit
24 V	13.5 mA	286-721	1



Technical Data

Control Circuit

Input voltage range (high signal)	15 ... 30 VDC
Input current range	7.5 ... 18 mADC

Load Circuit

Output voltage range	15 ... 40 VDC
Max. continuous current	5 A
Turn-on time	< 20 μ s
Turn-off time	< 80 μ s
Max. switching frequency	1 kHz
Leakage current	2.5 μ A
Max. voltage drop at output	\leq 0.5 V
Reverse voltage transistor/triac	50 VDC

General Specifications

Nominal voltage	50 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV
Ambient operating temperature	-25 ... +40 °C
Storage temperature	-25 ... +40 °C
Standards/specifications	EN 60664-1

Accessories

Terminal block for pluggable modules

with 2-conductor terminal blocks, orange separator ②

with 4-conductor terminal blocks, orange separator ②

with 4-conductor terminal blocks, orange separator ②

Conductor range: 0.08 mm² ... 2.5 mm² / 28 ... 14 AWG;
Strip length: 8 ... 9 mm / 0.31 ... 0.35 in.

Width	Item No.	Pack. Unit
17 mm	280-619	1
17 mm	280-609	1
20 mm	280-763	1

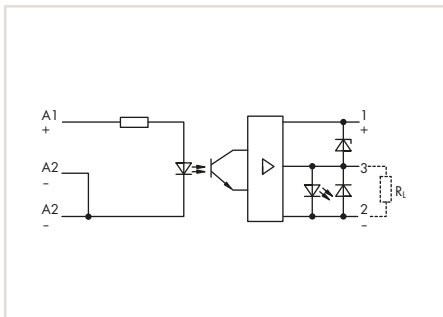
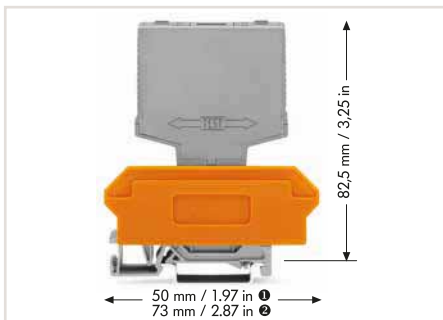
Pluggable Modules – Optocouplers

286 Series



Optocoupler module,
output voltage range: 20 ... 30 VDC,
max. continuous current: 4 A,
3-wire connection, high-side switching,
frequency: 2.5 kHz
red status indicator, 15 mm wide

U_N	I_N	Item No.	Pack. Unit
24 V	13.5 mA	286-723	1



Technical Data

Control Circuit

Input voltage range (high signal)	15 ... 30 VDC
Input current range	7.6 ... 15.0 mADC

Load Circuit

Output voltage range	20 ... 30 VDC
Max. continuous current	4 A
Turn-on time	≤ 15 μs
Turn-off time	≤ 25 μs
Max. switching frequency	2.5 kHz
Leakage current	2.5 μA
Max. voltage drop at output	≤ 1.2 V
Max. output (reverse current)	12 mA
Reverse voltage transistor/triac	100 VDC

General Specifications

Nominal voltage	50 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV
Ambient operating temperature	-25 ... +40 °C
Storage temperature	-25 ... +40 °C
Standards/specifications	EN 60664-1

Accessories

Terminal block for pluggable modules


with 2-conductor terminal blocks, orange separator ②

with 4-conductor terminal blocks, orange separator ②

with 4-conductor terminal blocks, orange separator ②

Conductor range: 0.08 mm² ... 2.5 mm² / 28 ... 14 AWG;
Strip length: 8 ... 9 mm / 0.31 ... 0.35 in.

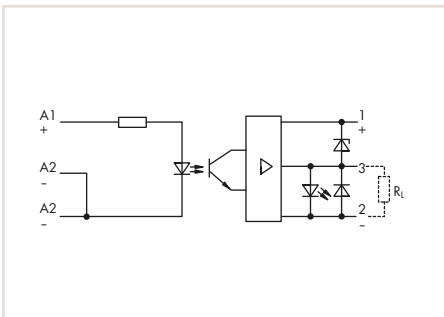
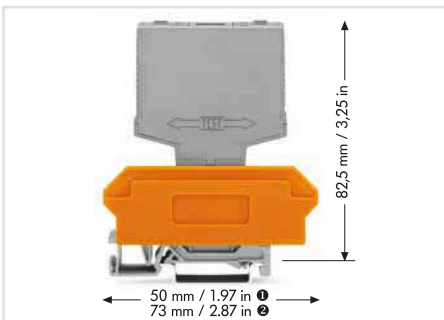
Width	Item No.	Pack. Unit
17 mm	280-619	1
17 mm	280-609	1
20 mm	280-763	1

 Accessories,
see page 166



Optocoupler module,
output voltage range: 20 ... 30 VDC,
max. continuous current: 0.5 A,
3-wire connection, high-side switching,
frequency: 25 kHz,
red status indicator, 15 mm wide

U_N	I_N	Item No.	Pack. Unit
24 V	15 mA	286-752	1



Technical Data

Control Circuit

Input voltage range (high signal)	12 ... 30 VDC
Input current range	5 ... 20 mADC

Load Circuit

Output voltage range	20 ... 30 VDC
Max. continuous current	500 mA
Turn-on time	< 7 μ s
Turn-off time	< 15 μ s
Max. switching frequency	25 kHz
Leakage current	2.5 μ A
Max. voltage drop at output	\leq 1.2 V
Max. output	12 mA
Reverse voltage transistor/triac	80 VDC

General Specifications

Nominal voltage	50 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV
Ambient operating temperature	-25 ... +40 °C
Storage temperature	-25 ... +40 °C
Standards/specifications	EN 60664-1

Accessories

Terminal block for pluggable modules

with 2-conductor terminal blocks, orange separator ②

with 4-conductor terminal blocks, orange separator ②

with 4-conductor terminal blocks, orange separator ②

Conductor range: 0.08 mm² ... 2.5 mm² / 28 ... 14 AWG;
Strip length: 8 ... 9 mm / 0.31 ... 0.35 in.

Width	Item No.	Pack. Unit
17 mm	280-619	1
17 mm	280-609	1
20 mm	280-763	1

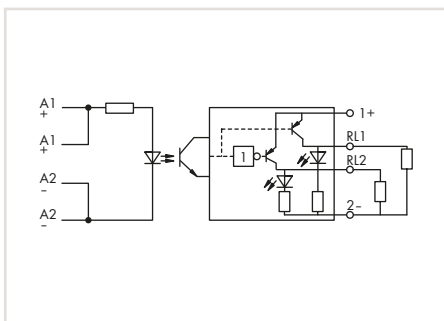
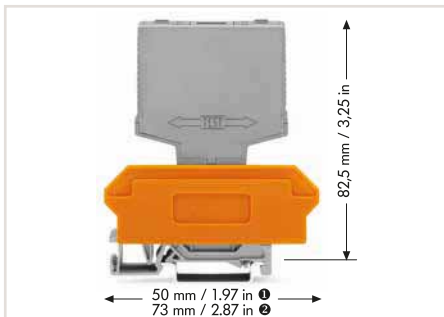
Pluggable Modules – Optocouplers

286 Series



Optocoupler module, with 2 inverted outputs, output voltage range: 20 ... 30 VDC, max. continuous current: 0.5 A, frequency: 2.5 kHz, 20 mm wide

U_N	I_N	Item No.	Pack. Unit
24 V	9 mA	286-790	1



Technical Data

Control Circuit	
Input voltage range (high signal)	20 ... 30 VDC
Input current range	7 ... 12 mADC
Load Circuit	
Output voltage range	20 ... 30 VDC
Max. continuous current	500 mA
Turn-on time	4 μ s
Turn-off time	15 μ s
Max. switching frequency	2.5 kHz
Leakage current	2.5 μ A
Max. voltage drop at output	< 1.2 V
Reverse voltage transistor/triac	100 VDC
General Specifications	
Nominal voltage	50 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV
Ambient operating temperature	-25 ... +40 °C
Storage temperature	-25 ... +40 °C
Standards/specifications	EN 60664-1

Accessories

Terminal block for pluggable modules

with 2-conductor terminal blocks, orange separator ②

with 4-conductor terminal blocks, orange separator ②

with 4-conductor terminal blocks, orange separator ②

Conductor range: 0.08 mm² ... 2.5 mm² / 28 ... 14 AWG;
Strip length: 8 ... 9 mm / 0.31 ... 0.35 in.

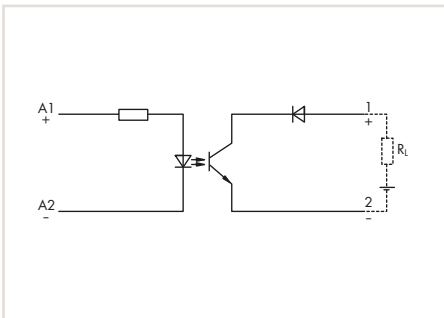
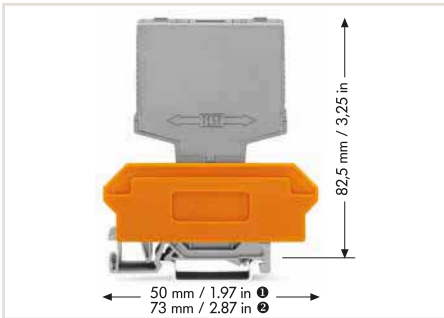
Width	Item No.	Pack. Unit
22 mm	280-638	1
22 mm	280-628	1
25 mm	280-764	1

Accessories, see page 166



Optocoupler module,
output voltage range: 20 ... 60 VDC,
max. continuous current: 0.1 A,
2-wire connection,
frequency: 3 kHz,
red status indicator, 10 mm wide

U_N	I_N	Item No.	Pack. Unit
24 V	14 mA	286-791	1



Technical Data

Control Circuit

Input voltage range (high signal)	15 ... 30 VDC
Input current range	7.5 ... 18 mADC

Load Circuit

Output voltage range	20 ... 60 VDC
Max. continuous current	100 mA
Turn-on time	10 μ s
Turn-off time	50 μ s
Max. switching frequency	3 kHz
Leakage current	2.5 μ A
Max. voltage drop at output	\leq 2 V
Reverse voltage transistor/triac	80 VDC

General Specifications

Nominal voltage	50 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV
Ambient operating temperature	-25 ... +40 °C
Storage temperature	-25 ... +40 °C
Standards/specifications	EN 60664-1

Accessories

Terminal block for pluggable modules

with 2-conductor terminal blocks, orange separator ②

with 4-conductor terminal blocks, orange separator ②

with 4-conductor terminal blocks, orange separator ②

Conductor range: 0.08 mm² ... 2.5 mm² / 28 ... 14 AWG;
Strip length: 8 ... 9 mm / 0.31 ... 0.35 in.

Width	Item No.	Pack. Unit
12 mm	280-618	1
12 mm	280-608	1
15 mm	280-762	1

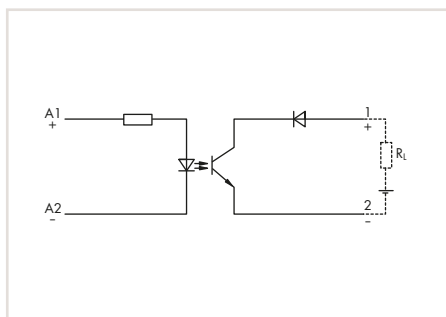
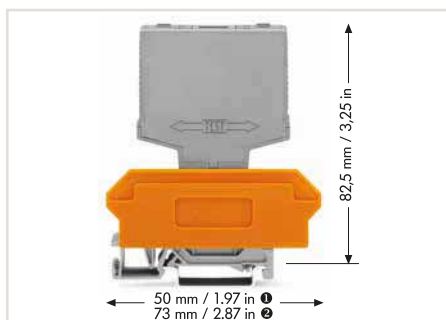
Pluggable Modules – Optocouplers

286 Series



Optocoupler module,
output voltage range: 20 ... 60 VDC,
max. continuous current: 0.1 A,
frequency: 1.5 kHz,
10 mm wide

U_N	I_N	Item No.	Pack. Unit
24 V	4 mA	286-794	1




Technical Data

Control Circuit	
Input voltage range (high signal)	18 ... 30 VDC
Input current range	2 ... 5 mADC
Load Circuit	
Output voltage range	20 ... 60 VDC
Max. continuous current	100 mA
Turn-on time	80 μ s
Turn-off time	100 μ s
Max. switching frequency	1.5 kHz
Leakage current	2.5 μ A
Max. voltage drop at output	≤ 2 V
Reverse voltage transistor/triac	80 VDC
General Specifications	
Nominal voltage	100 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV
Ambient operating temperature	-25 ... +60 °C
Storage temperature	-25 ... +60 °C
Standards/specifications	EN 60664-1

Accessories

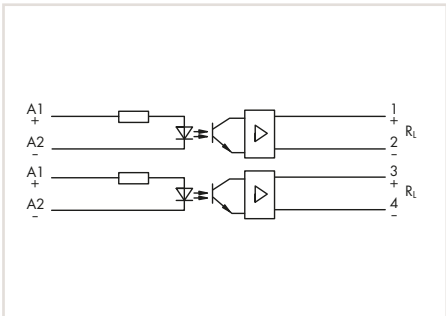
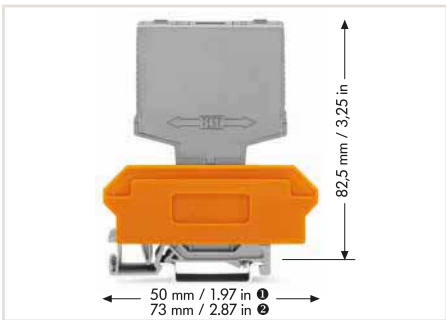
Terminal block for pluggable modules	Width	Item No.	Pack. Unit
with 2-conductor terminal blocks, orange separator ②	12 mm	280-618	1
with 4-conductor terminal blocks, orange separator ②	12 mm	280-608	1
with 4-conductor terminal blocks, orange separator ②	15 mm	280-762	1
Conductor range: 0.08 mm ² ... 2.5 mm ² / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 in.			

 Accessories,
see page 166



Dual-channel optocoupler module, output voltage range: 20 ... 30 VDC, max. continuous current: 0.25 A, frequency: 1.5 kHz, 20 mm wide

U _N	I _N	Item No.	Pack. Unit
24 V	15 mA	286-792	1



Technical Data

Control Circuit	
Input voltage range (high signal)	7.5 ... 30 VDC
Input current range	4 ... 19 mA
Load Circuit	
Output voltage range	20 ... 30 VDC
Max. continuous current	250 mA
Turn-on time	< 60 μs
Turn-off time	< 120 μs
Max. switching frequency	1.5 kHz
Leakage current	2.6 μA
Max. voltage drop at output	< 2.5 V
Reverse voltage transistor/triac	80 VDC
General Specifications	
Nominal voltage	50 V
Rated surge voltage	4 kV
Pollution degree	2
Dielectric strength, control/load circuit (AC, 1 min)	2.5 kV
Ambient operating temperature	-25 ... +40 °C
Storage temperature	-25 ... +40 °C
Standards/specifications	EN 60664-1

Accessories

Terminal block for pluggable modules	Width	Item No.	Pack. Unit
with 2-conductor terminal blocks, orange separator ②	22 mm	280-638	1
with 4-conductor terminal blocks, orange separator ②	22 mm	280-628	1
with 4-conductor terminal blocks, orange separator ②	25 mm	280-764	1
Conductor range: 0.08 mm ² ... 2.5 mm ² / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 in.			

Accessories

286 Series

WSB marker cards,
5 cards, each containing 10 strips with 10 markers



Marking	Item No.	Pack. Unit
K	209-782	5 cards
1 ... 10 (10 x)	209-702	5 cards
A1, A2, 13, 14	209-952	5 cards
A1, A2, 11, 12	209-953	5 cards
11, 12, 14, A1, A2, A2, 11, 12, 14	209-994	5 cards
12, A1, A2, 24, 11, 14, 21, 22	209-995	5 cards
A1, A1, A2, A2, 11, 12, 13, 14, 23, 24	209-693	5 cards
12, A1, A2, 23, 24, 11, 13, 14, 21, 22	209-691	5 cards
12, A1, A2, 23, 24, 11, 13, 14, 33, 34	209-690	5 cards
14, A1, A2, 33, 34, 13, 23, 24, 43, 44	209-692	5 cards
A1, A2, 32, 31, 34, 42, 41, 12, 11, 14, 22, 21, 24, 44	249-656	5 cards
L+, 1, L-, L-, 11, 12, 13, 14	209-954	5 cards
A1, A2, A3, 11, 12, 14	249-607	5 cards
A1, A1, A2, A2, 12, 11, 11, 14	209-996	5 cards
A1, A1, St, A2, A2, 12, 11, 11, 14	209-601	5 cards
U1, U2, U3, U4, 0V, 12, 11, 11, 14, 14	209-951	5 cards
U	209-789	5 cards
A1, A2, A2, 1, 3, 2	209-685	5 cards
A1, A2, A2, 1, 2, 2	209-686	5 cards
A1+, A1+, A2-, A2-, 1, RL1, RL2, 2	209-955	5 cards
A1+, A1+, A2-, A2-, 1+, 1+, A, 2- +/-	249-651 209-552	5 cards 5 cards
1, 2, 3, 0V, +UB, OUT, ERR., 0V	249-622	5 cards
1, 2, 0V, +UB, OUT, ERR., 0V	249-623	5 cards
Lin, Lin, Lout, Lout, 24V, UA, UA, 0V	209-957	5 cards
Lin, Lin, Lout, 11, 14, 14, Lin, Lin, Lout	249-654	5 cards
lin, lin, lout, lout, 24V, 11, 12, 14, 0V	209-997	5 cards
S	209-682	5 cards
V	209-784	5 cards
F1 ... F10	209-787	5 cards
D	209-783	5 cards
+, -, 1, 2, 3, 13, 14, 4, 5, 6	249-608	5 cards
L, N, Quitt, Störung, Test, N, 14, 24	249-606	5 cards
A1, A2, Quitt, Störung, 12, 11, 11, 14	249-653	5 cards

WSB Quick marking system, 4 mm, plain
5 cards, each containing 10 strips with
10 markers












Description	Item No.	Pack. Unit
white	209-701	5 cards
yellow	209-701/000-002	5 cards
red	209-701/000-005	5 cards
blue	209-701/000-006	5 cards
gray	209-701/000-007	5 cards
orange	209-701/000-012	5 cards
light green	209-701/000-017	5 cards
green	209-701/000-023	5 cards
violet	209-701/000-024	5 cards












JUMPFLEX® Signal Conditioners and Isolation Amplifiers

JUMPFLEX® Signal Conditioners and Isolation Amplifiers

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Technical Details

3












Description	Item No.	Image	Circuit Diagram	Input	Input	Input																																		
<div style="display: flex; justify-content: space-between; align-items: center;"> <div data-bbox="145 315 225 394">  </div> <div data-bbox="240 331 475 365"> <h2>Isolation Amplifiers</h2> </div> <div data-bbox="1075 315 1155 394">  </div> <div data-bbox="1219 315 1299 394">  </div> <div data-bbox="1362 315 1442 394">  </div> </div>																																								
<p>Universal Isolation Amplifier</p>	<p>2857-401</p>		<table border="1" style="font-size: small;"> <tr> <td>1.1</td> <td>U+</td> <td rowspan="2">INPUT VOLTAGE</td> <td>OUTPUT</td> <td>OUT+</td> <td>4.1</td> </tr> <tr> <td>1.2</td> <td>U-</td> <td>OUT-</td> <td>4.2</td> <td></td> </tr> <tr> <td>2.1</td> <td>I+</td> <td rowspan="2">INPUT CURRENT</td> <td>POWER</td> <td>U_s+</td> <td>5.1</td> </tr> <tr> <td>2.2</td> <td>I-</td> <td>GND</td> <td>5.2</td> <td></td> </tr> <tr> <td>3.1</td> <td>DO (GND)</td> <td>DO</td> <td>JUMPER</td> <td>U_s+</td> <td>6.1</td> </tr> <tr> <td>3.2</td> <td>DI (GND)</td> <td>DI (HOLD)</td> <td>POWER</td> <td>GND</td> <td>6.2</td> </tr> </table>	1.1	U+	INPUT VOLTAGE	OUTPUT	OUT+	4.1	1.2	U-	OUT-	4.2		2.1	I+	INPUT CURRENT	POWER	U _s +	5.1	2.2	I-	GND	5.2		3.1	DO (GND)	DO	JUMPER	U _s +	6.1	3.2	DI (GND)	DI (HOLD)	POWER	GND	6.2	<p>0 ... 1 mA 0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA 0 ... 100 mA</p>	<p>0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V 0 ... 220 V</p>	<p>± 1 mA ± 10 mA ± 20 mA ± 100 mA</p> <hr/> <p>± 1 V ± 10 V ± 30 V ± 100 V ± 200 V</p>
1.1	U+	INPUT VOLTAGE	OUTPUT	OUT+	4.1																																			
1.2	U-		OUT-	4.2																																				
2.1	I+	INPUT CURRENT	POWER	U _s +	5.1																																			
2.2	I-		GND	5.2																																				
3.1	DO (GND)	DO	JUMPER	U _s +	6.1																																			
3.2	DI (GND)	DI (HOLD)	POWER	GND	6.2																																			
<p>Isolation Amplifier, Configurable, with Zero/Span Adjustment</p>	<p>857-400</p>		<table border="1" style="font-size: small;"> <tr> <td>IN+</td> <td>1</td> <td>IN</td> <td>5</td> <td>OUT+</td> </tr> <tr> <td>GND 1</td> <td>2</td> <td></td> <td>6</td> <td>GND 2</td> </tr> <tr> <td>U_s+</td> <td>3</td> <td>POWER</td> <td>7</td> <td>U_s+</td> </tr> <tr> <td>GND 3</td> <td>4</td> <td></td> <td>8</td> <td>GND 3</td> </tr> </table>	IN+	1	IN	5	OUT+	GND 1	2		6	GND 2	U _s +	3	POWER	7	U _s +	GND 3	4		8	GND 3	<p>0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA</p>	<p>0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V</p>															
IN+	1	IN	5	OUT+																																				
GND 1	2		6	GND 2																																				
U _s +	3	POWER	7	U _s +																																				
GND 3	4		8	GND 3																																				
<p>Isolation Amplifier, Configurable, with Digital Output</p>	<p>857-401</p>		<table border="1" style="font-size: small;"> <tr> <td>IN+</td> <td>1</td> <td>IN</td> <td>5</td> <td>OUT+</td> </tr> <tr> <td>GND 1</td> <td>2</td> <td>U_i; 1</td> <td>6</td> <td>GND 2</td> </tr> <tr> <td>DO</td> <td>3</td> <td>DO</td> <td>7</td> <td>U_s+</td> </tr> <tr> <td>GND 3</td> <td>4</td> <td>POWER</td> <td>8</td> <td>GND 3</td> </tr> </table>	IN+	1	IN	5	OUT+	GND 1	2	U _i ; 1	6	GND 2	DO	3	DO	7	U _s +	GND 3	4	POWER	8	GND 3	<p>0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA</p>	<p>0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V</p>	<p>± 20 mA</p> <hr/> <p>± 10 V</p>														
IN+	1	IN	5	OUT+																																				
GND 1	2	U _i ; 1	6	GND 2																																				
DO	3	DO	7	U _s +																																				
GND 3	4	POWER	8	GND 3																																				
<p>Universal Isolation Amplifier</p>	<p>857-402</p>		<table border="1" style="font-size: small;"> <tr> <td>U+</td> <td>1</td> <td>OUT</td> <td>5</td> <td>OUT+</td> </tr> <tr> <td>I+</td> <td>2</td> <td>U_i; 1</td> <td>6</td> <td>OUT-</td> </tr> <tr> <td>I+</td> <td>3</td> <td>POWER</td> <td>7</td> <td>U_s+</td> </tr> <tr> <td>I/U-</td> <td>4</td> <td></td> <td>8</td> <td>GND 3</td> </tr> </table>	U+	1	OUT	5	OUT+	I+	2	U _i ; 1	6	OUT-	I+	3	POWER	7	U _s +	I/U-	4		8	GND 3	<p>0 ... 0.3 mA to 0 ... 100 mA</p>	<p>0 ... 60 mV to 0 ... 200 V</p>	<p>± 0.3 mA to ± 100 mA</p> <hr/> <p>± 60 mV to ± 200 V</p>														
U+	1	OUT	5	OUT+																																				
I+	2	U _i ; 1	6	OUT-																																				
I+	3	POWER	7	U _s +																																				
I/U-	4		8	GND 3																																				
<p>Bipolar Isolation Amplifier</p>	<p>857-409</p>		<table border="1" style="font-size: small;"> <tr> <td>U+</td> <td>1</td> <td>OUT</td> <td>5</td> <td>OUT+</td> </tr> <tr> <td>U-</td> <td>2</td> <td>U_i; 1</td> <td>6</td> <td>OUT-</td> </tr> <tr> <td>I+</td> <td>3</td> <td>POWER</td> <td>7</td> <td>U_s+</td> </tr> <tr> <td>I-</td> <td>4</td> <td></td> <td>8</td> <td>GND</td> </tr> </table>	U+	1	OUT	5	OUT+	U-	2	U _i ; 1	6	OUT-	I+	3	POWER	7	U _s +	I-	4		8	GND	<p>0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA</p>	<p>0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V</p>	<p>± 10 mA ± 20 mA</p> <hr/> <p>± 5 V ± 10 V</p>														
U+	1	OUT	5	OUT+																																				
U-	2	U _i ; 1	6	OUT-																																				
I+	3	POWER	7	U _s +																																				
I-	4		8	GND																																				
<p>Isolation Amplifiers, Pre-Configured</p>	<p>857-411</p>			<p>0(4) ... 20 mA</p>																																				
	<p>857-412</p>				<p>0(2) ... 10 V</p>																																			
	<p>857-413</p>				<p>0 ... 10 V</p>																																			
	<p>857-414</p>				<p>0 ... 10 V</p>																																			
	<p>857-415</p>				<p>0 ... 20 mA</p>																																			
	<p>857-416</p>				<p>4 ... 20 mA</p>																																			

Output			Special Functions			Configuration					Power	Page
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V	± 10 mA ± 20 mA ± 5 V ± 10 V	x	x		x		x	x	x	24 VDC	182
0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V				x	x					24 VDC	184
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		x	x		x		x	x		24 VDC	186
0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V	± 10 mA ± 20 mA ± 5 V ± 10 V		x	x	x	x				24 VDC	188
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V	± 10 mA ± 20 mA ± 5 V ± 10 V			x	x					24 VDC	190
0(4) ... 20 mA												
	0(2) ... 10 V											
0 ... 20 mA											24 VDC	192
4 ... 20 mA												
	0 ... 10 V											
	0 ... 10 V											

See page 261 for an explanation of the symbols used.

Technical Details

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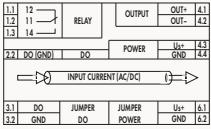

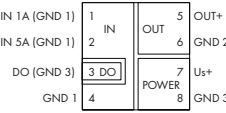

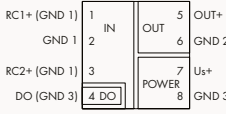

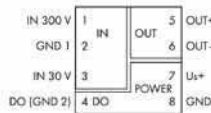

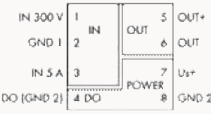

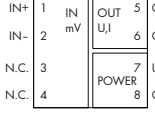
	Description	Item No.	Image	Circuit Diagram	Input																				
	 Isolation Amplifiers																								
Repeater Power Supplies	Repeater Power Supply	857-420		<table border="1"> <tr> <td>U_{Sensor+}</td> <td>1</td> <td rowspan="2">IN</td> <td>5</td> <td>OUT+</td> </tr> <tr> <td>IN</td> <td>2</td> <td>6</td> <td>GND 2</td> </tr> <tr> <td>GND 1</td> <td>3</td> <td rowspan="2">POWER</td> <td>7</td> <td>U_{s+}</td> </tr> <tr> <td>GND 1</td> <td>4</td> <td>8</td> <td>GND 3</td> </tr> </table>	U _{Sensor+}	1	IN	5	OUT+	IN	2	6	GND 2	GND 1	3	POWER	7	U _{s+}	GND 1	4	8	GND 3	0 ... 20 mA 4 ... 20 mA		
	U _{Sensor+}	1	IN	5	OUT+																				
IN	2	6		GND 2																					
GND 1	3	POWER	7	U _{s+}																					
GND 1	4		8	GND 3																					
	Repeater Power Supply, HART	857-421		<table border="1"> <tr> <td>U_{Sensor+}</td> <td>1</td> <td rowspan="2">IN</td> <td>5</td> <td>OUT +</td> </tr> <tr> <td>IN</td> <td>2</td> <td>6</td> <td>GND 2</td> </tr> <tr> <td>GND 1</td> <td>3</td> <td rowspan="2">POWER</td> <td>7</td> <td>U_{s+}</td> </tr> <tr> <td>GND 1</td> <td>4</td> <td>8</td> <td>GND 3</td> </tr> </table>	U _{Sensor+}	1	IN	5	OUT +	IN	2	6	GND 2	GND 1	3	POWER	7	U _{s+}	GND 1	4	8	GND 3	4 ... 20 mA		
U _{Sensor+}	1	IN	5	OUT +																					
IN	2		6	GND 2																					
GND 1	3	POWER	7	U _{s+}																					
GND 1	4		8	GND 3																					
Signal Splitters	Signal Splitter, (I)	857-423		<table border="1"> <tr> <td>IN+</td> <td>1</td> <td rowspan="2">IN</td> <td>5</td> <td>OUT 1+</td> </tr> <tr> <td>GND 1</td> <td>2</td> <td>6</td> <td>GND 2</td> </tr> <tr> <td>OUT 2+</td> <td>3</td> <td rowspan="2">OUT 2</td> <td>7</td> <td>U_{s+}</td> </tr> <tr> <td>GND 4</td> <td>4</td> <td>8</td> <td>GND 3</td> </tr> </table>	IN+	1	IN	5	OUT 1+	GND 1	2	6	GND 2	OUT 2+	3	OUT 2	7	U _{s+}	GND 4	4	8	GND 3	0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V	
	IN+	1	IN	5	OUT 1+																				
GND 1	2	6		GND 2																					
OUT 2+	3	OUT 2	7	U _{s+}																					
GND 4	4		8	GND 3																					
	Signal Splitter, (I,U)	857-424		<table border="1"> <tr> <td>IN+</td> <td>1</td> <td rowspan="2">IN</td> <td>5</td> <td>OUT 1+</td> </tr> <tr> <td>GND 2</td> <td>2</td> <td>6</td> <td>GND 3</td> </tr> <tr> <td>OUT 2+</td> <td>3</td> <td rowspan="2">OUT 2</td> <td>7</td> <td>U_{s+}</td> </tr> <tr> <td>GND 4</td> <td>4</td> <td>8</td> <td>GND 1</td> </tr> </table>	IN+	1	IN	5	OUT 1+	GND 2	2	6	GND 3	OUT 2+	3	OUT 2	7	U _{s+}	GND 4	4	8	GND 1	0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V	
IN+	1	IN	5	OUT 1+																					
GND 2	2		6	GND 3																					
OUT 2+	3	OUT 2	7	U _{s+}																					
GND 4	4		8	GND 1																					
Passive Isolators	Loop-Powered Isolation Amplifier	857-450		<table border="1"> <tr> <td>U+</td> <td>1</td> <td rowspan="2">IN</td> <td>5</td> <td>U_{s+}</td> </tr> <tr> <td>U-</td> <td>2</td> <td>6</td> <td>OUT 1</td> </tr> <tr> <td>I+</td> <td>3</td> <td rowspan="2">U, I</td> <td>7</td> <td>N.C.</td> </tr> <tr> <td>I-</td> <td>4</td> <td>8</td> <td>N.C.</td> </tr> </table>	U+	1	IN	5	U _{s+}	U-	2	6	OUT 1	I+	3	U, I	7	N.C.	I-	4	8	N.C.	0 ... 5 mA 0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 1 V 0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V	± 5 mA ± 10 mA ± 20 mA ± 1 V, ± 5 V ± 10 V ± 20 V
	U+	1	IN	5	U _{s+}																				
	U-	2		6	OUT 1																				
I+	3	U, I	7	N.C.																					
I-	4		8	N.C.																					
	Passive Isolator, 1 Channel	857-451		<table border="1"> <tr> <td>IN+</td> <td>1</td> <td rowspan="2">IN</td> <td>5</td> <td>OUT+</td> </tr> <tr> <td>GND 1</td> <td>2</td> <td>6</td> <td>GND 2</td> </tr> <tr> <td>N.C.</td> <td>3</td> <td rowspan="2">N.C.</td> <td>7</td> <td>N.C.</td> </tr> <tr> <td>N.C.</td> <td>4</td> <td>8</td> <td>N.C.</td> </tr> </table>	IN+	1	IN	5	OUT+	GND 1	2	6	GND 2	N.C.	3	N.C.	7	N.C.	N.C.	4	8	N.C.	0(4) ... 20 mA		
IN+	1	IN	5	OUT+																					
GND 1	2		6	GND 2																					
N.C.	3	N.C.	7	N.C.																					
N.C.	4		8	N.C.																					
	Passive Isolator, 2 Channel	857-452		<table border="1"> <tr> <td>IN 1+</td> <td>1</td> <td rowspan="2">IN 1</td> <td>5</td> <td>OUT 1+</td> </tr> <tr> <td>GND 1</td> <td>2</td> <td>6</td> <td>GND 2</td> </tr> <tr> <td>IN 2+</td> <td>3</td> <td rowspan="2">IN 2</td> <td>7</td> <td>OUT 2+</td> </tr> <tr> <td>GND 3</td> <td>4</td> <td>8</td> <td>GND 4</td> </tr> </table>	IN 1+	1	IN 1	5	OUT 1+	GND 1	2	6	GND 2	IN 2+	3	IN 2	7	OUT 2+	GND 3	4	8	GND 4	2 x 0(4) ... 20 mA		
IN 1+	1	IN 1	5	OUT 1+																					
GND 1	2		6	GND 2																					
IN 2+	3	IN 2	7	OUT 2+																					
GND 3	4		8	GND 4																					

Output		Special Functions				Configuration					Power	Page
0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V					x					24 VDC	194
4 ... 20 mA											24 VDC	196
2 x 0(4) ... 20 mA						x					24 VDC	198
2 x 0 ... 20 mA 4 ... 20 mA	2 x 0 ... 10 V 2 ... 10 V					x					24 VDC	200
4 ... 20 mA					x	x					Power via output	202
0(4) ... 20 mA											Power via input	204
2 x 0(4) ... 20 mA											Power via input	205

See page 261 for an explanation of the symbols used.

Technical Details

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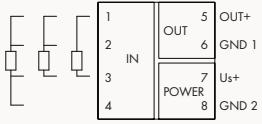

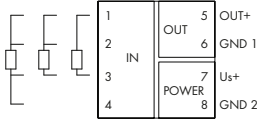

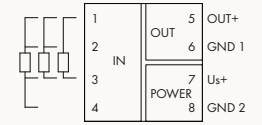

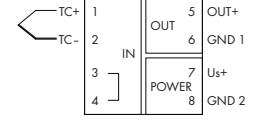

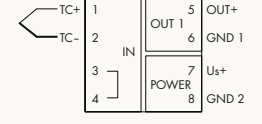

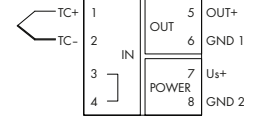

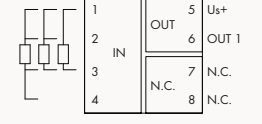

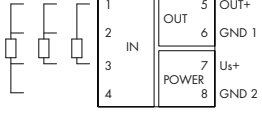

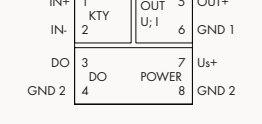
Description	Item No.	Image	Circuit Diagram	Input		
 Current and Voltage Signal Conditioners						
Through-Hole Current Signal Conditioner	2857-550			100 A AC/DC		
Current Signal Conditioner	857-550			1 A AC/DC 5 A AC/DC		
Rogowski Current Signal Conditioner	857-552			Rogowski coils 500 AAC 2000 AAC 4000 AAC		
Voltage Signal Conditioner	857-560			300 V AC/DC		
Power Signal Conditioner	857-569			300 V AC/DC (5 A)		
Millivolt Signal Conditioner	857-819			0 ... 200 mV 0 ... 1000 mV		± 100 mV

Output			Special Functions			Configuration					Power	Page
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V	± 10 mA ± 20 mA ± 5 V ± 10 V	x	x	x	x		x	x	x	24 VDC	206
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		x	x		x		x	x		24 VDC	208
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		x	x		x		x	x		24 VDC	210
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		x	x		x		x	x		24 VDC	212
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		x	x		x		x	x		24 VDC	214
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V			x		x		x	x		24 VDC	216

See page 261 for an explanation of the symbols used.

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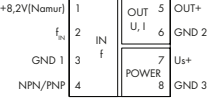
Description	Item No.	Image	Circuit Diagram	Input	Input	Input
 Temperature Signal Conditioners						
Temperature Signal Conditioner for Pt Sensors and Resistance Sensors	857-800			Pt100 Pt200 Pt500 Pt1000	0 ... 1 kΩ 0 ... 4.5 kΩ	2 conductors 3 conductors 4 conductors
Temperature Signal Conditioner for Pt Sensors and Resistance Sensors	857-801			Pt100 Pt200 Pt500 Pt1000	0 ... 1 kΩ 0 ... 4.5 kΩ	2 conductors 3 conductors 4 conductors
Temperature Signal Conditioner for Pt46 Sensors and Cu53 Sensors	857-808			Pt46 Cu53		2 conductors 3 conductors 4 conductors
Temperature Signal Conditioner for Thermocouples	857-810			Type J, K		
Temperature Signal Conditioner for Thermocouples	857-811			Type J, K, E, R, N, S, T, B, S		
Temperature Signal Conditioner for Thermocouples	857-812			Type K, S, B, R		
Loop-Powered RTD Temperature Signal Conditioner	857-815			Pt100 Pt200 Pt500 Pt1000	0 ... 1 kΩ 0 ... 4.5 kΩ	2 conductors 3 conductors 4 conductors
Temperature Signal Conditioner for Ni Sensors	857-818			Ni100 Ni120 Ni200 Ni500 Ni1000		2 conductors 3 conductors 4 conductors
Temperature Signal Conditioner for KTY Sensors	857-820			KTY sensors		2 conductors






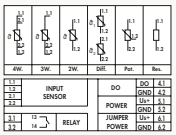

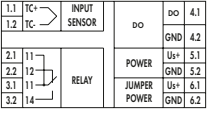

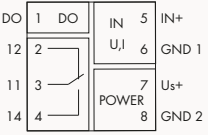
Output		Special Functions				Configuration					Power	Page
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V			x		x					24 VDC	224
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V			x		x		x	x		24 VDC	226
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V					x					24 VDC	228
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V			x		x					24 VDC	230
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V			x		x		x	x		24 VDC	232
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V					x					24 VDC	234
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V					x					Power via output	236
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V			x		x					24 VDC	238
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		x	x		x					24 VDC	240





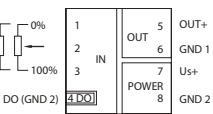
See page 261 for an explanation of the symbols used.

Technical Details

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Frequency Signal Conditioner		Description	Item No.	Image	Circuit Diagram	Input	
Frequency Signal Conditioner	 Frequency Signal Conditioner						
	Frequency Signal Conditioner	857-500			Frequency signals, NAMUR, NPN, or PNP sensors: 0.1 ... 120 kHz		

Threshold Value Switches		Description	Item No.	Image	Circuit Diagram	Input	
Threshold Value Switches	 Threshold Value Switches						  
	RTD Threshold Value Switch	2857-533					
	Thermocouple Threshold Value Switch	2857-534					
	Analog Threshold Value Switch	857-531			0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V 0 ... 15 V 0 ... 30 V	
						± 10 mA ± 20 mA ± 5 V ± 10 V	

Potentiometer Signal Conditioner		Description	Item No.	Image	Circuit Diagram	Input	
Potentiometer Signal Conditioner	 Potentiometer Signal Conditioner						 
	Potentiometer Signal Conditioner	857-809			Potentiometer 0 ... 100 kΩ	10 ... 100 kΩ	

Output		Special Functions				Configuration					Power	Page
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V			x		x		x	x		24 VDC	244

Input	Special Functions					Configuration					Power	Page
0 ... 100 kΩ	Pt100 Pt200 Pt500 Pt1000 Pt5000 Pt10,000 Pt10 ... 20,000	250 VAC 6 A	x		x		x	x	x	24 VDC	218	
	Type J, K, E, N, R, S, T, B, C	250 VAC 6 A	x		x		x	x	x	24 VDC	220	
		250 VAC 6 A	x		x	x	x	x		24 VDC	222	









Output		Special Functions				Configuration					Power	Page
0 ... 10 mA 2 ... 10 mA 0 ... 20 mA 4 ... 20 mA	0 ... 5 V 1 ... 5 V 0 ... 10 V 2 ... 10 V		x	x		x	x	x	x		24 VDC	242

See page 261 for an explanation of the symbols used.

JUMPFLEX® Approvals









857 and 2857 Series

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	cULus	E175199, UL 508
	cULus	E198726, ANSI/ISA 12.12.01
	BV (Bureau Veritas)	40179/A0 BV
	DNV (Det Norske Veritas)	A-13346
	GL (German Lloyd)	44627-07 HH
	NKK (Nippon Kaiji Kyokai)	TA12716M
	Polski Rejestr Statkow	TE/1989/880590/13
	ATEX*	TÜV 14 ATEX 112692X, II 3 G Ex nA IIC T4 Gc
	IECEX*	IECEX TUN 14.0030X, Ex nA IIC T4 Gc

Item No.	Item Description	Ex	PRS	NKK	GL	DNV	BV	UL
Isolation amplifiers								
2857-401	Universal Isolation Amplifier							
857-400	Isolation Amplifier, configurable with Zero/Span Adjustment	■	■	■	■	■	■	■
857-401	Isolation Amplifier, configurable with Digital Output			■	■		■	■
857-402	Universal Isolation Amplifier	■	■					■
857-409	Bipolar Isolation Amplifier	■	■	■	■		■	■
857-411	Isolation Amplifiers, Fixed Setting	■	■	■	■	■	■	■
857-412	Isolation Amplifiers, Fixed Setting	■	■	■	■	■	■	■
857-413	Isolation Amplifiers, Fixed Setting	■	■	■	■	■	■	■
857-414	Isolation Amplifiers, Fixed Setting	■	■	■	■	■	■	■
857-415	Isolation Amplifiers, Fixed Setting	■	■	■	■	■	■	■
857-416	Isolation Amplifiers, Fixed Setting	■	■	■	■	■	■	■
Isolation amplifiers								
857-420	Repeater Power Supply							■
857-421	Repeater Power Supply, HART							■
857-423	Signal Splitter	■	■	■	■	■	■	■
857-424	Signal Splitter, (I,U)							
857-450	Loop-Powered Isolation Amplifier	■	■					■
857-451	Passive Isolator, 1 Channel	■	■	■	■	■	■	■
857-452	Passive Isolator, 2 Channel	■	■	■	■	■	■	■
Current and Voltage Signal Conditioner								
2857-0550	Through-Hole Current Signal Conditioner							
857-550	Current Signal Conditioner	■	■	■	■	■	■	■
857-552	Rogowski Current Signal Conditioner	■	■					
857-560	Voltage Signal Conditioner							
857-569	Power Signal Conditioner							
857-819	Millivolt Signal Conditioner	■	■	■	■	■	■	■

*Available in May 2016

	cULus	E175199, UL 508
	cULus	E198726, ANSI/ISA 12.12.01
	BV (Bureau Veritas)	40179/A0 BV
	DNV (Det Norske Veritas)	A-13346
	GL (German Lloyd)	44627-07 HH
	NKK (Nippon Kaiji Kyokai)	TA12716M
	Polski Rejestr Statkow	TE/1989/880590/13
	ATEX*	TÜV 14 ATEX 112692X, II 3 G Ex nA IIC T4 Gc
	IECEX*	IECEX TUN 14.0030X, Ex nA IIC T4 Gc

Item No.	Item Description	Ex	PRS	NKK	GL	DNV	BV	UL
		Shipping Approvals						
Temperature Signal Conditioners								
857-800	Temperature Signal Conditioner for Pt and Resistance Sensors	■	■	■	■	■	■	■
857-801	Temperature Signal Conditioner for Pt and Resistance Sensors	■	■	■	■	■	■	■
857-810	Temperature Signal Conditioner for Thermocouples	■	■	■	■	■	■	■
857-811	Temperature Signal Conditioner for Thermocouples	■	■	■	■	■	■	■
857-812	Temperature Signal Conditioner for Thermocouples						■	■
857-808	Temperature Signal Conditioner PT46 & Cu53	■	■	■	■		■	■
857-815	Loop-Powered RTD Temperature Signal Conditioner							
857-818	Temperature Signal Conditioner for Ni Sensors	■	■	■	■		■	■
857-820	Temperature Signal Conditioner for KTY Sensors	■	■	■	■		■	■
Threshold Value Switches								
2857-533	RTD Threshold Value Switch							
2857-534	Thermocouple Threshold Value Switch							
857-531	Analog Threshold Value Switch			■	■	■	■	■
Special Functions								
857-500	Frequency Signal Conditioner	■	■	■	■		■	■
857-809	Potentiometer Signal Conditioner			■	■		■	■
Accessories								
857-979	Supply and Through Module	■	■	■	■		■	■
857-980	Interface Adapter for System Wiring			■	■	■	■	■

*Available in May 2016

JUMPFLEX® Signal Conditioners

Universal Isolation Amplifier

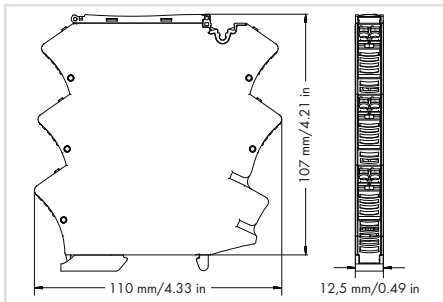
2857 Series



JUMPFLEX® Isolation Amplifier, bipolar current and voltage input signal, bipolar current and voltage output signal, digital output, configuration via software/display, supply voltage: 24 VDC, 12.5 mm wide

Item No.	Pack. Unit
2857-401	1

1.1	U+	INPUT VOLTAGE	OUTPUT	OUT+	4.1
1.2	U-			OUT-	4.2
2.1	I+	INPUT CURRENT	POWER	Us+	5.1
2.2	I-			GND	5.2
3.1	DO (GND)	DO	JUMPER POWER	Us+	6.1
3.2	DI (GND)	DI (HOLD)		GND	6.2



Short description:

The 2857-401 Universal Isolation Amplifier converts, amplifies, filters and electrically isolates analog signals.

Features:

- Analog unipolar/bipolar signals at input/output
- A digital signal output reacts to configured measuring range limits (switching ON/OFF delay and threshold value switch function configurable with up to two threshold values).
- A digital HOLD input freezes the output signal.
- Clipping capability provides the analog signal limitation to output end values.
- Adjustable software/hardware filter
- Input/Output response simulation via configuration display
- Safe 3-way isolation with 4 kV test voltage acc. EN 61140

Special Functions



Configuration via



Accessories, see page 258

Technical Data

Configuration

Configuration

DIP switch, Interface configuration software, Interface configuration app, configuration display

Input

Input signal

Current:
 $\pm 1 \text{ mA}$, $0 \dots 1 \text{ mA}$,
 $\pm 10 \text{ mA}$, $0 \dots 10 \text{ mA}$, $2 \dots 10 \text{ mA}$,
 $\pm 20 \text{ mA}$, $0 \dots 20 \text{ mA}$, $4 \dots 20 \text{ mA}$,
 $\pm 100 \text{ mA}$, $0 \dots 100 \text{ mA}^*$
 Voltage:
 $\pm 1 \text{ V}$, $0 \dots 1 \text{ V}$,
 $\pm 10 \text{ V}$, $0 \dots 10 \text{ V}$, $2 \dots 10 \text{ V}$,
 $\pm 30 \text{ V}$, $0 \dots 30 \text{ V}$,
 $\pm 100 \text{ V}$, $0 \dots 100 \text{ V}$,
 $\pm 200 \text{ V}$, $0 \dots 220 \text{ V}^*$

Input resistance

$\geq 1 \text{ M}\Omega$ (U input); $\leq 50 \Omega$ (I input)

Max. operating frequency

10 kHz / 5 kHz / 100 Hz / 30 Hz * (configurable via DIP switch)

Input – Digital

HOLD Signal

11.8 V ... U_s

Output

Output signal

Current

$\pm 10 \text{ mA}$, $0 \dots 10 \text{ mA}$, $2 \dots 10 \text{ mA}$,
 $\pm 20 \text{ mA}$, $0 \dots 20 \text{ mA}$, $4 \dots 20 \text{ mA}^*$

Voltage

$\pm 5 \text{ V}$, $0 \dots 5 \text{ V}$, $1 \dots 5 \text{ V}$,
 $\pm 10 \text{ V}$, $0 \dots 10 \text{ V}$, $2 \dots 10 \text{ V}^*$

Load impedance

Current: $\leq 600 \Omega$;
 Voltage: $\geq 1 \text{ k}\Omega$

Overload capacity

-250 V, +250 V / -120 mA, +120 mA

Output – Digital

Max. switching voltage

Supply voltage applied -0.3 V

Max. continuous current (I_{DO})

100 mA (no internal limitation)

General Specifications

Nominal supply voltage U_s

24 VDC

Supply voltage range

$U_s - 30\% \dots +30\%$

Current consumption at 24 VDC

$\leq 70 \text{ mA}$ (+ I_{DO})

Response time (T_{10-90})

< 1 ms

Transmission Error

$\leq 0.1\%$ of the full scale value

Temperature coefficient

$\leq 0.01\% / K$

Conformity marking

CE

Standards/Approvals

DIN EN 60664-1;
 Safe isolation acc. DIN EN 61140

Environmental Requirements

Ambient operating temperature

-40 ... +70 °C

Storage temperature

-40 ... +85 °C

Safety and Protection

Test voltage

4 kV AC, 50 Hz, 1 min.

Connection and Type of Mounting

Wire connection

Push-in CAGE CLAMP® (picoMAX® 5.0)

Conductor range

Solid/fine-stranded:
 0.2 ... 2.5 mm² / 24 ... 12 AWG

Strip length

9 ... 10 mm / 0.35 ... 0.39 in.

Dimensions and Weight

Dimensions (mm) W x H x D

12.5 x 107 x 110, Height from upper-edge of DIN 35 rail

Weight

86 g

(*Additional setting options via interface configuration software or interface configuration app)

2857-401

DIP Switch Adjustability

● = ON

DIP Switch S1

Input													
1	Signal	2	Polarity	3	4	5	Range / mA	Range / V	6	Inverted Characteristic	7	8	Limit Frequency
	Current		Unipolar				0 ... 20	0 ... 10		Not inverted			10 kHz
●	Voltage	●	Bipolar *	●			0 ... 1	0 ... 1	●	Inverted	●		5 kHz
					●		0 ... 5	0 ... 5				●	100 Hz
				●	●		0 ... 10	1 ... 5				●	30 Hz
						●	2 ... 10	2 ... 10					
				●		●	4 ... 20	0 ... 30					
					●	●	0 ... 50	0 ... 100					
				●	●	●	0 ... 100	0 ... 220					

DIP Switch S1

DIP Switch S2

Output				Output			
9	Signal	10	Polarity	1	2	Range / mA	Range / V
	Current		Unipolar			0 ... 20	0 ... 10
●	Voltage	●	Bipolar *	●		4 ... 20	2 ... 10
					●	0 ... 10	0 ... 5
				●	●	2 ... 10	1 ... 5

DIP Switch S2

Output						Digital Output (DO)		
3	4	Measuring Range Underflow		Measuring Range Overflow		5	6	
		Lower limit of output range -5% **		Upper limit of output range +2.5% **				Off
●		Lower limit of output range		Upper limit of output range +2.5%		●		DO U _s switching
	●	Lower limit of output range		Upper limit of output range			●	DO GND switching
●	●	Lower limit of output range -5%		Upper limit of output range +5%		●	●	Off

* Bipolar only applies to ranges starting with 0.

** acc. to NAMUR NE 43

JUMPFLEX® Signal Conditioners

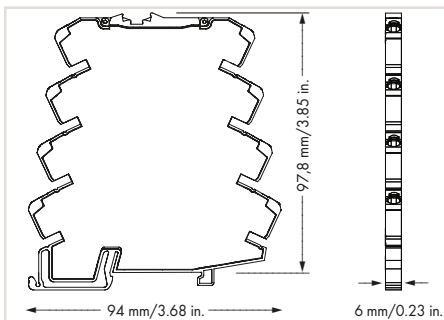
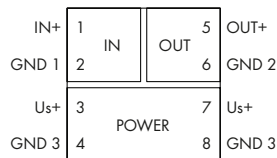
Isolation Amplifier, Configurable with Zero/Span Adjustment

857 Series



JUMPFLEX® Isolation Amplifier, current and voltage input signal, current and voltage output signal, zero/span adjustment, configuration via DIP switch, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-400	1



Short description:

The 857-400 configurable Isolation Amplifier is used to convert, amplify, filter and electrically isolate standard analog signals.

Features:

- Zero/span adjustment across the entire measuring range
- Calibrated scale switching
- Switchable max. operating frequency
- Safe 3-way isolation with 2.5 kV test voltage acc. EN 61140

Special Functions



Configuration via



Accessories,
see page 258

Technical Data

Configuration

Configuration

DIP switch

Input

Input signal

0 ... 20 mA, 4 ... 20 mA,
0 ... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V
(calibrated switchable)

Input resistance

≤ 50 Ω (In = mA)
≥ 100 kΩ (In = V)

Output

Output signal

0 ... 20 mA, 4 ... 20 mA,
0 ... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V
(calibrated switchable)

Load impedance

≤ 600 Ω (Out = mA)
≥ 2 kΩ (Out = V)

General Specifications

Nominal supply voltage U_s

24 VDC

Supply voltage range

U_s -30 % ... +30 %

Current consumption at 24 VDC

≤ 25 mA

Max. operating frequency

100 Hz / 5 kHz
(switchable via DIP switch)

Response time (T_{10-90})

< 3.5 ms / < 100 μs

Transmission Error

≤ 0.1 % of the full scale value

Temperature coefficient

≤ 0.01 % / K

Zero/span adjustment

± 3% of upper range value

Conformity marking

CE

Environmental Requirements

Ambient operating temperature

-25 ... +70 °C

Storage temperature

-40 ... +85 °C

Safety and Protection

Test voltage

2.5 kV AC, 50 Hz, 1 min

(input/output/supply)

Connection and Type of Mounting

Wire connection

Push-in CAGE CLAMP®

Conductor range

Solid

0.08 ... 2.5 mm² / 28 ... 14 AWG

Fine-stranded

0.34 ... 2.5 mm² / 22 ... 14 AWG

Strip length

9 ... 10 mm / 0.35 ... 0.39 in.

Dimensions and Weight

Dimensions (mm) W x H x D

6 x 97.8 x 94, Height from upper-edge of DIN 35 rail

Weight

36.8 g

For additional approvals, see page 180.

857-400

DIP Switch Adjustability

● = ON

Dip Switch S1 (2-fold)		Dip Switch S2 (6-fold)					Max. Operating Frequency			
1	2	1	2	3	4	5		6		
●		0 ... 20 mA						0 ... 20 mA		5 kHz
						●		4 ... 20 mA	●	100 Hz
			●	●				0 ... 10 V		
			●	●		●		2 ... 10 V		
			●	●	●			0 ... 5 V		
			●	●	●	●		1 ... 5 V		
●		4 ... 20 mA					●	0 ... 20 mA		
							●	4 ... 20 mA		
			●	●				0 ... 10 V		
			●	●				2 ... 10 V		
			●	●	●		●	0 ... 5 V		
			●	●	●			1 ... 5 V		
●		0 ... 10 V					●	0 ... 20 mA		
						●		4 ... 20 mA		
			●	●				0 ... 10 V		
			●	●		●		2 ... 10 V		
			●	●	●			0 ... 5 V		
			●	●	●	●		1 ... 5 V		
●		2 ... 10 V					●	0 ... 20 mA		
							●	4 ... 20 mA		
			●	●				0 ... 10 V		
			●	●				2 ... 10 V		
			●	●	●		●	0 ... 5 V		
			●	●	●			1 ... 5 V		
		0 ... 5 V					●	0 ... 20 mA		
						●		4 ... 20 mA		
			●	●				0 ... 10 V		
			●	●		●		2 ... 10 V		
			●	●	●			0 ... 5 V		
			●	●	●	●		1 ... 5 V		
		1 ... 5 V					●	0 ... 20 mA		
							●	4 ... 20 mA		
			●	●				0 ... 10 V		
			●	●				2 ... 10 V		
			●	●	●		●	0 ... 5 V		
			●	●	●			1 ... 5 V		

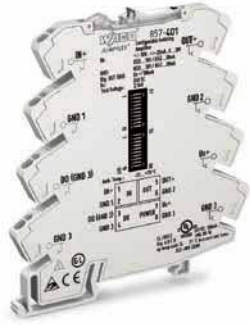
Default Settings

Input	0 ... 20 mA
Output	0 ... 20 mA
Max. Operating Frequency	5 kHz

JUMPFLEX® Signal Conditioners

Isolation Amplifier, Configurable with Digital Output

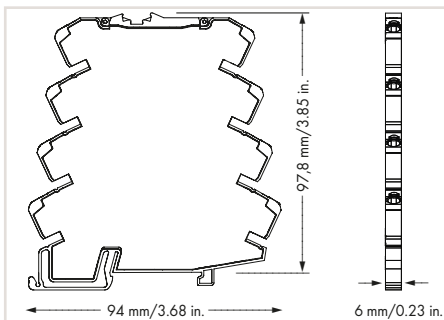
857 Series



JUMPFLEX® Isolation Amplifier, current and voltage input signal, current and voltage output signal, digital output, configuration via software, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-401	1

IN+	1	IN	5	OUT+
GND 1	2	U,I	6	GND 2
DO	3	DO	7	Us+
GND 3	4	POWER	8	GND 3



Short description:

The software-configurable 857-401 Isolation Amplifier converts analog signals and amplifies, filters and electrically isolates analog standard signals.

Features:

- PC configuration interface
- Digital switching output
- Calibrated scale switching
- Analog, unipolar and bipolar, standard signals at input
- Clipping capability provides the analog signal limitation to output end values.
- Safe 3-way isolation with 2.5 kV test voltage acc. EN 61140

Special Functions



Configuration via



Accessories,
see page 258

Technical Data

Configuration

Configuration

DIP switch, interface configuration software, interface configuration app

Input

Input signal

-20 ... +20 mA, -10 ... +10 V, 0 ... +30 V *

Input resistance

≤ 200 Ω (I input)
> 100 kΩ (U input)

Max. input signal

31.2 V (U_{IN}) 100 mA (I_{IN})

Output

Output signal

0 ... 20 mA, 4 ... 20 mA, 0 ... 5 V, 1 ... 5 V,
0 ... 10 V, 2 ... 10 V, 0 ... 10 mA,
2 ... 10 mA *

Load impedance

≤ 600 Ω (Out = mA)
≥ 2 kΩ (Out = V)

General Specifications

Nominal supply voltage U_s

24 VDC

Supply voltage range

U_s -30 % ... +30 %

Current consumption at 24 VDC

≤ 40 mA

Max. measuring span

1 V, 2 mA

Max. measuring span

30 V, 40 mA

Transmission Error

≤ 0.1 % of the full scale value

Temperature coefficient

≤ 0.01 % / K

Conformity marking

CE

Environmental Requirements

Ambient operating temperature

-25 ... +70 °C

Storage temperature

-40 ... +85 °C

Safety and Protection

Test voltage

2.5 kV AC, 50 Hz, 1 min

(input/output/supply)

Connection and Type of Mounting

Wire connection

Push-in CAGE CLAMP®

Conductor range

Solid

0.08 ... 2.5 mm² / 28 ... 14 AWG

Fine-stranded

0.34 ... 2.5 mm² / 22 ... 14 AWG

Strip length

9 ... 10 mm / 0.35 ... 0.39 in.

Dimensions and Weight

Dimensions (mm) W x H x D

6 x 97.8 x 94, Height from upper-edge of DIN 35 rail

Weight

42 g

For additional approvals, see page 180.

(*Additional setting options via interface configuration software or interface configuration app)

JUMPFLEX® Signal Conditioners

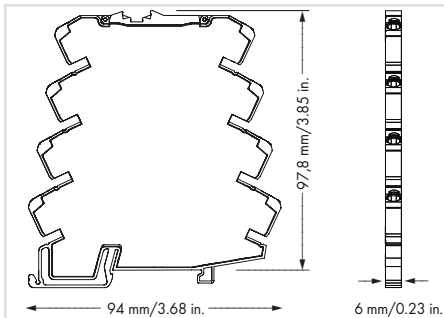
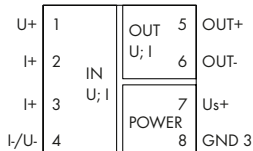
Universal Isolation Amplifier

857 Series



JUMPFLEX® Isolation Amplifier, current and voltage input signal, bipolar current and voltage output signal, zero/span adjustment, configuration via DIP switch, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-402	1



Short description:

The universal 857-402 Isolation Amplifier converts unipolar and bipolar standard signals and amplifies, filters and electrically isolates analog standard signals.

Features:

- Overload protection of current input using reversible fuse
- Zero/span adjustment across the entire measuring range (slide switch)
- Calibrated scale switching for all 456 signals
- Standard analog unipolar and bipolar signals, input/output
- Switchable max. operating frequency
- Clipping capability provides the analog signal limitation to output end values.
- Safe 3-way isolation with 2.5 kV test voltage acc. EN 61140

Special Functions



Configuration via



Accessories, see page 258

Technical Data

Configuration

Configuration

DIP switch, push/slide switch

Input

Input signal

$\pm 60 \text{ mV}$, $0 \dots 60 \text{ mV}$, $\pm 100 \text{ mV}$,
 $0 \dots 100 \text{ mV}$, $\pm 150 \text{ mV}$, $0 \dots 150 \text{ mV}$,
 $\pm 300 \text{ mV}$, $0 \dots 300 \text{ mV}$, $\pm 500 \text{ mV}$,
 $0 \dots 500 \text{ mV}$, $\pm 1 \text{ V}$, $0 \dots 1 \text{ V}$, $\pm 5 \text{ V}$,
 $0 \dots 5 \text{ V}$, $1 \dots 5 \text{ V}$, $\pm 10 \text{ V}$, $0 \dots 10 \text{ V}$,
 $2 \dots 10 \text{ V}$, $\pm 100 \text{ V}$, $0 \dots 100 \text{ V}$
 $\pm 200 \text{ V}$, $0 \dots 200 \text{ V}$

Voltage

Current

$\pm 0.3 \text{ mA}$, $0 \dots 0.3 \text{ mA}$, $\pm 1 \text{ mA}$,
 $0 \dots 1 \text{ mA}$, $\pm 5 \text{ mA}$, $0 \dots 5 \text{ mA}$,
 $\pm 10 \text{ mA}$, $0 \dots 10 \text{ mA}$, $2 \dots 10 \text{ mA}$,
 $\pm 20 \text{ mA}$, $0 \dots 20 \text{ mA}$, $4 \dots 20 \text{ mA}$,
 $\pm 50 \text{ mA}$, $0 \dots 50 \text{ mA}$,
 $\pm 100 \text{ mA}$, $0 \dots 100 \text{ mA}$

Input resistance

approx. $1 \text{ M}\Omega$ (U input)
 $\leq 5 \text{ mA}$ approx. 100Ω ;
 $> 5 \text{ mA}$ approx. 10Ω (I input)

Output

Output signal

Voltage

$\pm 5 \text{ V}$, $0 \dots 5 \text{ V}$, $1 \dots 5 \text{ V}$,
 $\pm 10 \text{ V}$, $0 \dots 10 \text{ V}$, $2 \dots 10 \text{ V}$

Current

$\pm 10 \text{ mA}$, $0 \dots 10 \text{ mA}$, $2 \dots 10 \text{ mA}$,
 $\pm 20 \text{ mA}$, $0 \dots 20 \text{ mA}$, $4 \dots 20 \text{ mA}$

Load impedance

$\leq 600 \Omega$ (Out = mA)
 $\geq 2 \text{ k}\Omega$ (Out = V)

General Specifications

Nominal supply voltage U_s

24 VDC

Supply voltage range

$U_s - 30\% \dots +30\%$

Current consumption at 24 VDC

$\leq 40 \text{ mA}$

Max. operating frequency

100 Hz / 5 kHz (switchable via DIP switch)

Response time (T_{10-90})

$< 3.5 \text{ ms}$ / $< 100 \mu\text{s}$

Transmission Error

$\leq 0.08\%$ of upper-range value

Temperature coefficient

$\leq 0.01\%$ / K

Conformity marking

CE

Environmental Requirements

Ambient operating temperature

$-25 \dots +70 \text{ }^\circ\text{C}$

Storage temperature

$-40 \dots +85 \text{ }^\circ\text{C}$

Safety and Protection

Test voltage

(input/output/supply)

2.5 kV AC, 50 Hz, 1 min

Connection and Type of Mounting

Wire connection

Push-in CAGE CLAMP®

Conductor range

Solid

$0.08 \dots 2.5 \text{ mm}^2$ / 28 ... 14 AWG

Fine-stranded

$0.34 \dots 2.5 \text{ mm}^2$ / 22 ... 14 AWG

Strip length

$9 \dots 10 \text{ mm}$ / $0.35 \dots 0.39 \text{ in.}$

Dimensions and Weight

Dimensions (mm) W x H x D

$6 \times 97.8 \times 94$, Height from upper-edge of DIN 35 rail

Weight

54.3 g

For additional approvals, see page 180.

857-402

DIP Switch Adjustability

● = ON

DIP Switch S1

Input Signal Ranges						Zero/Span Adjustment		Max. Operating Frequency	
1	2	3	4	5	6	7		8	
							Inactive		5 kHz
				●		●	Active	●	100 Hz
				●	●				
			●						
			●		●				
			●	●					
			●	●	●				
	●								
	●			●					
	●		●	●					
	●	●							
	●	●		●					
	●	●	●						
	●	●	●	●					
●									
●				●					
●			●						
●			●	●					
●	●								
●	●			●					
●	●	●							
●	●	●	●						
●	●	●	●	●					

DIP Switch S1

Input Signal Ranges					
1	2	3	4	5	6
	●	●			
	●	●			●
	●	●		●	
	●	●		●	●
	●	●	●		
	●	●	●		●
	●	●	●	●	
	●	●	●	●	●
●					
●					●
●				●	
●				●	●
●			●		
●			●		●
●		●			
●		●		●	
●	●	●			
●	●	●	●		

More information on measurement range setting is available in 857-402 instruction leaflet.

DIP Switch S2

Output Signal Ranges					Reserve	Clipping		Rocker Switch Lock	
1	2	3	4	5	6	7		8	
							inactive (analog response)		switched off
		●				●	active (limiting response)	●	switched on
		●		●					
		●	●						
	●								
	●			●					
	●	●							
	●	●		●					
	●	●	●						
●									
●				●					
●			●						

*Default setting

Input	± 10 V
Output	± 10 V
Max. operating frequency	5 kHz
*The input and output range DIP switches must be readjusted when changing the default setting.	

JUMPFLEX® Signal Conditioners

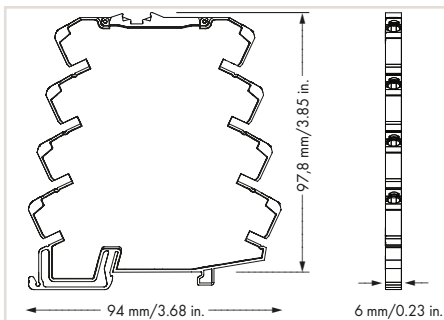
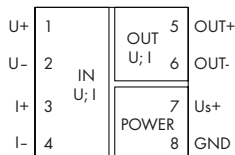
Bipolar Isolation Amplifier, Configurable with Zero/Span Adjustment

857 Series



JUMPFLEX® Isolation Amplifier, bipolar current and voltage input signal, bipolar current and voltage output signal, zero/span adjustment, configuration via DIP switch, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-409	1



Short description:

The 857-409 Bipolar Isolation Amplifier converts unipolar and bipolar standard signals and amplifies, filters and electrically isolates analog standard signals.

Features:

- Overload protection of current input using reversible fuse
- Zero/span adjustment across the entire measuring range
- Calibrated scale switching
- Standard analog unipolar and bipolar signals, input/output
- Switchable max. operating frequency
- Safe 3-way isolation with 2.5 kV test voltage acc. to EN 61140

Special Functions



Configuration via



Accessories, see page 258

Technical Data

Configuration	
Configuration	DIP switch
Input	
Input signal	
Voltage	± 5 V, 0 ... 5 V, 1 ... 5 V, ± 10 V, 0 ... 10 V, 2 ... 10 V
Current	± 10 mA, 0 ... 10 mA, 2 ... 10 mA, ± 20 mA, 0 ... 20 mA, 4 ... 20 mA
Input resistance	approx. 1 MΩ (U input) approx. 50 Ω (I input)
Output	
Output signal	
Voltage	± 5 V, 0 ... 5 V, 1 ... 5 V, ± 10 V, 0 ... 10 V, 2 ... 10 V
Current	± 10 mA, 0 ... 10 mA, 2 ... 10 mA, ± 20 mA, 0 ... 20 mA, 4 ... 20 mA
Load impedance	≤ 600 Ω (Out = mA) ≥ 2 kΩ (Out = V)
Overload capacity	32 V / 50 mA
Residual ripple	< 10 mV rms
General Specifications	
Nominal supply voltage U_s	24 VDC
Supply voltage range	U_s -30 % ... +30 %
Current consumption at 24 VDC	≤ 25 mA
Max. operating frequency	100 Hz / 5 kHz (switchable via DIP switch)
Response time (T_{10-90})	< 3.5 ms / < 60 μs
Transmission Error	≤ 0.1 % of the full scale value
Temperature coefficient	≤ 0.01 % / K
Zero/span adjustment	± 5 % of upper-range value (adjustable via zero/span potentiometer)
Conformity marking	CE
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-40 ... +85 °C
Safety and Protection	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min
Connection and Type of Mounting	
Wire connection	Push-in CAGE CLAMP®
Conductor range	
Solid	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Fine-stranded	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 in.
Dimensions and Weight	
Dimensions (mm) W x H x D	6 x 97.8 x 94, Height from upper-edge of DIN 35 rail
Weight	42 g

For additional approvals, see page 180.

857-409

DIP Switch Adjustability

● = ON

Dip Switch S1 (4-fold)

Dip Switch S2 (6-fold)

Input Signal				Output Signal					Max. Operating Frequency				
1	2	3	4	1	2	3	4	5	6				
●								●		± 20 mA	± 20 mA	5 kHz	
●	●						●	●		± 10 mA	± 10 mA	●	100 Hz
●					●	●		●		± 10 V	± 10 V		
●	●				●	●	●	●		± 5 V	± 5 V		
										0 ... 20 mA	0 ... 20 mA		
		●							●	4 ... 20 mA	4 ... 20 mA		
	●						●			0 ... 10 mA	0 ... 10 mA		
	●	●					●		●	2 ... 10 mA	2 ... 10 mA		
					●	●				0 ... 10 V	0 ... 10 V		
		●			●	●			●	2 ... 10 V	2 ... 10 V		
	●				●	●	●			0 ... 5 V	0 ... 5 V		
	●	●			●	●	●		●	1 ... 5 V	1 ... 5 V		

Default Settings

Input	± 10 V
Output	± 10 V
Max. Operating Frequency	5 kHz

JUMPFLEX® Signal Conditioners

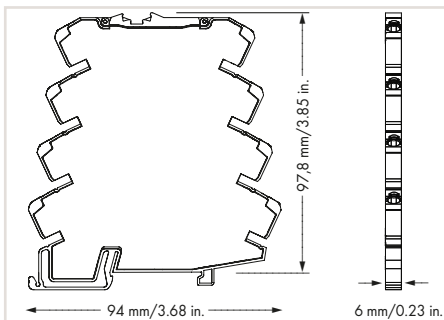
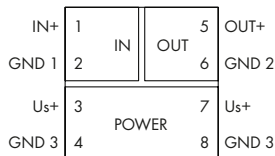
Isolation Amplifiers, Fixed Setting for Voltage or Current Signals

857 Series



JUMPFLEX® Isolation Amplifier, supply voltage: 24 VDC, 6 mm wide

	Item No.	Pack. Unit
	857-411	1
	857-412	1
See tech. data	857-413	1
	857-414	1
	857-415	1
	857-416	1



Short description:

The pre-configured isolation amplifiers convert, amplify, filter and electrically isolate analog standard signals.

Features:

- Input/Output: current/voltage signal
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Technical Data

Configuration	
Configuration	-
Input	
Input signal	857-411: 0(4) ... 20 mA 857-412: 0(2) ... 10 V 857-413: 0 ... 10 V 857-414: 0 ... 10 V 857-415: 0 ... 20 mA 857-416: 4 ... 20 mA
Input resistance	≤ 50 Ω (In = mA) ≥ 100 kΩ (In = V)
Output	
Output signal	857-411: 0(4) ... 20 mA 857-412: 0(2) ... 10 V 857-413: 0 ... 20 mA 857-414: 4 ... 20 mA 857-415: 0 ... 10 V 857-416: 0 ... 10 V
Load impedance	≤ 600 Ω (Out = mA) ≥ 2 kΩ (Out = V)
Overload capacity	30 V / 50 mA
General Specifications	
Nominal supply voltage U_s	24 VDC
Supply voltage range	U_s -30 % ... +30 %
Current consumption at 24 VDC	≤ 25 mA
Max. operating frequency	100 Hz
Response time (T_{10-90})	< 3.5 ms
Transmission Error	≤ 0.1 % of the full scale value
Temperature coefficient	≤ 0.01 % / K
Conformity marking	CE
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-40 ... +85 °C
Safety and Protection	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min
Connection and Type of Mounting	
Wire connection	Push-in CAGE CLAMP®
Conductor range	
Solid	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Fine-stranded	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 in.
Dimensions and Weight	
Dimensions (mm) W x H x D	6 x 97.8 x 94, Height from upper-edge of DIN 35 rail
Weight	49.2 g

For additional approvals, see page 180.

JUMPFLEX® Signal Conditioners

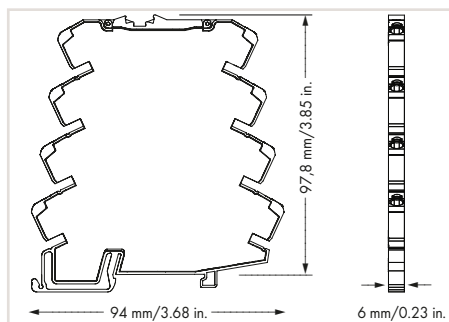
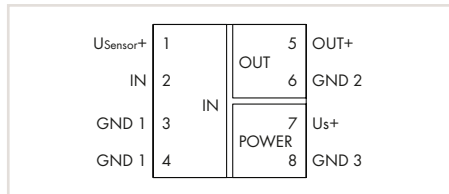
Repeater Power Supply, configurable with Current and Voltage Output

857 Series



JUMPFLEX® Isolation Amplifier, current input signal, current and voltage output signal, configuration via DIP switch, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-420	1



Short description:

The 857-420 Repeater Power Supply links 2- or 3-wire transmitters located in the field. It provides the power required and transmits the analog signals in an electrically isolated way.

Features:

- Supplies SMART transmitters
- Calibrated scale switching
- Safe 3-way isolation with 2.5 kV test voltage acc. to EN 61140

Technical Data

Configuration

Configuration

DIP switch

Input

Input signal

0 ... 20 mA, 4 ... 20 mA
(calibrated switchable)

Input resistance

≤ 50 Ω

Transmitter supply

U_v = 18 V at 30 mA

Output

Output signal

0 ... 20 mA, 4 ... 20 mA,
0 ... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V
(calibrated switchable)

Load impedance

≤ 600 Ω (Out = mA)
≥ 2 kΩ (Out = V)

Offset

< 20 μA / < 10 mV

Residual ripple

< 10 mV rms

General Specifications

Nominal supply voltage U_S

24 VDC

Supply voltage range

U_S -30 % ... +30 %

Current consumption at 24 VDC

≤ 45 mA

Max. operating frequency

100 Hz

Response time (T₁₀₋₉₀)

< 3.5 ms

Transmission Error

≤ 0.1 % of the full scale value

Temperature coefficient

≤ 0.01 % / K

Conformity marking

CE

Environmental Requirements

Ambient operating temperature

-25 ... +70 °C

Storage temperature

-40 ... +85 °C

Safety and Protection

Test voltage

2.5 kV AC, 50 Hz, 1 min

(input/output/supply)

Connection and Type of Mounting

Wire connection

Push-in CAGE CLAMP®

Conductor range

Solid

0.08 ... 2.5 mm² / 28 ... 14 AWG

Fine-stranded

0.34 ... 2.5 mm² / 22 ... 14 AWG

Strip length

9 ... 10 mm / 0.35 ... 0.39 in.

Dimensions and Weight

Dimensions (mm) W x H x D

6 x 97.8 x 94, Height from upper-edge of DIN 35 rail

Weight

46.7 g

For additional approvals, see page 180.

Configuration via



Accessories,
see page 258

857-420

DIP Switch Adjustability

● = ON

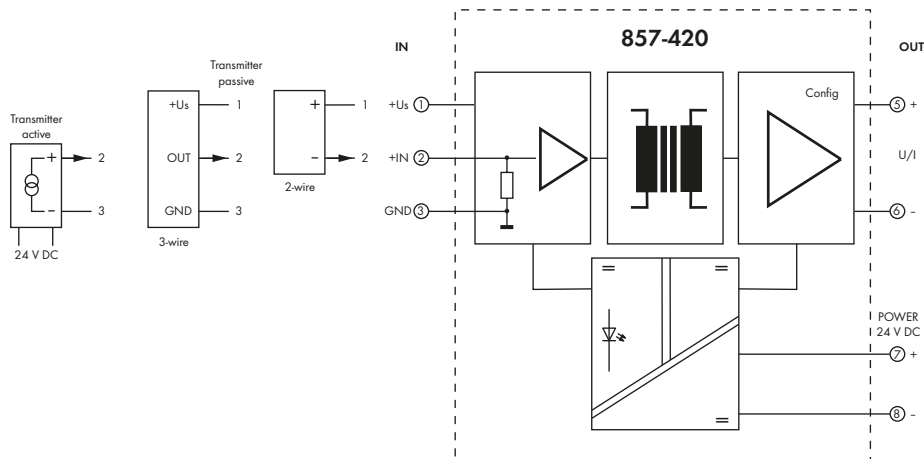
Dip Switch S1 (6-fold)

						Input Signal	Output Signal
1	2	3	4	5	6		
					n.c.	0 ... 20 mA	0 ... 20 mA
			●		n.c.	0 ... 20 mA	4 ... 20 mA
●	●				n.c.	0 ... 20 mA	0 ... 10 V
●	●		●		n.c.	0 ... 20 mA	2 ... 10 V
●	●	●			n.c.	0 ... 20 mA	0 ... 5 V
●	●	●	●		n.c.	0 ... 20 mA	1 ... 5 V
				●	n.c.	4 ... 20 mA	0 ... 20 mA
					n.c.	4 ... 20 mA	4 ... 20 mA
●	●			●	n.c.	4 ... 20 mA	0 ... 10 V
●	●				n.c.	4 ... 20 mA	2 ... 10 V
●	●	●		●	n.c.	4 ... 20 mA	0 ... 5 V
●	●	●			n.c.	4 ... 20 mA	1 ... 5 V

Default Settings

Input	0 ... 20 mA
Output	0 ... 20 mA
DIP 6	n.c.

Connection assignment



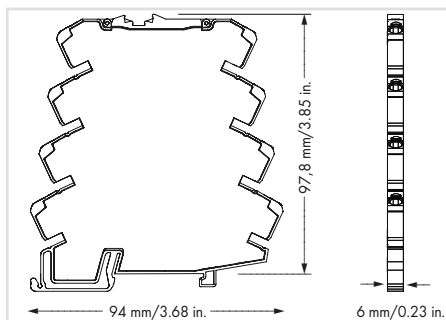
JUMPFLEX® Signal Conditioners Repeater Power Supply, HART 857 Series



JUMPFLEX® Isolation Amplifier, current input signal, current output signal, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-421	1

U _{Sensor+}	1	IN	5	OUT +
IN	2		6	GND 2
GND 1	3	POWER	7	U _{S+}
GND 1	4		8	GND 3



Short description:

The 857-421 HART Repeater Power Supply links SMART transmitters located in the field. It provides the power required and transmits the analog signals in an electrically isolated way.

Features:

- HART communication
- Supplies SMART transmitters
- Safe 3-way isolation with 2.5 kV test voltage acc. to EN 61140

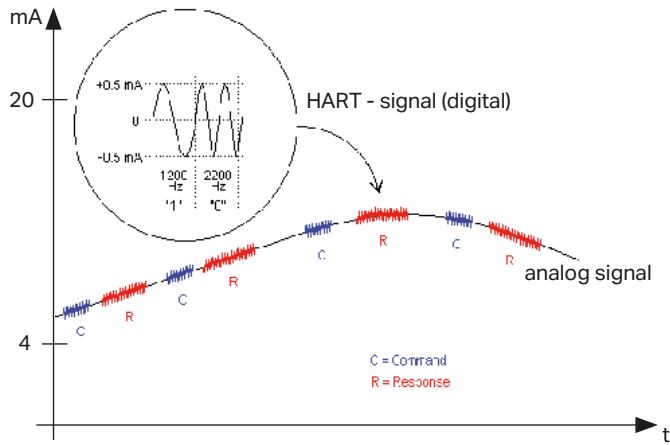
Technical Data

Input	
Input signal	4 ... 20 mA (with superimposed HART signal)
Input resistance	≤ 50 Ω
Transmitter supply	U _v = 18 V at 30 mA
Max. input current	Max. power supply
Output	
Output signal	4 ... 20 mA (with superimposed HART signal)
Load impedance	230 Ω ... 600 Ω
Offset	< 20 μA
Residual ripple	< 10 mV rms
General Specifications	
Nominal supply voltage U _s	24 VDC
Supply voltage range	U _s -30 % ... +30 %
Current consumption at 24 VDC	≤ 45 mA
Max. operating frequency	100 Hz / ≥ 2.5 kHz HART signal
Response time (T ₁₀₋₉₀)	< 3.5 ms
Transmission Error	≤ 0.1 % of the full scale value
Temperature coefficient	≤ 0.01 % / K
Conformity marking	CE
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-40 ... +85 °C
Safety and Protection	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min
Connection and Type of Mounting	
Wire connection	Push-in CAGE CLAMP®
Conductor range	
Solid	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Fine-stranded	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 in.
Dimensions and Weight	
Dimensions (mm) W x H x D	6 x 97.8 x 94, Height from upper-edge of DIN 35 rail
Weight	47.8 g

For additional approvals, see page 180.

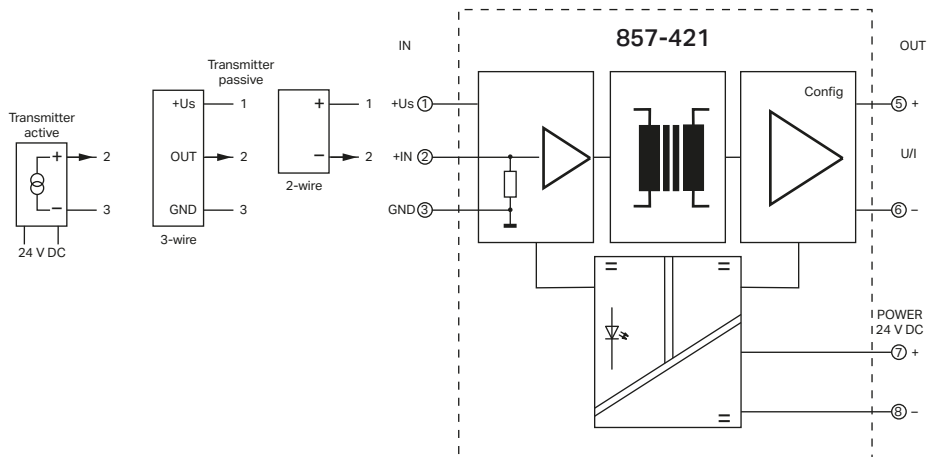
857-421

Simultaneous transmission of analog and digital signals



3

Connection assignment



JUMPFLEX® Signal Conditioners

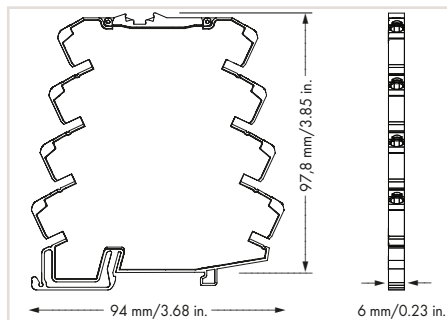
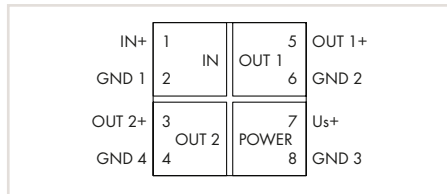
Signal Splitter with 2 Configurable Current Outputs

857 Series



JUMPFLEX® Isolation Amplifier, current and voltage input signal, 2 x current output signal, configuration via DIP switch, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-423	1



Short description:
The 857-423 Signal Splitter converts, amplifies, filters and electrically isolates analog standard signals.

Features:

- Two configurable current outputs
- Calibrated scale switching
- Switchable max. operating frequency
- Safe 4-way isolation with 2.5 kV test voltage per EN 61140

Technical Data

Configuration

Configuration

DIP switch

Input

Input signal

0 ... 20 mA, 4 ... 20 mA,
0 ... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V
(calibrated switchable)

Input resistance

≤ 50 Ω (In = mA)
≥ 100 kΩ (In = V)

Output

Output signal

2 x 0(4) ... 20 mA
(calibrated switchable)

Load impedance

2 x 300 Ω

General Specifications

Nominal supply voltage U_s

24 VDC

Supply voltage range

$U_s -30\% \dots +30\%$

Current consumption at 24 VDC

≤ 35 mA

Max. operating frequency

100 Hz / 1 kHz (configurable via DIP switch)

Response time (T_{10-90})

< 3.5 ms / < 300 μs

Transmission Error

≤ 0.1 % of the full scale value

Temperature coefficient

≤ 0.01 % / K

Conformity marking

CE

Environmental Requirements

Ambient operating temperature

-25 ... +70 °C

Storage temperature

-40 ... +85 °C

Safety and Protection

Test voltage

(input/output/supply)

2.5 kV AC, 50 Hz, 1 min

Connection and Type of Mounting

Wire connection

Push-in CAGE CLAMP®

Conductor range

Solid

0.08 ... 2.5 mm² / 28 ... 14 AWG

Fine-stranded

0.34 ... 2.5 mm² / 22 ... 14 AWG

Strip length

9 ... 10 mm / 0.35 ... 0.39 in.

Dimensions and Weight

Dimensions (mm) W x H x D

6 x 97.8 x 94, Height from upper-edge of DIN 35 rail

Weight

40.6 g

For additional approvals, see page 180.

Configuration via



Accessories,
see page 258

857-423**DIP Switch Adjustability**

● = ON

Dip Switch S1 (6-fold)

Input Signal			Max. Operating Frequency	Output Signal 1		Output Signal 2	
1	2	3	4	5	6	7	8
●			0 ... 20 mA	1 kHz	0 ... 20 mA		0 ... 20 mA
●		●	4 ... 20 mA	100 Hz	4 ... 20 mA	●	4 ... 20 mA
	●		0 ... 10 V				
	●	●	2 ... 10 V				
			0 ... 5 V				
		●	1 ... 5 V				

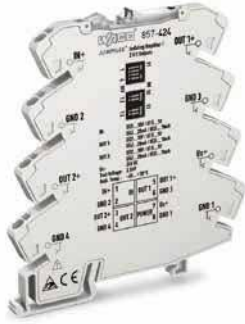
Default Settings

Input	0 ... 20 mA
Output 1	0 ... 20 mA
Output 2	0 ... 20 mA
Max. Operating Frequency	1 kHz

JUMPFLEX® Signal Conditioners

Signal Splitter with 2 Configurable Voltage and Current Outputs

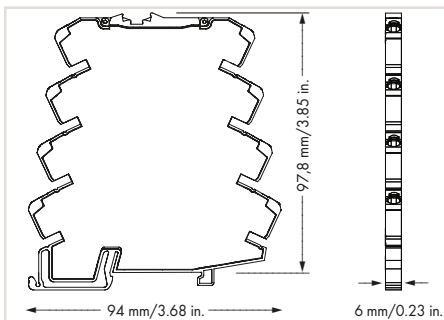
857 Series



JUMPFLEX® Isolation Amplifier, current and voltage input signal, 2 x current and voltage output signal, configuration via DIP switch, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-424	1

IN+	1	5	OUT 1+
GND 2	2	6	GND 3
OUT 2+	3	7	Us+
GND 4	4	8	GND 1
	IN	OUT 1	
	OUT 2	POWER	



Short description:

The 857-424 Signal Splitter converts, amplifies, filters and electrically isolates analog standard signals. In addition, the input signal is split into two separate outputs.

Features:

- Two configurable voltage/current outputs
- Switchable max. operating frequency
- Safe 4-way isolation with 3 kV test voltage per EN 61010-1

Technical Data

Configuration

Configuration

DIP switch

Input

Input signal

0 ... 10 mA, 2 ... 10 mA,
0 ... 20 mA, 4 ... 20 mA,
0 ... 5 V, 1 ... 5 V,
0 ... 10 V, 2 ... 10 V

Max. input signal

12 V, 24 mA

Overload capacity

30 V, 50 mA

Measuring range overflow/underflow

10.25 V, 20.5 mA / -0.25 V, -0.5 mA

Input resistance

< 50 Ω (I input)
> 100 kΩ (U input)

Output

Output signal

0 ... 10 V, 2 ... 10 V (calibrated switchable),
0 ... 20 mA, 4 ... 20 mA (calibrated switchable),
max. 12 V, 24 mA

Load impedance

≤ 600 Ω (Out = mA)
≥ 2 kΩ (Out = V)

General Specifications

Nominal supply voltage U_s

24 VDC

Supply voltage range

U_s -30 % ... +30 %

Current consumption at 24 VDC

≤ 35 mA

Max. operating frequency

100 Hz / > 1 kHz (switchable via DIP switch)

Response time (T_{10-90})

< 3.5 ms / < 300 μs

Transmission Error

≤ 0.1 % of the full scale value

Temperature coefficient

≤ 0.01 % / K

Conformity marking

CE

Standards/Approvals

EN 61010-1, EN 61326-1

Environmental Requirements

Ambient operating temperature

-40 ... +70 °C

Storage temperature

-40 ... +85 °C

Safety and Protection

Test voltage

(input/output/supply)

AC 3 kV, 50 Hz, 1 min

Protection type

IP20

Connection and Type of Mounting

Wire connection

Push-in CAGE CLAMP®

Conductor range

Solid

0.08 ... 2.5 mm² / 28 ... 14 AWG

Fine-stranded

0.34 ... 2.5 mm² / 22 ... 14 AWG

Strip length

9 ... 10 mm / 0.35 ... 0.39 in.

Dimensions and Weight

Dimensions (mm) W x H x D

6 x 97.8 x 94, Height from upper-edge of DIN 35 rail

Weight

37.9 g

For additional approvals, see page 180.

Configuration via



Accessories,
see page 258

857-424

DIP Switch Adjustability

● = ON

DIP Switch S1 (4 positions)

Input Signal			4	Max. Operating Frequency
●				> 1 kHz
●		●	●	100 Hz
●	●			
●	●	●		
		●		
	●			
	●	●		

DIP Switch S2 (2 positions)

Output Signal 1	
1	2
●	
	●
●	●

DIP Switch S3 (2 positions)

Output Signal 2	
1	2
●	
	●
●	●

Default Settings

Input	0 ... 20 mA
Output Signal 1	0 ... 10 V
Output Signal 2	0 ... 10 V
Max. Operating Frequency	> 1 kHz

JUMPFLEX® Signal Conditioners

Loop-Powered Isolation Amplifier

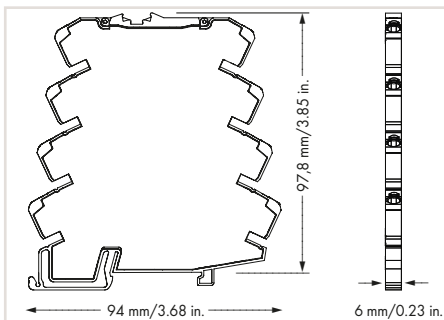
857 Series



JUMPFLEX® Loop-Powered Isolation Amplifier, bipolar current and voltage input signal, current output signal, configuration via DIP switch, power via input, 6 mm wide

Item No.	Pack. Unit
857-450	1

U+	1	IN	OUT	5	U+
U-	2		4-20 mA	6	OUT 1
I+	3	U, I	N.C.	7	N.C.
I-	4		N.C.	8	N.C.



Short description:

The 857-450 Loop-Powered Isolation Amplifier converts analog, unipolar and bipolar, standard signals. It is also designed to amplify, filter and electrically isolate analog standard signals.

Features:

- No additional supply voltage required
- Zero/span adjustment
- Analog, unipolar and bipolar, standard signals at input
- Calibrated scale switching
- Switchable max. operating frequency
- Safe 2-way isolation with 2.5 kV test voltage per EN 61140

Special Functions



Configuration via



Accessories,
see page 258

Technical Data

Configuration

Configuration

DIP switch

Input

Input signal

Current

± 5 mA, 0 ... 5 mA,
± 10 mA, 0 ... 10 mA, 2 ... 10 mA,
± 20 mA, 0 ... 20 mA, 4 ... 20 mA

Voltage

± 1 V, 0 ... 1 V,
± 5 V, 0 ... 5 V, 1 ... 5 V,
± 10 V, 0 ... 10 V, 2 ... 10 V,
± 20 V, ± 2 V, 0 ... 2 V

Input resistance

≤ 50 Ω (I_n = mA)
≥ 1 MΩ (U input)

Output

Output signal

4 ... 20 mA

Load impedance

≤ 600 Ω

Overload capacity

30 V / 50 mA

General Specifications

Supply voltage

8 ... 30 V, power is derived from the output circuit

Max. operating frequency

100 Hz / 30 Hz
(switchable via DIP switch)

Response time (T₁₀₋₉₀)

< 3.5 ms

Transmission Error

≤ 0.1 % of the full scale value

Temperature coefficient

≤ 0.01 % / K

Zero/span adjustment

± 5 % of upper range value

Conformity marking

CE

Environmental Requirements

Ambient operating temperature

-25 ... +70 °C

Storage temperature

-40 ... +85 °C

Safety and Protection

Test voltage

2.5 kV AC, 50 Hz, 1 min

(input/output/supply)

Connection and Type of Mounting

Wire connection

Push-in CAGE CLAMP®

Conductor range

Solid

0.08 ... 2.5 mm² / 28 ... 14 AWG

Fine-stranded

0.34 ... 2.5 mm² / 22 ... 14 AWG

Strip length

9 ... 10 mm / 0.35 ... 0.39 in.

Dimensions and Weight

Dimensions (mm) W x H x D

6 x 97.8 x 94, Height from upper-edge of DIN 35 rail

Weight

37.9 g

For additional approvals, see page 180.

857-450

DIP Switch Adjustability

● = ON

DIP switch (6 positions)

Input Signal					Output Signal	Max. Operating Frequency		
1	2	3	4	5		6		
					4 ... 20 mA	4 ... 20 mA	100 Hz	
●		●	●		0 ... 20 mA		●	30 Hz
●		●	●	●	± 20 mA			
●		●			2 ... 10 mA			
●			●		0 ... 10 mA			
●			●	●	± 10 mA			
●					0 ... 5 mA			
●				●	± 5 mA			
	●	●	●		0 ... 20 V			
	●	●	●	●	± 20 V			
	●	●			2 ... 10 V			
	●		●		0 ... 10 V			
	●		●	●	± 10 V			
	●				1 ... 5 V			
		●	●		0 ... 5 V			
		●	●	●	± 5 V			
		●			0 ... 2 V			
			●		± 2 V			
			●	●	0 ... 1 V			
			●	●	± 1 V			

Default setting

Input	4 ... 20 mA
Output	4 ... 20 mA
Max. operating frequency	100 Hz

JUMPFLEX® Signal Conditioners

Passive Isolator, 1-Channel

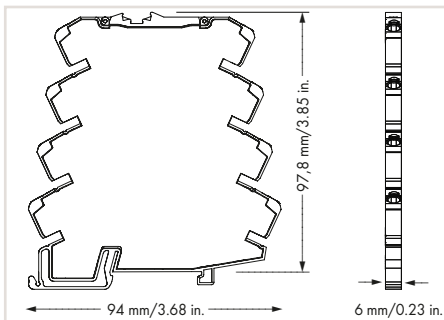
857 Series



JUMPFLEX® Passive Isolator, 1-channel, current input signal, current output signal, power via input, 6 mm wide

Item No.	Pack. Unit
857-451	1

IN+	1	IN	5	OUT+
GND 1	2		6	GND 2
N.C.	3		7	N.C.
N.C.	4		8	N.C.



Short description:

The 1-channel 857-451 Passive Isolator filters and electrically isolates 0(4) ... 20 mA analog standard signals, while drawing power for signal transmission from the input circuit. The connected sensor supplies the passive isolator with the required power, while powering the connected load.

Features:

- No additional supply voltage required
- Safe 2-way isolation with 2.5 kV test voltage per EN 61140

Technical Data

Input	
Input signal	0(4) ... 20 mA
Response current	< 200 μ A
Voltage drop at input	< 2.5 V at 20 mA (output)
Max. input voltage	< 20 V
Max. input signal	40 mA
Output	
Output signal	0(4) ... 20 mA
Load impedance	\leq 600 Ω (Temperature range restrictions may occur)
General Specifications	
Max. operating frequency	100 Hz
Response time (T_{10-90})	< 3.5 ms
Transmission Error	\leq 0.1 % of the full scale value
Load error	\leq 0.05 % of upper range value per 100 Ω load
Temperature coefficient	\leq 0.01 % / K
Conformity marking	CE
Environmental Requirements	
Ambient operating temperature	-25 ... +70 $^{\circ}$ C
Storage temperature	-40 ... +85 $^{\circ}$ C
Connection and Type of Mounting	
Wire connection	Push-in CAGE CLAMP®
Conductor range	
Solid	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Fine-stranded	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 in.
Dimensions and Weight	
Dimensions (mm) W x H x D	6 x 97.8 x 94, Height from upper-edge of DIN 35 rail
Weight	33.8 g
For additional approvals, see page 180.	

JUMPFLEX® Signal Conditioners

Passive Isolator, 2-Channel

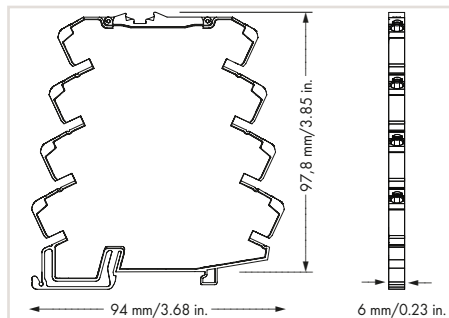
857 Series



JUMPFLEX Passive Isolator, 2 channel, current input signal, 2 x current output signal, power via input, 6 mm wide

Item No.	Pack. Unit
857-452	1

IN 1+	1	IN 1	OUT 1	5	OUT 1+
GND 1	2			6	GND 2
IN 2+	3	IN 2	OUT 2	7	OUT 2+
GND 3	4			8	GND 4



Short description:

The 2-channel 857-452 Passive Isolator filters and electrically isolates 0(4) ... 20 mA analog standard signals, while drawing power for signal transmission from the input circuit. The connected sensor supplies the passive isolator with the required power, while powering the connected load.

Features:

- No additional supply voltage required
- Safe 2-way isolation with 2.5 kV test voltage per EN 61140

Technical Data

Input (information per channel)	
Input signal	0(4) ... 20 mA
Response current	< 200 μ A
Voltage drop at input	< 2.5 V at 20 mA (output)
Max. input voltage	< 20 V
Max. input signal	40 mA
Output (information per channel)	
Output signal	0(4) ... 20 mA
Load impedance	\leq 600 Ω (Temperature range restrictions may occur)
General Specifications	
Max. operating frequency	100 Hz
Response time (T ₁₀₋₉₀)	< 3.5 ms
Transmission Error	\leq 0.1 % of the full scale value
Load error	\leq 0.05 % of upper range value per 100 Ω load
Temperature coefficient	\leq 0.01 % / K
Conformity marking	CE
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-40 ... +85 °C
Connection and Type of Mounting	
Wire connection	Push-in CAGE CLAMP®
Conductor range	
Solid	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Fine-stranded	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 in.
Dimensions and Weight	
Dimensions (mm) W x H x D	6 x 97.8 x 94, Height from upper-edge of DIN 35 rail
Weight	37.8 g

For additional approvals, see page 180.

JUMPFLEX® Signal Conditioners

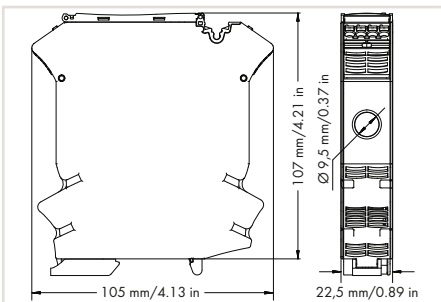
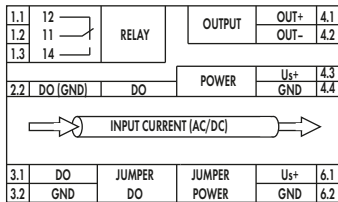
Current Signal Conditioner 100 A AC/DC

857 Series



JUMPFLEX® Current Signal Conditioner, current input signal: 100 AAC/DC, current and voltage output signal, digital and relay output, configuration via software, supply voltage: 24 VDC, 22.5 mm wide

Item No.	Pack. Unit
2857-550	1



Short description:

The 2857-550 Current Signal Conditioner measures AC/DC currents up to 100 A, while converting the measured current into an analog standard signal at the output.

Features:

- Both digital signal output and relay with change-over contact react to configured measuring range limits (switching ON/OFF delay and threshold value switch function configurable with up to two threshold values).
- Clipping capability provides the analog signal limitation to output end values.
- Adjustable software filter
- Input/Output response simulation via configuration display
- Safe 3-way isolation with 4 kV test voltage acc. EN 61140

Special Functions



Configuration via



Accessories, see page 258

Technical Data

Configuration

Configuration

DIP switch, interface configuration software, interface configuration app, configuration display

Input

Input signal
Response threshold
Resolution
Frequency range

0.5 ... 100 A (AC) / -100 A ... 100 A (DC) *
500 mA (AC) / 250 mA (DC)
10 mA
15 ... 1000 Hz

Output

Output signal

± 10 mA, 0 ... 10 mA, 2 ... 10 mA,
± 20 mA, 0 ... 20 mA, 4 ... 20 mA *

Current

± 5 V, 0 ... 5 V, 1 ... 5 V,
± 10 V, 0 ... 10 V, 2 ... 10 V *

Voltage

0 % or +5 % (e.g. 10.5 V / 24 mA)

Overcurrent

0 % or +2.5 %

Measuring range overflow/underflow

Load impedance

Current

≤ 600 Ω

Voltage

≥ 1 kΩ

Measuring procedure

True RMS measurement (TRMS) or
Arithmetic mean value *

Output – Digital

Max. switching voltage
Max. continuous current (I_{DC})

Supply voltage applied -0.3 V
100 mA (no internal limitation)

Output – Relay

Contact type
Contact material
Max. switching voltage

1 changeover contact (1 u)
AgNi (gold-plated)
250 VAC

Max. continuous current (terminal blocks in a row)

6A

Dielectric strength, open contact (AC, 1 min)

1 kV_{rms}

Pull-in/drop-out/bounce time typ.

8 ms / 4 ms / 8 ms

General Specifications

Nominal supply voltage U_S
Supply voltage range
Current consumption at 24 VDC
Max. operating frequency
Response time
Response time (T_{10-90})
Linearity error
Measurement error
Temperature coefficient
Conformity marking

24 VDC
 $U_S -30\% \dots +30\%$
≤ 50 mA (+ I_{DC})
3.3 kHz
Signal cycle duration + 1 ms
max. 60 ms
≤ 1 %
≤ 0.2 % (of the full scale value)
≤ 0.01 % / K
CE

Standards/Approvals

DIN EN 60664-1;
Safe isolation acc. to
DIN EN 61140

Environmental Requirements

Ambient operating temperature
Storage temperature

-40 ... +70 °C

-40 ... +85 °C

Safety and Protection

Test voltage
(input/output/supply)
Test voltage
(measuring circuit – output)

2.5 kV AC, 50 Hz, 1 min

4 kV AC, 50 Hz, 1 min.

Connection and Type of Mounting

Wire connection
Conductor range

Push-in CAGE CLAMP® (picoMAX® 5.0)

Solid

0.2 ... 2.5 mm²

Fine-stranded

24 ... 12 AWG

Strip length

9 ... 10 mm / 0.35 ... 0.39 in.

Feedthrough for Measurement Conductor

9.5 mm Ø

Dimensions and Weight

Dimensions (mm) W x H x D

22.5 x 107 x 105, Height from upper-edge of DIN 35 rail

Weight

106 g

(*Additional setting options via interface configuration software or interface configuration app)

2857-550

DIP Switch Adjustability

● = ON

DIP Switch S1

Measuring Method		Filter		Analog Output Inverted		Output Signal (Bipolar for Arithmetic Mean Value)			
1		2		3		4	5	6	Analog Output
	True RMS		inactive		not inverted				(±) 0 ... 20 mA
●	Arithmetic mean value (bipolar output)	●	active	●	inverted		●		4 ... 20 mA
						●			(±) 0 ... 10 V
						●	●		2 ... 10 V
								●	(±) 0 ... 10 mA
							●	●	2 ... 10 mA
						●		●	(±) 0 ... 5 V
						●	●	●	1 ... 5 V

DIP Switch S1

Measuring Range Underflow		Measuring Range Overflow		Overcurrent (Input Signal - End Value +20%)		Digital Output (DO)/ Relay	
7	8					9	10
		Lower measuring range -5%*	Upper measuring range +2.5%*	Upper measuring range +5%			Off
●		Lower measuring range	Upper measuring range +2.5%	Upper measuring range +5%	●		DO Us+ switching – relay pulls in
	●	Lower measuring range	Upper measuring range	Lower measuring range		●	DO GND switching – relay drops out
●	●	Lower measuring range -5%	Upper measuring range +5%	Upper measuring range	●	●	Off

*acc. to NAMUR NE 43

DIP Switch S2

Lower Value				Upper value			
1	2	3	4	5	6	7	A / %
							Software configuration (0)
							Software configuration (-100)
●				●			100
	●				●		90
●	●			●	●		70
		●				●	50
●		●		●		●	30
	●	●			●	●	20
●	●	●		●	●	●	10
			●				18
●			●				20
	●		●				25
●	●		●				30
		●	●				35
●		●	●				40
	●	●	●				45
●	●	●	●				50

JUMPFLEX® Signal Conditioners

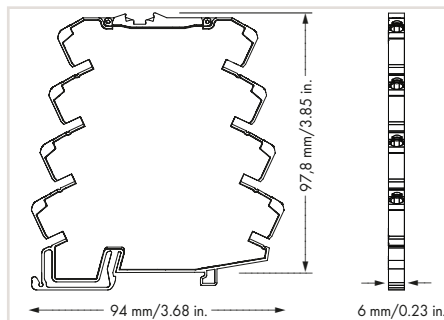
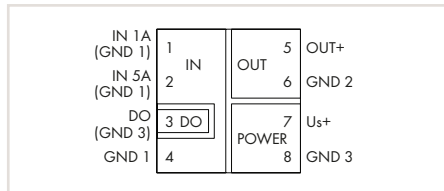
Current Signal Conditioner 0 ... 1 A, 0 ... 5 A AC/DC

857 Series



JUMPFLEX® Current Signal Conditioner, current input signal: 5 A AC/DC, current and voltage output signal, digital output, configuration via software, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-550	1



Short description:

The 857-550 Current Signal Conditioner measures both 0 ... 1 A and 0 ... 5 A AC/DC currents, while converting the input signal to an analog standard signal at the output.

Features:

- PC configuration interface
- True RMS measurement or arithmetic mean value
- Digital switching output (configurable switching thresholds)
- Switchable filter function
- Calibrated scale switching
- Safe 3-way isolation with 2.5 kV test voltage acc. to EN 61140
- Extremely fast response times
- Measuring range overflow indication

Special Functions



Configuration via



Accessories, see page 258

Technical Data

Configuration

Configuration

DIP switch, interface configuration software, interface configuration app

Input

Input signal
Input resistance
Frequency range
Response threshold
Current carrying capacity

0 ... 1 A AC/DC, 0 ... 5 A AC/DC *
10 mΩ (5 A), 47 mΩ (1 A)
16 ... 400 Hz
< 0.5 % (of measuring range nominal)
2 x I_N (continuous)

Output

Output signal
Current
Voltage

0 ... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V *

Load impedance

0 ... 10 mA, 2 ... 10 mA, 0 ... 20 mA, 4 ... 20 mA *
≤ 600 Ω (I output)**
≥ 2 kΩ (Out = V)
** Temperature range restrictions may occur.

Filter (T₁₀₋₉₀)

260 ms (DC), 600 ms (AC 50 Hz)

Output – Digital

Max. switching voltage
Max. continuous current

Supply voltage applied
500 mA (to 60 °C)
100 mA (60 ... 70 °C)

General Specifications

Nominal supply voltage U_S
Supply voltage range
Current consumption at 24 VDC

24 VDC
U_S -30 % ... +30 %
≤ 40 mA

Measuring procedure

Arithmetic mean value
True RMS measurement (TRMS) *

Response time

1.5 ms + signal cycle duration

Max. response time

60 ms

Max. measuring span

2 mA ... 1 A, 4 mA ... 5 A

Transmission Error

≤ 0.1 % typ. (≤ 0.4 % max.)

Temperature coefficient

≤ 0.01 % / K

Linearity error

< 0.5 % (of measuring range nominal)

Conformity marking

CE

Environmental Requirements

Ambient operating temperature
Storage temperature

-25 °C ... +70 °C (at nominal current)
-40 ... +85 °C

Safety and Protection

Test voltage
(input/output/supply)

2.5 kV AC, 50 Hz, 1 min

Connection and Type of Mounting

Wire connection
Conductor range

Push-in CAGE CLAMP®

Solid

0.08 ... 2.5 mm² / 28 ... 14 AWG

Fine-stranded

0.34 ... 2.5 mm² / 22 ... 14 AWG

Strip length

9 ... 10 mm / 0.35 ... 0.39 in.

Dimensions and Weight

Dimensions (mm) W x H x D

6 x 97.8 x 94, Height from upper-edge of DIN 35 rail

Weight

50 g

For additional approvals, see page 180.

(*Additional setting options via interface configuration software or interface configuration app)

857-550

DIP Switch Adjustability

● = ON

DIP Switch S1

Input Signal		Measuring Method		Filter		Output Signal			
1		2		3		4	5	6	
	5 A		Mean square value		off				0 ... 20 mA
●	1 A	●	Arithmetic mean value	●	active		●		4 ... 20 mA
						●			0 ... 10 V
						●	●		2 ... 10 V
								●	0 ... 10 mA
							●	●	2 ... 10 mA
						●		●	0 ... 5 V
						●	●	●	1 ... 5 V

Filter

The filter function allows a low-pass filter to be switched on in order to mask or "smooth out" oscillating measured values (e.g., during trailing edge flows).

DIP Switch S1

		Measuring Range Underflow	Measuring Range Overflow	Overcurrent (Input Signal - End Value + 20%)	Digit Output DO Signaling	
7	8				9	10
		Lower limit of measuring range -5 %	Upper limit of measuring range +2.5 %	Upper limit of measuring range +5 %		DO not active
●		Lower limit of measuring range	Upper limit of measuring range +2.5 %	Upper limit of measuring range +5 %	●	DO U _S switching
	●	Lower limit of measuring range	Upper limit of measuring range	Lower limit of measuring range	●	DO GND switching
●	●	Lower limit of measuring range	Upper limit of measuring range	Upper limit of measuring range		

*acc. to NAMUR NE 43

Digital Output DO/Signaling

The digital output (DO) signals error messages and can be configured as follows: 24 V → 0 V/0 V → 24 V.

In order to increase the switching current of the DO, the latter may be expanded by a relay. Thanks to the contour uniformity of Series 857, for example, a 857-304 Relay can be snapped in next to it. This output can be quickly and easily expanded to a switching current of 6A by simply using an adjacent jumper (859-402).

Default Setting

All DIP switches are in "OFF" position for delivery.	
Input	
Input Signal	0 ... 5 A
Measuring Method	Mean square value
Filter	not active
Output	
Output Signal	0 ... 20 mA
Measuring Range Underflow	0 mA
Measuring Range Overflow	20.5 mA
Overcurrent	21 mA
Digital Output DO	not active

JUMPFLEX® Signal Conditioners

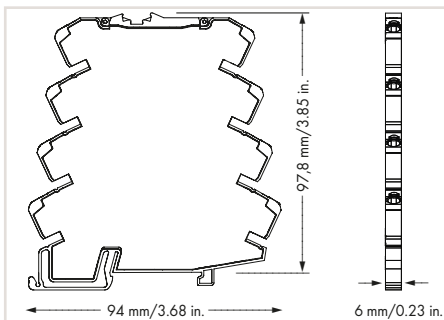
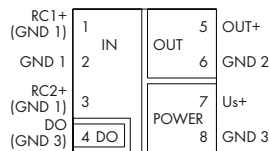
Rogowski Signal Conditioner

857 Series



JUMPFLEX® Current Signal Conditioner, input for Rogowski coils, current and voltage output signal, digital output, configuration via software, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-552	1



Short description:

The 857-552 Rogowski Signal Conditioner records RMS values from alternating currents via a Rogowski coil, converting the input signal into an analog standard signal on the output side.

Features:

- PC configuration interface
- Supports different types of Rogowski coils
- Digital switching output (configurable switching thresholds)
- True RMS measurement (TRMS)
- Configurable output signal
- Configuration via DIP switch
- Safe 3-way isolation with 2.5 kV test voltage acc. to EN 61140
- No current bar interruption during installation*
- Measuring range overflow indication

Special Functions



Configuration via



Accessories,
see page 258

Technical Data

Configuration

Configuration

DIP switch, interface configuration software, interface configuration app

Input

Input signal, current

50 Hz sinusoidal signals
RC1 500 A: Sensitivity 10.05 mV *
RC2A 2000 A: Sensitivity 40.2 mV *
RC2B: 100 A Sensitivity 22.5 mV *

Measuring range

RC1 ≤ 500 A
RC2A ≤ 2000 A
RC2B ≤ 4000 A

Frequency range

16 ... 1000 Hz

Response threshold

< 1 % (of measuring range nominal value)

Output

Output signal

Current

0 ... 10 mA, 2 ... 10 mA,
0 ... 20 mA, 4 ... 20 mA *

Voltage

0 ... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V *

Load impedance

I output ≤ 600 Ω, U output ≥ 1000 Ω

Overcurrent

0 % or +5 % (e.g. 10.5 V/21 mA) *

Measuring range overflow/underflow

0 % or +2.5 % *

Filter (T₁₀₋₉₀)

600 ms (50 Hz)

Output – Digital

Max. switching voltage

Supply voltage applied

Max. continuous current

100 mA

General Specifications

Nominal supply voltage U_s

24 VDC

Supply voltage range

U_s -30 % ... +30 %

Current consumption at 24 VDC

≤ 40 mA

Resolution

RC1 250 mA
RC2A 1000 mA
RC2B 1500 mA

Measuring procedure

True RMS measurement (TRMS)

Response time

1.5 ms + signal cycle duration

Max. operating frequency

< 2 kHz

Response time (T₁₀₋₉₀)

max. 60 ms

Linearity error

≤ 0.1 %

Temperature coefficient

≤ 0.01 % / K

Measurement error

< 1 %

Conformity marking

CE

Environmental Requirements

Ambient operating temperature

-25 ... +70 °C

Storage temperature

-40 ... +85 °C

Safety and Protection

Test voltage

2.5 kV AC, 50 Hz, 1 min

(input/output/supply)

Connection and Type of Mounting

Wire connection

Push-in CAGE CLAMP®

Conductor range

0.08 ... 2.5 mm² / 28 ... 14 AWG

Solid

0.34 ... 2.5 mm² / 22 ... 14 AWG

Fine-stranded

Strip length

9 ... 10 mm / 0.35 ... 0.39 in.

Dimensions and Weight

Dimensions (mm) W x H x D

6 x 97.8 x 94, Height from upper-edge of DIN 35 rail

Weight

36.2 g

For additional approvals, see page 180.

(*Additional setting options via interface configuration software or interface configuration app)

857-552

DIP Switch Adjustability

● = ON

DIP Switch S1

Input Signal		RC Configuration Input		Filter		Output Signal			
1		2		3		4	5	6	
	RC1 = RT500 from LEM		RC2A = RT2000 from LEM		off				0 ... 20 mA
●	RC2	●	RC2B = 22.5 mV/kA	●	active		●		4 ... 20 mA
						●			0 ... 10 V
						●	●		2 ... 10 V
								●	0 ... 10 mA
							●	●	2 ... 10 mA
						●		●	0 ... 5 V
						●	●	●	1 ... 5 V

Filter

The filter function allows a low-pass filter to be switched on in order to mask or "smooth out" oscillating measured values (e.g., during trailing edge flows).

DIP Switch S1

		Measuring Range Underflow	Measuring Range Overflow	Overcurrent (Input Signal - End Value + 20%)			Digital Output DO Signaling
7	8				9	10	
		Lower limit of measuring range +5 %'	Upper limit of measuring range +2.5 %'	Upper limit of measuring range +5 %'			DO not active
●		Lower limit of measuring range	Upper limit of measuring range +2.5 %	Upper limit of measuring range +5 %		●	DO U _S + switching
	●	Lower limit of measuring range	Upper limit of measuring range	Lower limit of measuring range	●	●	DO GND switching
●	●	Lower limit of measuring range	Upper limit of measuring range	Upper limit of measuring range			

*acc. to NAMUR NE 43

Digital Output DO/Signaling

The digital output (DO) signals error messages and can be configured as follows: 24 V → 0 V/0 V → 24 V.

In order to increase the switching current of the DO, the latter may be expanded by a relay. Thanks to the contour uniformity of Series 857, for example, a 857-304 Relay can be snapped in next to it. This output can be quickly and easily expanded to a switching current of 6A by simply using an adjacent jumper (859-402).

Default Setting

All DIP switches are in "OFF" position for delivery.	
Input	
Input Signal	RC1 500 A
Measuring Method	Mean square value
Filter	not active
Output	
Output Signal	0 ... 20 mA
Measuring Range Underflow	0 mA
Measuring Range Overflow	20.5 mA
Overcurrent	21 mA
Digital Output DO	not active

JUMPFLEX® Signal Conditioners

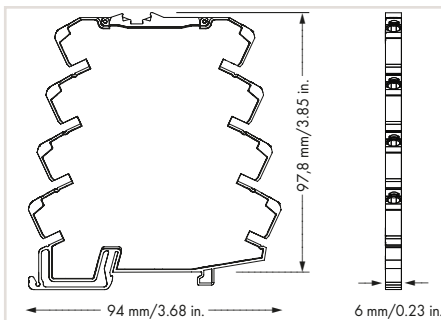
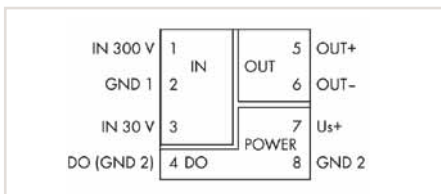
Voltage Signal Conditioner

857 Series



JUMPFLEX® Voltage Signal Conditioner, current input signal for AC and DC voltages, current and voltage output signal, digital output, configuration via software/DIP switch, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-560	1



Short description:

The 857-560 Voltage Signal Conditioner measures AC and DC voltages up to 300 V AC/DC and converts the input signal into an analog standard signal at the output.

Features:

- Two isolated measurement inputs for 30 V and 300 V AC/DC
- True RMS measurement or arithmetic mean value
- A digital signal output reacts to configured measuring range limits (switching ON/OFF delay and threshold value switch function configurable with up to two threshold values)
- Switchable filter function
- Safe 3-way isolation with 3 kV test voltage per EN 61010-1

Special Functions



Configuration via



Accessories, see page 258

Technical Data

Configuration

Configuration

DIP switch, interface configuration software, interface configuration app

Input

Input signal

300 V AC/DC or 30 V AC/DC

Response threshold

IN 1: 300 mV, IN 2: 30 mV

Input resistance

> 300 kΩ

Frequency range

10 ... 100 Hz AC

Overload capacity

IN 1: 600 V; IN 2: 60 V (permanent)

Resolution

IN 1: 30 mV, IN 2: 3 mV

Output

Output signal

± 0 ... 20 mA, 4 ... 20 mA,
± 0 ... 10 mA, 2 ... 10 mA,
± 0 ... 10 V, 2 ... 10 V,
± 0 ... 5 V, 1 ... 5 V

Load impedance

≤ 600 Ω (I output);
≥ 1 kΩ (U output)

Output – Digital

Max. switching voltage

Supply voltage applied

Max. continuous current

100 mA

General Specifications

Nominal supply voltage U_s

24 VDC

Supply voltage range

$U_s - 30\% \dots +30\%$

Current consumption at 24 VDC

46 mA + I_{DO}

Measuring procedure

Effective value (RMS) or arithmetic mean value

Max. operating frequency

2 kHz

Response time typ. signal cycle duration

+ 1 ms

Response time (T_{10-90})

60 ms

Temperature coefficient

≤ 0.01 % / K

Linearity error

≤ 0.1 %

Measurement error

< 0.5 %

Conformity marking

CE

Standards/Approvals

EN 61010-1, EN 61326-1

Environmental Requirements

Ambient operating temperature

-40 ... +70 °C

Storage temperature

-40 ... +85 °C

Safety and Protection

Test voltage

AC 3 kV, 50 Hz, 1 min

(input/output/supply)

IP20

Protection type

Connection and Type of Mounting

Wire connection

Push-in CAGE CLAMP®

Conductor range

0.08 ... 2.5 mm² / 28 ... 14 AWG

Solid

0.34 ... 2.5 mm² / 22 ... 14 AWG

Fine-stranded

Strip length

9 ... 10 mm / 0.35 ... 0.39 in.

Dimensions and Weight

Dimensions (mm) W x H x D

6 x 97.8 x 94, Height from upper-edge of DIN 35 rail

Weight

55 g

857-560

DIP Switch Adjustability

● = ON

DIP Switch S1

1	2	Input	3	Measuring Method	4	Filter
		300 V		RMS		Off
	●	150 V	●	Arithmetic mean value	●	Active
●		30 V				
●	●	15 V				

DIP Switch S1

5	6	7	Output Signal Range
			(+/-) 0 ... 20 mA
	●		4 ... 20 mA
●			(+/-) 0 ... 10 V
●	●		2 ... 10 V
		●	(+/-) 0 ... 10 mA
	●	●	2 ... 10 mA
●		●	(+/-) 0 ... 5 V
●	●	●	1 ... 5 V

DIP Switch S1

8	9	Measuring Range Underflow	Measuring Range Overflow	10	Digit Output DO/ Signaling
		Lower limit of measuring range -5 %*	Upper limit of measuring range +2.5 %*		DO V _S + switching
●		Lower limit of measuring range	Upper limit of measuring range +2.5 %	●	DO GND switching
	●	Lower limit of measuring range	Upper limit of measuring range		
●	●	Lower limit of measuring range	Upper limit of measuring range		

*per NAMUR NE 43

Filter

The filter function allows a low-pass filter to be switched on in order to mask or "smooth out" oscillating measured values (e.g., during trailing edge flows).

Digital Output DO/Signaling

The digital output (DO) signals error messages and can be configured as follows:

24 V → 0 V/0 V → 24 V.

Default Setting

All DIP switches are in "OFF" position for delivery.	
Input	
Input	300 V
Measuring Method	RMS
Filter	Off
Output	
Output Signal	0 ... 20 mA
Measuring Range Underflow	0 mA
Measuring Range Overflow	20.5 mA
Overcurrent	21 mA
Digital Output DO	V _S + switching

JUMPFLEX® Signal Conditioners

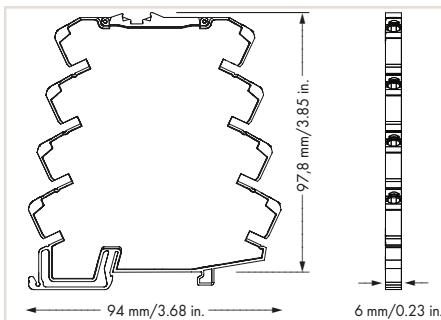
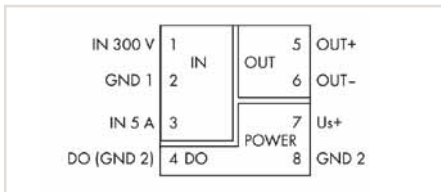
Power Signal Conditioner

857 Series



JUMPFLEX® Power Signal Conditioner, current and voltage input signal, current and voltage output signal, digital output, configuration via software/DIP switch, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-569	1



Short description:

The 857-569 Power Signal Conditioner measures AC and DC voltages and AC and DC currents and converts the input signal into an analog standard signal at the output. Measured value processing can be switched between effective, apparent or reactive power and the phase angle.

Features:

- Two isolated measurement inputs for AC and DC voltages and AC and DC currents
- RMS measurement (RMS)
- A digital signal output reacts to configured measuring range limits (switching ON/OFF delay and threshold value switch function configurable with up to two threshold values)
- Switchable filter function
- Safe 3-way isolation with 3 kV test voltage per EN 61010-1

Special Functions



Configuration via



Accessories,
see page 258

Technical Data

Configuration

Configuration

DIP switch, interface configuration software, interface configuration app

Input

Input signal

IN 1: 300 V AC/DC; IN 2: 5 A AC/DC

Response threshold

IN 1: 300 mV
IN 2: 10 mA

Resolution

IN 1: 30 mV
IN 2: 1 mA

Input resistance

≤ 10 mΩ (I input);
> 300 kΩ (U output)

Frequency range

15 ... 100 Hz AC

Overload capacity

10 A AC/DC (permanent)

Output

Output signal

0 ... 10 mA, 2 ... 10 mA,
0 ... 20 mA, 4 ... 20 mA,
0 ... 5 V, 1 ... 5 V,
0 ... 10 V, 2 ... 10 V
(can be inverted, also bipolar)

Load impedance

≤ 600 Ω (I output);
≥ 1 kΩ (U output)

Output – Digital

Max. switching voltage

Supply voltage applied

Max. continuous current

100 mA

General Specifications

Nominal supply voltage U_s

24 VDC

Supply voltage range

$U_s - 30\% \dots +30\%$

Current consumption at 24 VDC

≤ 46 mA

Measuring procedure

RMS measurement (RMS)

Measured variables

Effective power, apparent power, reactive power, power factor

Max. operating frequency

2 kHz

Response time typ. signal cycle duration

+ 1 ms

Response time (T_{10-90})

100 ms

Temperature coefficient

≤ 0.01 % / K

Linearity error

≤ 0.1 %

Measurement error

(relative to upper limit of measuring range)

Voltage: < 0.5%
Current: < 0.5%
Phase angle: < 0.5%

Conformity marking

CE

Standards/Approvals

EN 61010-1, EN 61326-1

Environmental Requirements

Ambient operating temperature

-40 ... +70 °C

Storage temperature

-40 ... +85 °C

Safety and Protection

Test voltage

3 kV AC, 50 Hz, 1 min

(input/output/supply)

Protection type

IP20

Connection and Type of Mounting

Wire connection

Push-in CAGE CLAMP®

Conductor range

0.08 ... 2.5 mm² / 28 ... 14 AWG

Solid

0.34 ... 2.5 mm² / 22 ... 14 AWG

Fine-stranded

Strip length

9 ... 10 mm / 0.35 ... 0.39 in.

Dimensions and Weight

Dimensions (mm) W x H x D

6 x 97.8 x 94, Height from upper-edge of DIN 35 rail

Weight

55 g

857-569 DIP Switch Adjustability

● = ON

DIP Switch S1

1	2	Input	3	4	Filter
		Active Power			Off
	●	Apparent Power	●		Active
●		Reactive Power			
●	●	Power factor			

DIP Switch S1

5	6	7	Output Signal Range
			0 ... 20 mA
	●		4 ... 20 mA
●			0 ... 10 V
●	●		2 ... 10 V
		●	0 ... 10 mA
	●	●	2 ... 10 mA
●		●	0 ... 5 V
●	●	●	1 ... 5 V

DIP Switch S1

8	9	Measuring Range Underflow	Measuring Range Overflow	10	Digit Output DO/ Signaling
		Lower limit of measuring range -5 %	Upper limit of measuring range +2.5 %		DO V _{S+} switching
●		Lower limit of measuring range	Upper limit of measuring range +2.5 %	●	DO GND switching
	●	Lower limit of measuring range	Upper limit of measuring range		
●	●	Lower limit of measuring range	Upper limit of measuring range		

Filter

The filter function allows a low-pass filter to be switched on in order to mask or "smooth out" oscillating measured values (e.g., during trailing edge flows).

Digital Output DO/Signaling

The digital output (DO) signals error messages and can be configured as follows:
24 V → 0 V / 0 V → 24 V.

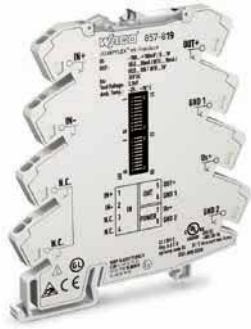
Default Setting ¹per NAMUR NE 43

All DIP switches are in "OFF" position for delivery.	
Input	
Input	Power
Measuring Method	Active power
Filter	Off
Output	
Output	Current
Output Signal Range	0 ... 20 mA
Measuring Range Underflow	0 mA
Measuring Range Overflow	20.5 mA
Overcurrent	21 mA
Digital Output DO	V _{S+} switching

JUMPFLEX® Signal Conditioners

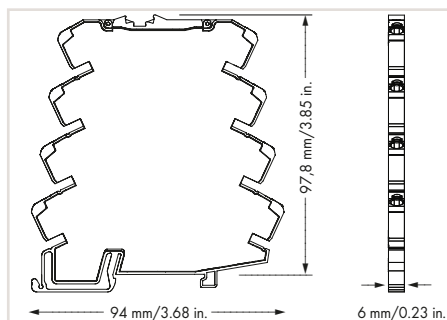
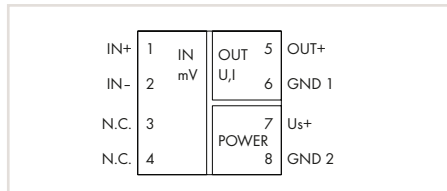
Millivolt Signal Conditioner from -100 ... +100 mV and 0 ... 1000 mV

857 Series



JUMPFLEX® Voltage Signal Conditioner, bipolar voltage input signal, current and voltage output signal, configuration via software, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-819	1



Short description:

The 857-819 Millivolt Signal Conditioner converts input millivolt signals into an analog standard signal on the output side.

Features:

- PC configuration interface
- Calibrated scale switching
- Clipping capability provides the analog signal limitation to output end values.
- Safe 3-way isolation with 2.5 kV test voltage acc. to EN 61140

Special Functions



Configuration via



Accessories,
see page 258

Technical Data

Configuration

Configuration

DIP switch, interface configuration software, interface configuration app

Input

Input signal

-100 mV ... +100 mV,
0 mV ... 200 mV, 0 mV ... 1000 mV *
(in 100 mV increments)

Input resistance

> 1 MΩ

Max. input signal

31.2 V

Output

Output signal

0 ... 10 mA, 2 ... 10 mA,
0 ... 20 mA, 4 ... 20 mA,
0 ... 5 V, 1 ... 5 V,
0 ... 10 V, 2 ... 10 V *

Load impedance

≤ 600 Ω (Out = mA)
≥ 2 kΩ (Out = V)

Step response

50 ms

General Specifications

Nominal supply voltage U_s

24 VDC

Supply voltage range

U_s -30 % ... +30 %

Current consumption at 24 VDC

≤ 40 mA

Max. measuring span

10 mV

Transmission Error

≤ 0.1 % of upper range value

Temperature coefficient

≤ 0.01 % / K

Conformity marking

CE

Environmental Requirements

Ambient operating temperature

-25 ... +70 °C

Storage temperature

-40 ... +85 °C

Safety and Protection

Test voltage

(input/output/supply)

2.5 kV AC, 50 Hz, 1 min

Connection and Type of Mounting

Wire connection

Push-in CAGE CLAMP®

Conductor range

Solid

0.08 ... 2.5 mm² / 28 ... 14 AWG

Fine-stranded

0.34 ... 2.5 mm² / 22 ... 14 AWG

Strip length

9 ... 10 mm / 0.35 ... 0.39 in.

Dimensions and Weight

Dimensions (mm) W x H x D

6 x 97.8 x 94, Height from upper-edge of DIN 35 rail

Weight

50 g

For additional approvals, see page 180.

(*Additional setting options via interface configuration software or interface configuration app)

JUMPFLEX® Signal Conditioners

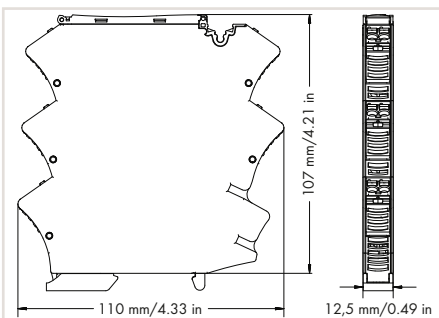
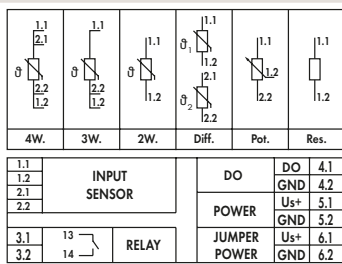
RTD Threshold Value Switch

2857 Series



JUMPFLEX® Threshold Value Switch, RTD sensors, relay/1 make contact, digital output, configuration via software, supply voltage: 24 VDC, 12.5 mm wide

Item No.	Pack. Unit
2857-533	1



Short description:

WAGO's 2857-533 RTD Threshold Value Switch for RTD sensors, potentiometers and resistors monitors and reports signals of up to two switching thresholds.

Features:

- Both digital signal output and relay with make contact react to configured measuring range limits (switching ON/OFF delay and threshold value switch function configurable with up to two threshold values).
- Configurable RTD factor
- Adjustable software filter
- Input/Output response simulation via configuration display
- Safe 3-way isolation with 4 kV test voltage acc. EN 61140

Special Functions



Configuration via



Accessories, see page 258

Technical Data

Configuration

Configuration

Input

Input signal

Sensor types

Sensor Connection

Sensor power supply

Temperature range

Resistor input

Output

Output – Digital

Max. switching voltage

Max. continuous current (I_{BO})

Number of switching thresholds

Configurable rise and fall delay time

Output – Relay

Contact type

Contact material

Max. switching voltage

Max. continuous current (terminal blocks in a row)

Dielectric strength, open contact (AC, 1 min)

Pull-in/drop-out/bounce time typ.

Number of switching thresholds

Configurable rise and fall delay time

General Specifications

Nominal supply voltage U_S

Supply voltage range

Current consumption at 24 VDC

Measurement error

Environmental Requirements

Ambient operating temperature

Storage temperature

Conformity marking

Standards/Approvals

Safety and Protection

Test voltage

(input/output/supply)

Connection and Type of Mounting

Wire connection

Conductor range

Solid

Fine-stranded

Strip length

Dimensions and Weight

Dimensions (mm) W x H x D

Weight

DIP switch, Interface configuration software, Interface configuration app, configuration display

RTD sensors, potentiometers and resistors *

Pt100, Pt200, Pt500, Pt1000, Pt5000, Pt10000, Pt10 ... Pt20000 (expanded) *

2-, 3-, 4-wire, Difference

< 0.5 mA

-200 ... +850 °C

0 ... 100 kΩ

Supply voltage applied -0.3 V

100 mA (no internal limitation)

1 or 2

0 ... 10 s (via DIP switch);

0 ... 60 s (expanded)

1 make contact (1 a)

AgNi (gold-plated)

250 VAC

6 A (up to 60 °C),
3 A (60 ... 70 °C)

1 kV_{rms}

8 ms / 4 ms / 8 ms

1 or 2 (adjustable)

0 ... 10 s (via DIP switch); 0 ... 60 s (expanded)

24 VDC

U_S -30 % ... +30 %

≤ 40 mA + I_{BO}

± 1 K

-40 ... +70 °C

-40 ... +85 °C

CE

DIN EN 60664-1;
Safe isolation acc. DIN EN 61140

4 kV AC, 50 Hz, 1 min.

Push-in CAGE CLAMP® (picoMAX® 5.0)

0.2 ... 2.5 mm²

24 ... 12 AWG

9 ... 10 mm / 0.35 ... 0.39 in.

12.5 x 107 x 110, Height from upper-edge of DIN 35 rail

86 g

(*Additional setting options via interface configuration software or interface configuration app)

2857-533

DIP Switch Adjustability

● = ON

DIP Switch S1

Sensor Type			Connection Technology		Hysteresis		Rise/Fall Delay Time Relay/ Digital Output (DO)					
1	2	3	4	5	6	T / K	7	8	9	t / s	10	Not assigned
						3				0		
●						5				1		
	●								●	2		
●	●								●	3		
		●								4		
●		●							●	5		
	●	●								8		
●	●	●							●	10		

DIP Switch S2

Starting Value									End Value						
1	2	3	4	5	Temperature / °C	Resistance / Ω	Potentiometer Position	6	7	8	9	10	Temperature / °C	Resistance / Ω	Potentiometer Position
					0	OFF	OFF						100	OFF	OFF
●					OFF	10	0 %	●					OFF	10	0 %
	●				-200	15	5 %		●				-200	15	5 %
●	●				-150	22	10 %	●	●				-150	22	10 %
		●			-100	33	15 %			●			-100	33	15 %
●		●			-50	47	20 %	●		●			-50	47	20 %
	●	●			-10	68	25 %		●	●			-10	68	25 %
●	●	●			10	100	30 %	●	●	●			10	100	30 %
			●		20	120	35 %				●		20	120	35 %
●			●		30	150	40 %	●			●		30	150	40 %
	●	●			40	220	45 %		●	●	●		40	220	45 %
●	●		●		50	330	50 %	●	●		●		50	330	50 %
		●	●		60	470	55 %			●	●		60	470	55 %
●		●	●		70	560	60 %	●		●	●		70	560	60 %
	●	●	●		80	680	65 %		●	●	●		80	680	65 %
●	●	●	●		90	1000	70 %	●	●	●	●		90	1000	70 %
				●	100	1200	75 %					●	100	1200	75 %
●				●	150	1500	80 %	●				●	150	1500	80 %
	●			●	200	2200	85 %		●			●	200	2200	85 %
●	●			●	250	3300	90 %	●	●			●	250	3300	90 %
		●		●	300	4700	95 %			●		●	300	4700	95 %
●	●	●		●	350	5600	100 %	●	●	●		●	350	5600	100 %
	●	●		●	400	6800	OFF		●	●	●		400	6800	OFF
●	●	●		●	450	10000	OFF	●	●	●		●	450	10000	OFF
			●	●	500	12000	OFF				●	●	500	12000	OFF
●			●	●	550	15000	OFF	●			●	●	550	15000	OFF
	●	●		●	600	22000	OFF		●	●	●		600	22000	OFF
●	●	●		●	650	33000	OFF	●	●	●	●		650	33000	OFF
		●	●	●	700	47000	OFF			●	●	●	700	47000	OFF
●		●	●	●	750	56000	OFF	●		●	●	●	750	56000	OFF
	●	●	●	●	800	68000	OFF		●	●	●	●	800	68000	OFF
●	●	●	●	●	850	100000	OFF	●	●	●	●	●	850	100000	OFF

Default Settings

Sensor Type	Pt100
Connection Technology	2-wire
Starting Value	0 °C
End Value	100 °C
Hysteresis	3 K
Rise/Fall Delay Time Relay/Digital Output (DO)	0 s

JUMPFLEX® Signal Conditioners

TC Threshold Value Switch

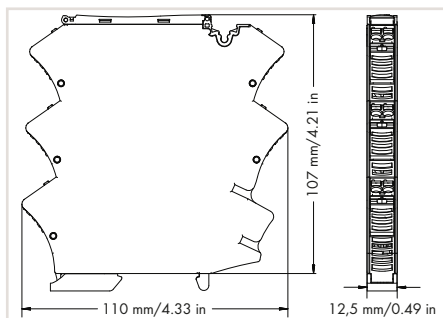
2857 Series



JUMPFLEX® Threshold Value Switch, thermocouple, relay/1 changeover contact, digital output, configuration via software, supply voltage: 24 VDC, 12.5 mm wide

Item No.	Pack. Unit
2857-534	1

1.1	TC+	INPUT SENSOR	DO	DO	4.1
1.2	TC-			GND	4.2
2.1	11	RELAY	POWER	U _s +	5.1
2.2	12			GND	5.2
3.1	11		JUMPER	U _s +	6.1
3.2	14		POWER	GND	6.2



Short description:

WAGO's 2857-534 Thermocouple Threshold Value Switch for TC sensors monitors and reports signals of up to two switching thresholds.

Features:

- Both digital signal output and relay with changeover contact react to configured measuring range limits (switching ON/OFF delay and threshold value switch function configurable with up to two threshold values).
- Adjustable software filter
- Input/Output response simulation via configuration display
- Safe 3-way isolation with 4 kV test voltage acc. EN 61140

Special Functions



Configuration via



Accessories,
see page 258

Technical Data

Configuration

Configuration

DIP switch, Interface configuration software, Interface configuration app, configuration display

Input

Input signal

Thermocouples *

Sensor types

Thermocouple

Type J, K, E, N, R, S, T, B, C *

Temperature range

Type J: -210 ... +1200 °C

Type K: -200 ... +1372 °C

Cold junction compensation

On/Off (default: On)

Cold junction error

3 K (type 2 K)

Output

Output – Digital

Max. switching voltage

Supply voltage applied -0.3 V

Max. continuous current (I_{DO})

100 mA (no internal limitation)

Number of switching thresholds

1 or 2

Configurable rise and fall delay time

0 ... 10 s (via DIP switch);

0 ... 60 s (expanded)

Output – Relay

Contact type

1 changeover contact (1 u)

Contact material

AgNi (gold-plated)

Max. switching voltage

250 VAC

Max. continuous current (terminal blocks in a row)

6 A (up to 60 °C),

3 A (60 ... 70 °C)

Dielectric strength, open contact (AC, 1 min)

1 kV_{rms}

Pull-in/drop-out/bounce time typ.

8 ms / 4 ms / 8 ms

Number of switching thresholds

1 or 2 (adjustable)

Configurable rise and fall delay time

0 ... 10 s (via DIP switch); 0 ... 60 s (expanded)

General Specifications

Nominal supply voltage U_s

24 VDC

Supply voltage range

U_s -30 % ... +30 %

Current consumption at 24 VDC

≤ 40 mA + I_{DO}

Measurement error

± 1 K

Temperature coefficient

≤ 0.01 % / K

Conformity marking

CE

Standards/Approvals

DIN EN 60664-1;

Safe isolation acc. DIN EN 61140

Environmental Requirements

Ambient operating temperature

-40 ... +70 °C

Storage temperature

-40 ... +85 °C

Safety and Protection

Test voltage

4 kV AC, 50 Hz, 1 min.

(input/output/supply)

Connection and Type of Mounting

Wire connection

Push-in CAGE CLAMP® (picoMAX® 5.0)

Conductor range

0.2 ... 2.5 mm²

Solid

24 ... 12 AWG

Fine-stranded

Strip length

9 ... 10 mm / 0.35 ... 0.39 in.

Dimensions and Weight

Dimensions (mm) W x H x D

12.5 x 107 x 110, Height from upper-edge of DIN 35 rail

Weight

87 g

(*Additional setting options via interface configuration software or interface configuration app)

2857-534

DIP Switch Adjustability

● = ON

DIP Switch S1

Sensor Type Thermocouple					Cold Junction Compensation	Hysteresis		Rise/Fall Delay Time Relay/Digital Output (DO)				10
1	2	3	4	Type	5	6	T / K	7	8	9	t / s	Not assigned
				J	ON		3				0	
●				K	OFF	●	5	●			1	
	●			E					●		2	
●	●			R				●	●		3	
			●	N						●	4	
●			●	S				●		●	5	
	●	●		T					●	●	8	
●	●	●		B				●	●	●	10	
			●	C								

DIP Switch S2

Lower Value					Upper Value					
1	2	3	4	5	6	7	8	9	10	
Temperature / °C					Temperature / °C					
					0					100
●					OFF	●				OFF
	●				-200		●			-200
●	●				-150	●	●			-150
		●			-100			●		-100
●		●			-50	●		●		-50
	●	●			50		●	●		50
●	●	●			100	●	●	●		100
			●		150				●	150
●			●		200	●			●	200
	●		●		250		●		●	250
●	●		●		300	●	●	●		300
		●	●		350			●	●	350
●		●	●		400	●		●	●	400
	●	●	●		450		●	●	●	450
●	●	●	●		500	●	●	●		500
				●	550				●	550
●				●	600	●			●	600
	●			●	650		●		●	650
●	●			●	700	●	●		●	700
		●		●	750			●	●	750
●		●		●	800	●			●	800
	●	●		●	850		●	●	●	850
●	●	●		●	900	●	●	●	●	900
			●	●	950				●	950
●			●	●	1000	●			●	1000
	●		●	●	1050		●		●	1050
●	●		●	●	1100	●	●		●	1100
		●	●	●	1150			●	●	1150
●		●	●	●	1200	●		●	●	1200
	●	●	●	●	1300		●	●	●	1300
●	●	●	●	●	1400	●	●	●	●	1400

Default Settings

Cold Junction Compensation	ON
Sensor Type	Thermocouple of type J
Lower Value	0 °C
Upper Value	100 °C
Hysteresis	3 K
Rise/Fall Delay Time Relay/Digital Output (DO)	0 s

JUMPFLEX® Signal Conditioners

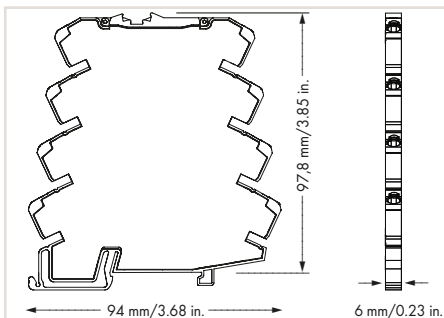
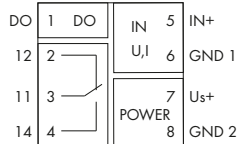
Threshold Value Switch with Analog Input and Changeover Relay Output

857 Series



JUMPFLEX® Threshold Value Switch, analog values, relay/1 changeover contact, digital output, configuration via software, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-531	1



Short description:

The 857-531 Threshold Value Switch for analog signals monitors analog standard signals and reports signals exceeding a preset threshold.

Features:

- PC configuration interface
- Digital switching output
- Changeover contact relay output
- Calibrated scale switching
- Threshold value configuration via DIP switches and teach-in function via push/slide switch
- Safe 3-way isolation with 2.5 kV test voltage acc. to EN 61140

Technical Data

Configuration	
Configuration	DIP switch, push/slide switch, interface configuration software, interface configuration app
Input	
Input signal	-10 ... +10 V, -20 ... +20 mA, 0 ... +30 V *
Input resistance	≤ 200 Ω (I input) > 100 kΩ (U input)
Max. input signal	31.2 V (U _{IN}) / 100 mA (I _{IN})
Output	
Output – Relay	
Contact type	1 changeover contact
Max. switching voltage	250 VAC
Max. continuous current (terminal blocks in a row)	max. 6 A (to 60 °C), 2 A (60 ... 70 °C)
Max. switching power (resistive)	1250 VAC
Number of switching thresholds	1 or 2 (adjustable) *
Configurable rise and fall delay time	0 ... 10 s (via DIP switch), 0 ... 30 s *
Output – Digital	
Max. switching voltage	Supply voltage applied
Max. continuous current	500 mA (to 60 °C) 100 mA (60 ... 70 °C)
General Specifications	
Response time	≤ 16 ms
Nominal supply voltage U _s	24 VDC
Supply voltage range	U _s -30 % ... +30 %
Current consumption at 24 VDC	≤ 25 mA
Transmission Error	≤ 0.1 % of the full scale value
Temperature coefficient	≤ 0.01 % / K
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61131-2
EMC emission of interference	EN 61000-6-4; EN 61131-2
Standards/Approvals	EN 50121-3-2, EN 50178, EN 61326-1
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-40 ... +85 °C
Safety and Protection	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min
Connection and Type of Mounting	
Wire connection	Push-in CAGE CLAMP®
Conductor range	
Solid	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Fine-stranded	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 in.
Dimensions and Weight	
Dimensions (mm) W x H x D	6 x 97.8 x 94, Height from upper-edge of DIN 35 rail
Weight	49 g
For additional approvals, see page 180.	

(*Additional setting options via interface configuration software or interface configuration app)

Special Functions



Configuration via



Accessories, see page 258

857-531

DIP Switch Adjustability

● = ON

DIP Switch S1

Input signal limits ± 0.25 V; ± 0.5 mA				Hysteresis	
1	2	3	4	5	
	●				± 10 V
	●			●	5 mV; 10 µA
		●			10 mV, 20 µA
	●	●			0 ... 10 V
	●	●			0 ... 5 V
	●		●		1 ... 5 V
	●	●	●		± 5 V
		●	●		0 ... 15 V
	●	●	●		0 ... 30 V
●					± 20 mA
●	●				0 ... 20 mA
●		●			4 ... 20 mA
●	●	●			0 ... 10 mA
●			●		2 ... 10 mA
●	●		●		± 10 mA

DIP Switch S1

Configurable rise/fall delay time in sec.				Digital output DO Signaling	
6	7	8	9	10	
					DO not active
●				●	GND → U _N (switching)
●	●		●	●	U _N → GND (switching)
		●			
		●			
	●	●			
	●	●			
●	●	●			

Default Settings

All DIP switches are in „OFF“ position for delivery.

Input	
Input range	± 10 V
Hysteresis	5 mV
Output	
Configurable rise/fall delay time	0 s
Digital output DO	not active

Push/Slide Switch Operation



Digital Output DO/Signaling

The digital output (DO) signals error messages and can be configured as follows: 24 V → 0 V/0 V → 24 V.

Switching Behavior	Configuration						
	Number of Switching Thresholds	Values for Switching Thresholds	Switching Threshold 1, Relay	Switching Threshold 2, Relay	Press for 1 sec. Yellow LED flashes	Red LED flashes briefly	No flashing LED
1 	1	S1	„On“	-			
2 	1	S1	„Off“	-			
3 	2	S1 < S2	„On“	„Off“			
4 	2	S1 < S2	„Off“	„On“			
5 	2	S1 > S2	„On“	„Off“			
6 	2	S1 > S2	„Off“	„On“			
Leave param. mode without storing a value	-	-	-	-			

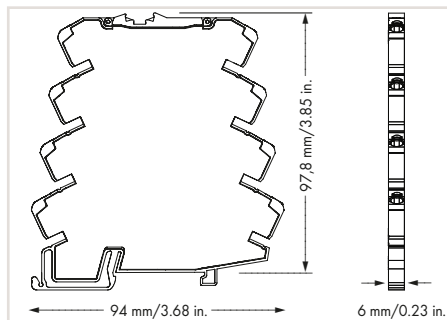
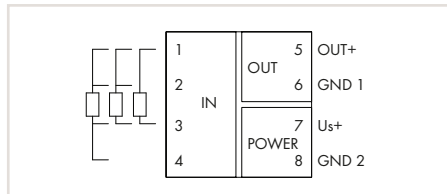
JUMPFLEX® Signal Conditioners

Temperature Signal Conditioner for Pt100, Pt200, Pt500 and Pt1000 as well as Resistance Sensors 857 Series



JUMPFLEX® Temperature Signal Conditioner for Pt Sensors, current and voltage output signal, configuration via software, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-800	1



Short description:

The 857-800 Temperature Signal Conditioner records Pt100, Pt200, Pt500, and Pt1000 Sensors, as well as resistors up to 4.5 kOhm, converting the temperature signal into an analog standard signal on the output side.

Features:

- For Pt100, Pt200, Pt500 and Pt1000 sensors, as well as resistors up to 4.5 kOhm
- 2-, 3-, and 4-wire connection technology
- Calibrated scale switching
- Sensor wire break/short circuit
- Measuring range underflow/overflow
- Clipping capability provides the analog signal limitation to output end values.
- Safe 3-way isolation with 2.5 kV test voltage acc. to EN 61140

Special Functions



Configuration via



Accessories, see page 258

Technical Data

Configuration

Configuration

DIP switch

Input

Input signal

Pt sensors and resistors

Sensor types

Pt100, Pt200, Pt500, Pt1000

Sensor Connection

2-wire, 3-wire, 4-wire (switchable)

Temperature range

-200 ... +850 °C

Sensor power supply

< 0.5 mA

Resistor input

0 ... 1 kΩ, 0 ... 4.5 kΩ

Output

Output signal

0 ... 10 mA, 2 ... 10 mA,
0 ... 20 mA, 4 ... 20 mA,
0 ... 5 V, 1 ... 5 V,
0 ... 10 V, 2 ... 10 V

Load impedance

≤ 600 Ω (Out = mA)
≥ 2 kΩ (Out = V)

Step response

180 ms (360 ms at 3-wire)

General Specifications

Nominal supply voltage U_s

24 VDC

Supply voltage range

$U_s -30\% \dots +30\%$

Current consumption at 24 VDC

≤ 40 mA

Transmission Error

≤ 0.1 % of upper range value

Transmission error of set measuring span

((10 K / set measuring span [K]) + 0.1)%

Temperature coefficient

≤ 0.02% /K

Conformity marking

CE

Environmental Requirements

Ambient operating temperature

-25 ... +70 °C

Storage temperature

-40 ... +85 °C

Safety and Protection

Test voltage

2.5 kV AC, 50 Hz, 1 min

(input/output/supply)

Connection and Type of Mounting

Wire connection

Push-in CAGE CLAMP®

Conductor range

0.08 ... 2.5 mm² / 28 ... 14 AWG

Solid

0.34 ... 2.5 mm² / 22 ... 14 AWG

Fine-stranded

Strip length

9 ... 10 mm / 0.35 ... 0.39 in.

Dimensions and Weight

Dimensions (mm) W x H x D

6 x 97.8 x 94, Height from upper-edge of DIN 35 rail

Weight

42 g

For additional approvals, see page 180.

857-800

DIP Switch Adjustability

● = ON

DIP Switch S1

Wire connection		Sensor type			Output signal					Measuring range underflow	Measuring range overflow	Wire break	Short circuit	
1	2	3	4	5	6	7	8	9	10					
		2-wire			Pt100			0 ... 20 mA			Lower limit of output range -5 % *	Upper limit of output range +2,5 % *	Upper limit of output range +5 % *	Lower limit of output range -12,5 % *
●		3-wire	●		Pt200	●		4 ... 20 mA			Lower limit of output range	Upper limit of output range +2,5 %	Upper limit of output range +5 %	Lower limit of output range
	●	4-wire		●	Pt500		●	0 ... 10 mA	●		Lower limit of output range	Upper limit of output range +2,5 %	Upper limit of output range +5 %	Lower limit of output range
			●	●	Pt1000	●	●	2 ... 10 mA			Lower limit of output range	Upper limit of output range	Upper limit of output range +5 %	Upper limit of output range +5 %
				●	1 kΩ		●	0 ... 10 V		●	Lower limit of output range	Upper limit of output range	Upper limit of output range +5 %	Upper limit of output range +5 %
			●	●	4.5 kΩ	●	●	2 ... 10 V			Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range
						●	●	0 ... 5 V	●	●	Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range
						●	●	1 ... 5 V			Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range

* acc. to NAMUR NE 43

DIP Switch S2

Start temperature				End temperature																																			
1	2	3	4	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F										
														●						75	167							●				210	410		●	●	475	887	
●				-200	-328	●						0	32	●						80	176	●					●				220	428	●			●	●	500	932
	●			-175	-283		●					5	41		●					85	185		●				●				230	446		●	●	525	997		
●	●			-150	-238	●	●					10	50	●	●					90	194	●	●				●				240	464	●	●		●	●	550	1022
		●		-125	-193			●				15	59			●				95	203			●			●				250	482			●	●	575	1067	
●		●		-100	-148	●		●				20	68	●		●				100	212	●		●			●				260	500	●		●	●	600	1112	
	●	●		-90	-130		●	●				25	77		●	●				110	230		●	●			●				270	518		●	●	●	625	1157	
●	●	●		-80	-112	●	●	●				30	86	●	●	●				120	248	●	●	●			●				280	536	●	●	●	●	650	1202	
			●	-70	-94				●			35	95				●	●		130	266				●		●				290	554			●	●	675	1247	
●			●	-60	-76	●		●				40	104	●		●				140	284	●		●			●				300	572	●		●	●	700	1292	
	●		●	-50	-58		●	●				45	113			●				150	302		●	●			●				325	617		●	●	●	725	1337	
●	●	●		-40	-40	●	●	●				50	122	●	●	●				160	320	●	●	●			●				350	662	●	●	●	●	750	1382	
		●	●	-30	-22			●	●			55	131			●	●			170	338			●	●		●				375	707			●	●	●	775	1427
●		●	●	-20	-4	●	●	●				60	140	●		●	●			180	356	●		●	●		●				400	752	●	●	●	●	800	1472	
	●	●	●	-10	14		●	●	●			65	149		●	●	●			190	374		●	●	●		●				425	797		●	●	●	825	1517	
●	●	●	●	0	32	●	●	●	●			70	158	●	●	●	●			200	392	●	●	●	●		●				450	842	●	●	●	●	850	1562	

The minimum distance from the start temperature to the end temperature may not fall short of 50K degrees on the Celsius (C) scale or 122K degrees on the Fahrenheit (F) scale.

Default Settings

All DIP switches are in „OFF“ position for delivery.	
Sensor connection	2-wire
Sensor type	Pt 100
Start temperature	0 °C
End temperature	100 °C
Output signal	0 ... 20 mA
Measuring range underflow	0 mA
Measuring range overflow	20.5 mA
Wire break	21 mA
Short circuit	0 mA

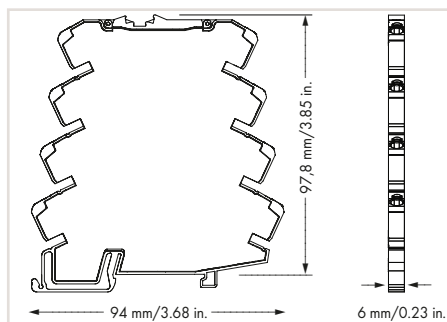
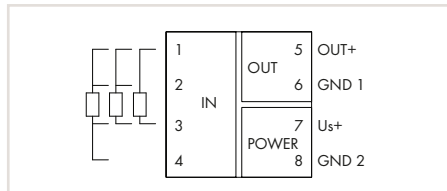
JUMPFLEX® Signal Conditioners

Temperature Signal Conditioner for Pt100, Pt200, Pt500 and Pt1000 as well as Resistance Sensors 857 Series



JUMPFLEX® Temperature Signal Conditioner for Pt Sensors, current and voltage output signal, configuration via software, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-801	1



Short description:

The 857-801 Temperature Signal Conditioner records Pt100, Pt200, Pt500, and Pt1000 Sensors, as well as resistors up to 4.5 kOhm, converting the temperature signal into an analog standard signal on the output side.

Features:

- PC configuration interface
- For Pt100, Pt200, Pt500 and Pt1000 sensors, as well as resistors up to 4.5 kOhm
- 2-, 3-, and 4-wire connection technology
- Calibrated scale switching
- Sensor wire break/short circuit
- Measuring range underflow/overflow
- Clipping capability provides the analog signal limitation to output end values.
- Safe 3-way isolation with 2.5 kV test voltage acc. to EN 61140

Special Functions



Configuration via



Accessories, see page 258

Technical Data

Configuration

Configuration

DIP switch, interface configuration software, interface configuration app

Input

Input signal

Pt sensors and resistors *

Sensor types

Pt100, Pt200, Pt500, Pt1000 *

Sensor Connection

2-wire, 3-wire, 4-wire (switchable)

Temperature range

-200 ... +850 °C

Sensor power supply

< 0.5 mA

Resistor input

0 ... 1 kΩ, 0 ... 4.5 kΩ *

Output

Output signal

0 ... 10 mA, 2 ... 10 mA,
0 ... 20 mA, 4 ... 20 mA,
0 ... 5 V, 1 ... 5 V,
0 ... 10 V, 2 ... 10 V *

Load impedance

≤ 600 Ω (Out = mA)
≥ 2 kΩ (Out = V)

Step response

180 ms (360 ms at 3-wire)

General Specifications

Nominal supply voltage U_s

24 VDC

Supply voltage range

$U_s - 30\% \dots +30\%$

Current consumption at 24 VDC

≤ 40 mA

Max. measuring span

50 K (50 Ω)

Transmission Error

≤ 0.1 % of upper range value

Transmission error of set measuring span

$((10 \text{ K} / \text{set measuring span [K]} + 0.1)\%)$

Temperature coefficient

≤ 0.02% /K

Conformity marking

CE

Environmental Requirements

Ambient operating temperature

-25 ... +70 °C

Storage temperature

-40 ... +85 °C

Safety and Protection

Test voltage

(input/output/supply)

2.5 kV AC, 50 Hz, 1 min

Connection and Type of Mounting

Wire connection

Push-in CAGE CLAMP®

Conductor range

Solid

0.08 ... 2.5 mm² / 28 ... 14 AWG

Fine-stranded

0.34 ... 2.5 mm² / 22 ... 14 AWG

Strip length

9 ... 10 mm / 0.35 ... 0.39 in.

Dimensions and Weight

Dimensions (mm) W x H x D

6 x 97.8 x 94, Height from upper-edge of DIN 35 rail

Weight

49.2 g

For additional approvals, see page 180.

(*Additional setting options as well as output signal inversion via PC configuration software or smartphone app)

857-801

DIP Switch Adjustability

● = ON

DIP Switch S1

Wire connection		Sensor type			Output signal					Measuring range underflow	Measuring range overflow	Wire break	Short circuit	
1	2	3	4	5	6	7	8	9	10					
		2-wire			Pt100			0 ... 20 mA			Lower limit of output range -5 % *	Upper limit of output range +2,5 % *	Upper limit of output range +5 % *	Lower limit of output range -12,5 % *
●		3-wire	●		Pt200	●		4 ... 20 mA			Lower limit of output range	Upper limit of output range +2,5 %	Upper limit of output range +5 %	Lower limit of output range
	●	4-wire		●	Pt500		●	0 ... 10 mA	●		Lower limit of output range	Upper limit of output range +2,5 %	Upper limit of output range +5 %	Lower limit of output range
			●	●	Pt1000	●	●	2 ... 10 mA			Lower limit of output range	Upper limit of output range +2,5 %	Upper limit of output range +5 %	Lower limit of output range
				●	1 kΩ		●	0 ... 10 V		●	Lower limit of output range	Upper limit of output range +2,5 %	Upper limit of output range +5 %	Upper limit of output range +5 %
			●	●	4,5 kΩ	●	●	2 ... 10 V			Lower limit of output range	Upper limit of output range +2,5 %	Upper limit of output range +5 %	Upper limit of output range +5 %
						●	●	0 ... 5 V		●	Lower limit of output range	Upper limit of output range +2,5 %	Upper limit of output range +5 %	Upper limit of output range +5 %
						●	●	1 ... 5 V	●	●	Lower limit of output range	Upper limit of output range +2,5 %	Upper limit of output range +5 %	Upper limit of output range +5 %

* acc. to NAMUR NE 43

DIP Switch S2

Start temperature						End temperature																																								
1	2	3	4	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F																	
														●						75	167							●						210	410				●	●	475	887				
●				-200	-328	●						0	32	●						80	176	●					●						220	428	●			●	●	500	932					
	●			-175	-283		●					5	41		●					85	185		●				●						230	446		●		●	●	525	997					
●	●			-150	-238	●	●					10	50	●	●					90	194	●	●				●						240	464	●	●		●	●	550	1022					
		●		-125	-193			●				15	59			●				95	203			●			●							250	482			●	●	●	575	1067				
●		●		-100	-148	●		●				20	68	●		●				100	212	●		●			●							260	500	●		●	●	●	600	1112				
	●	●		-90	-130		●	●				25	77		●	●				110	230		●	●			●							270	518		●	●	●	●	625	1157				
●	●	●		-80	-112	●	●	●				30	86	●	●	●				120	248	●	●	●			●							280	536	●	●	●	●	●	650	1202				
			●	-70	-94				●			35	95				●	●		130	266				●		●								290	554			●	●	●	675	1247			
●			●	-60	-76	●		●				40	104	●		●				140	284	●		●			●								300	572	●		●	●	●	700	1292			
	●		●	-50	-58		●	●				45	113		●					150	302		●		●			●								325	617		●	●	●	●	725	1337		
●	●	●		-40	-40	●	●	●				50	122	●	●	●				160	320	●	●	●			●									350	662	●	●	●	●	●	750	1382		
		●	●	-30	-22			●	●			55	131			●	●			170	338			●	●	●		●									375	707		●	●	●	●	775	1427	
●		●	●	-20	-4	●	●	●				60	140	●		●	●			180	356	●		●	●		●										400	752	●		●	●	●	800	1472	
	●	●	●	-10	14		●	●	●			65	149		●	●	●			190	374		●	●	●		●											425	797		●	●	●	●	825	1517
●	●	●	●	0	32	●	●	●	●			70	158	●	●	●	●			200	392	●	●	●	●		●											450	842	●	●	●	●	●	850	1562

The minimum distance from the start temperature to the end temperature may not fall short of 50K degrees on the Celsius (C) scale or 122K degrees on the Fahrenheit (F) scale.

Default Settings

All DIP switches are in „OFF“ position for delivery. This is the position used to parameterize the device via PC configuration software.

Sensor connection	2-wire
Sensor type	Pt 100
Start temperature	0 °C
End temperature	100 °C
Output signal	0 ... 20 mA
Measuring range underflow	0 mA
Measuring range overflow	20.5 mA
Wire break	21 mA
Short circuit	0 mA

JUMPFLEX® Signal Conditioners

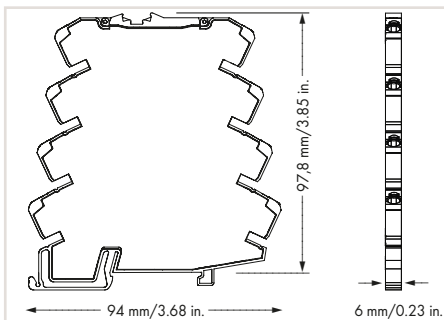
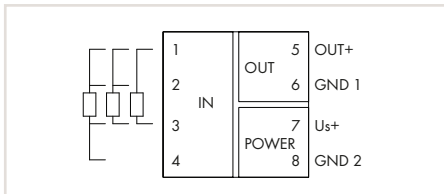
Temperature Signal Conditioner for Pt46 and Cu53

857 Series



JUMPFLEX® Temperature Signal Conditioner for Pt and Cu Sensors, Pt46 and Cu53, current and voltage output signal, configuration via DIP switch, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-808	1



Short description:

The 857-808 Temperature Signal Conditioner records signals from Pt46 and Cu53 sensors and converts the temperature signal into an analog standard signal on the output side.

Features:

- 2-, 3-, and 4-wire connection technology
- Calibrated scale switching
- Detection: wire break/sensor short circuit
- Detection: measuring range underflow/overflow
- Clipping capability allows analog standard signal limitation to upper range values.
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Special Functions

Configuration via



Accessories,
see page 258

Technical Data

Configuration	DIP switch
Input	
Input signal	Pt46 and Cu53 sensors
Sensor types	Pt46, Cu53
Sensor Connection	2-wire, 3-wire, 4-wire (switchable)
Temperature range	Pt46: -200 ... +300 °C Cu53: 0 ... +180 °C
Sensor power supply	< 0.5 mA
Output	
Output signal	0 ... 10 mA, 2 ... 10 mA, 0 ... 20 mA, 4 ... 20 mA, 0 ... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V
Load impedance	≤ 600 Ω (I output); ≥ 2 kΩ (Out = V)
Step response	180 ms (360 ms at 3-wire)
General Specifications	
Nominal supply voltage U_s	24 VDC
Supply voltage range	U_s -30 % ... +30 %
Current consumption at 24 VDC	≤ 40 mA
Max. measuring span	50 K
Transmission Error	≤ 0.1 % of upper range value
Transmission error of set measuring span	((10 K / set measuring span [K]) + 0.1)%
Temperature coefficient	≤ 0.02% /K
Conformity marking	CE
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-40 ... +85 °C
Safety and Protection	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min
Connection and Type of Mounting	
Wire connection	Push-in CAGE CLAMP®
Conductor range	
Solid	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Fine-stranded	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 in.
Dimensions and Weight	
Dimensions (mm) W x H x D	6 x 97.8 x 94, Height from upper-edge of DIN 35 rail
Weight	26.7 g

For additional approvals, see page 180.

857-808

DIP Switch Adjustability

● = ON

DIP Switch S1

Wire connection		Sensor type			Output signal					Measuring range underflow	Measuring range overflow	Wire break	Short circuit	
1	2	3	4	5	6	7	8	9	10					
		2-wire			Pt46						Lower limit of output range -5 % *	Upper limit of output range +2,5 % *	Upper limit of output range +5 % *	Lower limit of output range -12,5 % *
●		3-wire	●		Cu53	●					Lower limit of output range	Upper limit of output range +2,5 %	Upper limit of output range +5 %	Lower limit of output range
	●	4-wire					●			●	Lower limit of output range	Upper limit of output range	Upper limit of output range +5 %	Lower limit of output range
							●	●		●	Lower limit of output range	Upper limit of output range	Upper limit of output range +5 %	Upper limit of output range +5 %
							●	●		●	Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range
							●	●		●	Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range

* acc. to NAMUR NE 43

DIP Switch S2

Start temperature						End temperature																								
1	2	3	4	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	
				0	32							100	212						●		75	167						●	210	410
●				-200	-328	●						0	32	●					●		80	176	●				●	220	428	
	●			-175	-283		●					5	41		●				●		85	185		●			●	230	446	
●	●			-150	-238	●	●					10	50	●	●				●		90	194	●	●			●	240	464	
		●		-125	-193			●				15	59			●			●		95	203			●		●	250	482	
●		●		-100	-148	●		●				20	68	●		●			●		100	212	●		●		●	260	500	
	●	●		-90	-130		●	●				25	77		●	●			●		110	230		●	●		●	270	518	
●	●	●		-80	-112	●	●	●				30	86	●	●	●			●		120	248	●	●	●		●	280	536	
			●	-70	-94				●			35	95				●	●			130	266				●	●	290	554	
●		●		-60	-76	●		●				40	104	●		●	●		●		140	284	●		●	●	●	300	572	
	●	●		-50	-58		●	●	●			45	113		●	●	●		●		150	302								
●	●	●		-40	-40	●	●	●	●			50	122	●	●	●	●		●		160	320								
		●	●	-30	-22			●	●	●		55	131			●	●	●	●		170	338								
●		●	●	-20	-4	●		●	●			60	140	●		●	●	●	●		180	356								
	●	●	●	-10	14		●	●	●			65	149		●	●	●	●	●		190	374								
●	●	●	●	0	32	●	●	●	●			70	158	●	●	●	●	●	●		200	392								

Default Settings

All DIP switches are in „OFF“ position for delivery.	
Sensor connection	2-wire
Sensor type	Pt46
Start temperature	0 °C
End temperature	100 °C
Output signal	0 ... 20 mA
Measuring range underflow	0 mA
Measuring range overflow	20.5 mA
Wire break	21 mA
Short circuit	0 mA

JUMPFLEX® Signal Conditioners

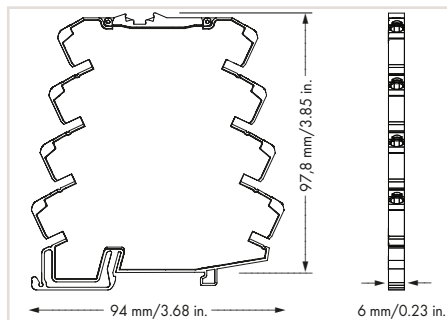
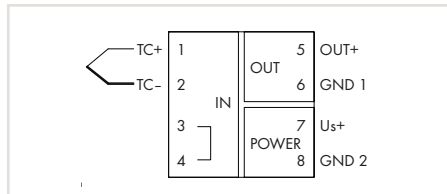
Temperature Signal Conditioner for Thermocouples of Types J and K

857 Series



JUMPFLEX® Temperature Signal Conditioner for Thermocouples, current and voltage output signal, configuration via DIP switch, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-810	1



Short description:

The 857-810 Temperature Signal Conditioner is suitable for the connection of type J and K thermocouples. On the output side, the thermocouple temperature signal conditioner converts the temperature signal into an analog standard signal.

Features:

- For type J and K thermocouples
- Cold junction compensation (on/off)
- Calibrated scale switching
- Sensor's wire break
- Measuring range underflow/overflow
- Clipping capability provides the analog signal limitation to output end values.
- Safe 3-way isolation with 2.5 kV test voltage acc. to EN 61140

Special Functions



Configuration via



Accessories, see page 258

Technical Data

Configuration	DIP switch
Input	Thermocouples
Input signal	Thermocouples of types J and K
Sensor types	Typ J: -150 ... +1200 °C Typ K: -150 ... +1350 °C
Temperature range	
Output	
Output signal	0 ... 10 mA, 2 ... 10 mA, 0 ... 20 mA, 4 ... 20 mA, 0 ... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V
Load impedance	≤ 600 Ω (Out = mA) ≥ 2 kΩ (Out = V)
Cold junction compensation	On/Off (default: On)
Cold junction error	3 K (type 2 K)
Step response	60 ms without cold junction compensation/ 120 ms with cold junction compensation
General Specifications	
Nominal supply voltage U_s	24 VDC
Supply voltage range	U_s -30 % ... +30 %
Current consumption at 24 VDC	≤ 40 mA
Max. measuring span	100 K
Transmission Error	≤ 0.1% at max. measuring span (type J,K)
Transmission error of set measuring span	(150 K / set measuring span [K]) %
Temperature coefficient	≤ 0.04% /K
Conformity marking	CE
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-40 ... +85 °C
Safety and Protection	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min
Connection and Type of Mounting	
Wire connection	Push-in CAGE CLAMP®
Conductor range	
Solid	0.08 ... 2.5 mm ² / 24 ... 14 AWG
Fine-stranded	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 in.
Dimensions and Weight	
Dimensions (mm) W x H x D	6 x 97.8 x 94, Height from upper-edge of DIN 35 rail
Weight	44.7 g

For additional approvals, see page 180.

857-810

DIP Switch Adjustability

● = ON

DIP Switch S1

1	Cold junction compensation	Sensor type			Output signal			7	8	Measuring range underflow	Measuring range overflow	Wire break
		2	3	4	5	6						
	on			J			0 ... 20 mA			Lower limit of output range -5 % *	Upper limit of output range +2,5 % *	Upper limit of output range +5 % *
●	off	●		K	●		4 ... 20 mA			Lower limit of output range	Upper limit of output range +2,5 %	Upper limit of output range +5 %
						●	0 ... 10 mA	●		Lower limit of output range	Upper limit of output range +2,5 %	Upper limit of output range +5 %
						●	2 ... 10 mA			Lower limit of output range	Upper limit of output range	Upper limit of output range +5 %
						●	0 ... 10 V		●	Lower limit of output range	Upper limit of output range	Upper limit of output range +5 %
						●	2 ... 10 V		●	Lower limit of output range	Upper limit of output range	Lower limit of output range
						●	0 ... 5 V		●	Lower limit of output range	Upper limit of output range	Lower limit of output range
						●	1 ... 5 V		●	Lower limit of output range	Upper limit of output range	Lower limit of output range

DIP 9 and 10 n.c.

* acc. to NAMUR NE 43

DIP Switch S2

Start temperature						End temperature																															
1	2	3	4	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F								
														●						225	437							●	625	1157					●	1025	1877
●				-200	-328	●						0	32	●						250	482	●					●	650	1202	●				●	1050	1922	
	●			-175	-283		●					10	50		●					275	527		●				●	675	1247		●			●	1075	1967	
●	●			-150	-283	●	●					20	68	●	●					300	572	●	●				●	700	1292	●	●			●	1100	2012	
		●		-125	-193			●				30	86			●				325	617			●			●	725	1337			●		●	1125	2057	
●		●		-100	-148	●		●				40	104	●	●					350	662	●	●				●	750	1382	●	●			●	1150	2102	
	●	●		-90	-130		●	●				50	122		●	●				375	707	●	●				●	775	1427		●	●		●	1175	2147	
●	●	●		-80	-112	●	●	●				60	140	●	●	●				400	752	●	●	●			●	800	1472	●	●	●		●	1200	2192	
			●	-70	-94				●			70	158				●	●		425	797				●		●	825	1517			●	●	●	1225	2237	
●		●		-60	-76	●			●			80	176	●	●	●				450	842	●		●			●	850	1562	●		●	●	●	1250	2282	
	●	●		-50	-58		●	●	●			90	194		●	●	●			475	887	●	●	●			●	875	1607		●	●	●	●	1275	2327	
●	●	●		-40	-40	●	●	●				100	212	●	●	●	●			500	932	●	●	●			●	900	1652	●	●	●	●	●	1300	2372	
		●	●	-30	-22			●	●			125	257			●	●			525	977			●	●		●	925	1697			●	●	●	1325	2417	
●		●	●	-20	-4	●		●	●			150	302	●	●	●	●			550	1022	●	●	●			●	950	1742	●	●	●	●	●	1350	2462	
	●	●	●	-10	14		●	●	●			175	347		●	●	●			575	1067		●	●	●		●	975	1787		●	●	●	●	1375	2507	
●	●	●	●	0	32	●	●	●	●			200	392	●	●	●	●			600	1112	●	●	●			●	1000	1832	●	●	●	●	●	1400	2552	

The minimum distance from the start temperature to the end temperature may not fall short of 100K degrees on the Celsius (C) scale or 212K degrees on the Fahrenheit (F) scale.

Default Settings

All DIP switches are in „OFF“ position for delivery.	
Cold junction compensation	on
Thermocouple	Type J
Start temperature	0 °C
End temperature	1000 °C
Output signal	0 ... 20 mA
Measuring range underflow	0 mA
Measuring range overflow	20.5 mA
Wire break	21 mA

JUMPFLEX® Signal Conditioners

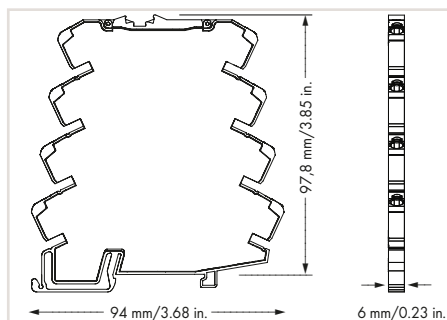
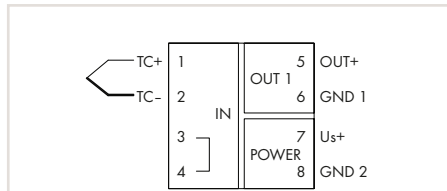
Temperature Signal Conditioner for Thermocouples of Types J and K

857 Series



JUMPFLEX® Temperature Signal Conditioner for Thermocouples, current and voltage output signal, configuration via software, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-811	1



Short description:

The 857-811 Temperature Signal Conditioner is suitable for the connection of type J and K (E, R, N, S, T, B, C) thermocouples. On the output side, the thermocouple temperature signal conditioner converts the temperature signal into an analog standard signal.

Features:

- PC configuration interface
- For type J and K (E, R, N, S, T, B, C) thermocouples
- Cold junction compensation (on/off)
- Calibrated scale switching
- Sensor's wire break
- Measuring range underflow/overflow
- Clipping capability provides the analog signal limitation to output end values.
- Safe 3-way isolation with 2.5 kV test voltage acc. to EN 61140

Special Functions



Configuration via



Accessories, see page 258

Technical Data

Configuration

Configuration

DIP switch, interface configuration software, interface configuration app

Input

Input signal

Thermocouples

Sensor types

Thermocouples of types J, K (E, R, N, S, T, B, C, L)*

Temperature range

Typ J: -150 ... +1200 °C
Typ K: -150 ... +1350 °C

Output

Output signal

0 ... 10 mA, 2 ... 10 mA,
0 ... 20 mA, 4 ... 20 mA,
0 ... 5 V, 1 ... 5 V,
0 ... 10 V, 2 ... 10 V *

Load impedance

≤ 600 Ω (Out = mA)
≥ 2 kΩ (Out = V)

Cold junction compensation

on/off (default: on) *

Cold junction error

3 K (type 2 K)

Step response

60 ms without cold junction compensation/
120 ms with cold junction compensation

General Specifications

Nominal supply voltage U_s

24 VDC

Supply voltage range

$U_s - 30\% \dots +30\%$

Current consumption at 24 VDC

≤ 40 mA

Max. measuring span

100 K

Transmission Error

≤ 0.1% at max. measuring span (type J,K)

Transmission error of set measuring span

(150 K / set measuring span [K]) %

Temperature coefficient

≤ 0.04% /K

Conformity marking

CE

Environmental Requirements

Ambient operating temperature

-25 ... +70 °C

Storage temperature

-40 ... +85 °C

Safety and Protection

Test voltage

(input/output/supply)
2.5 kV AC, 50 Hz, 1 min

Connection and Type of Mounting

Wire connection

Push-in CAGE CLAMP®

Conductor range

Solid

0.08 ... 2.5 mm² / 28 ... 14 AWG

Fine-stranded

0.34 ... 2.5 mm² / 22 ... 14 AWG

Strip length

9 ... 10 mm / 0.35 ... 0.39 in.

Dimensions and Weight

Dimensions (mm) W x H x D

6 x 97.8 x 94, Height from upper-edge of DIN 35 rail

Weight

49.2 g

For additional approvals, see page 180.

(*Additional setting options as well as output signal inversion via PC configuration software or smartphone app)

857-811

DIP Switch Adjustability

● = ON

DIP Switch S1

Cold junction compensation	Sensor type			Output signal				7	8	Measuring range underflow	Measuring range overflow	Wire break
	2	3	4	5	6							
on			J				0 ... 20 mA			Lower limit of output range -5 % *	Upper limit of output range +2,5 % *	Upper limit of output range +5 % *
off	●		K	●			4 ... 20 mA					
					●		0 ... 10 mA	●		Lower limit of output range	Upper limit of output range +2,5 %	Upper limit of output range +5 %
					●	●	2 ... 10 mA					
						●	0 ... 10 V		●	Lower limit of output range	Upper limit of output range	Upper limit of output range +5 %
					●	●	2 ... 10 V					
						●	0 ... 5 V	●	●	Lower limit of output range	Upper limit of output range	Lower limit of output range
					●	●	1 ... 5 V					

DIP 9 and 10 n.c.

* acc. to NAMUR NE 43

DIP Switch S2

Start temperature						End temperature																														
1	2	3	4	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F							
														●						225	437						●	625	1157				●	1025	1877	
●				-200	-328	●						0	32	●						250	482	●					●	650	1202	●			●	1050	1922	
	●			-175	-283		●					10	50		●					275	527		●				●	675	1247		●		●	1075	1967	
●	●			-150	-283	●	●					20	68	●	●					300	572	●	●				●	700	1292	●	●		●	1100	2012	
		●		-125	-193			●				30	86			●				325	617			●			●	725	1337			●	●	1125	2057	
●		●		-100	-148	●		●				40	104	●	●					350	662	●	●				●	750	1382	●	●		●	1150	2102	
	●	●		-90	-130		●	●				50	122		●	●				375	707		●	●			●	775	1427		●	●	●	1175	2147	
●	●	●		-80	-112	●	●	●				60	140	●	●	●				400	752	●	●	●			●	800	1472	●	●	●	●	1200	2192	
			●	-70	-94				●			70	158				●	●		425	797				●		●	825	1517			●	●	1225	2237	
●		●		-60	-76	●			●			80	176	●	●	●				450	842	●		●			●	850	1562	●		●	●	1250	2282	
	●	●		-50	-58		●	●				90	194		●	●	●			475	887		●	●			●	875	1607		●	●	●	1275	2327	
●	●	●		-40	-40	●	●	●				100	212	●	●	●				500	932	●	●	●			●	900	1652	●	●	●	●	1300	2372	
		●	●	-30	-22			●	●			125	257			●	●			525	977			●	●		●	925	1697			●	●	●	1325	2417
●		●	●	-20	-4	●		●	●			150	302	●	●	●				550	1022	●	●	●			●	950	1742	●	●	●	●	1350	2462	
	●	●	●	-10	14		●	●	●			175	347		●	●	●			575	1067		●	●	●		●	975	1787		●	●	●	●	1375	2507
●	●	●	●	0	32	●	●	●	●			200	392	●	●	●	●			600	1112	●	●	●			●	1000	1832	●	●	●	●	1400	2552	

The minimum distance from the start temperature to the end temperature may not fall short of 100K degrees on the Celsius (C) scale or 212K degrees on the Fahrenheit (F) scale.

Default Settings

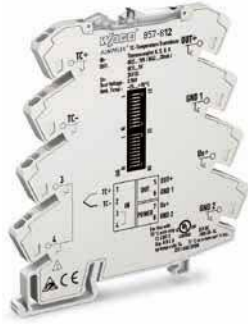
All DIP switches are in „OFF“ position for delivery. This is the position used to parameterize the device via PC configuration software.

Cold junction compensation	on
Thermocouple	Type J
Start temperature	0 °C
End temperature	1000 °C
Output signal	0 ... 20 mA
Measuring range underflow	0 mA
Measuring range overflow	20.5 mA
Wire break	21 mA

JUMPFLEX® Signal Conditioners

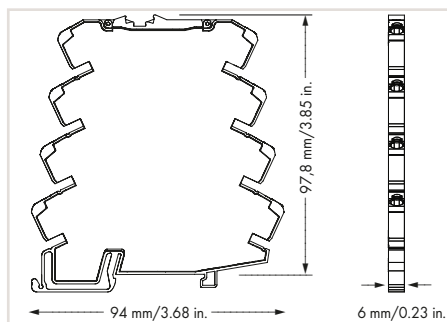
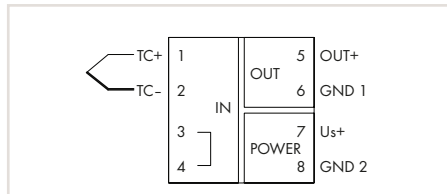
Temperature Signal Conditioner for Thermocouples of Types K, S, B and R

857 Series



JUMPFLEX® Temperature Signal Conditioner for Thermocouples, current and voltage output signal, configuration via DIP switch, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-812	1



Short description:

The 857-812 Temperature Signal Conditioner is suitable for the connection of type K, S, B and R thermocouples. On the output side, the thermocouple temperature signal conditioner converts the temperature signal into an analog standard signal.

Features:

- For type K, S, B and R thermocouples
- Cold junction compensation (on/off)
- Calibrated scale switching
- Sensor's wire break
- Detection: measuring range underflow/overflow
- Clipping capability allows analog standard signal limitation to upper range values.
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Special Functions

Configuration via



Accessories, see page 258

Technical Data

Configuration	DIP switch
Input	Thermocouples
Input signal	Thermocouples of types K, S, B, R
Sensor types	Type K: 0 ... +1200 °C Type S: 0 ... +1600 °C Type B: +600 ... +1800 °C Type R: 0 ... +1600 °C
Temperature range	
Output	0 ... 10 mA, 2 ... 10 mA, 0 ... 20 mA, 4 ... 20 mA, 0 ... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V
Output signal	≤ 600 Ω (l output); ≥ 2 kΩ (Out = V)
Load impedance	On/Off (default: On)
Cold junction compensation	3 K (type 2 K)
Cold junction error	60 ms without cold junction compensation/ 120 ms with cold junction compensation
Step response	
General Specifications	
Nominal supply voltage U_s	24 VDC
Supply voltage range	U_s -30 % ... +30 %
Current consumption at 24 VDC	≤ 40 mA
Transmission Error	≤ 0.1 % of upper range value
Transmission error of set measuring span	(150 K / set measuring span [K]) %
Temperature coefficient	≤ 0.04% /K
Conformity marking	CE
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-40 ... +85 °C
Safety and Protection	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min
Connection and Type of Mounting	
Wire connection	Push-in CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Solid	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Fine-stranded	9 ... 10 mm / 0.35 ... 0.39 in.
Strip length	
Dimensions and Weight	
Dimensions (mm) W x H x D	6 x 97.8 x 94, Height from upper-edge of DIN 35 rail
Weight	45 g

For additional approvals, see page 180.

857-812

DIP Switch Adjustability

● = ON

DIP Switch S1

Cold junction compensation		Sensor type		Output signal						Measuring range underflow	Measuring range overflow	Wire break
1		2	3	4	5	6		7	8			
	on			K			0 ... 20 mA			Lower limit of output range -5 % *	Upper limit of output range +2.5 % *	Upper limit of output range +5 % *
●	off	●		S	●		4 ... 20 mA					
			●	B		●	0 ... 10 mA	●		Lower limit of output range	Upper limit of output range +2.5 %	Upper limit of output range +5 %
			●	R	●	●	2 ... 10 mA					
						●	0 ... 10 V		●	Lower limit of output range	Upper limit of output range	Upper limit of output range +5 %
					●	●	2 ... 10 V					
					●	●	0 ... 5 V		●	Lower limit of output range	Upper limit of output range	Lower limit of output range
					●	●	1 ... 5 V		●			

DIP Switch S1 (9) n.c.

* acc. to NAMUR NE 43

DIP Switch S1+S2

Start temperature					End temperature														
S1		S2			°C	S2					°C	S2					°C		
10	1	2	3	4		5	6	7	8	9	10		5	6	7	8	9	10	
					0							1000	●		●		●		1000
●					50	●						0		●	●		●		1050
	●				100		●					50	●	●	●		●		1100
●	●				150	●	●					100				●	●		1150
		●			200			●				150	●			●	●		1200
●		●			250	●		●				200		●		●	●		1250
	●	●			300		●	●				250	●	●		●	●		1300
●	●	●			350	●	●	●				300			●	●	●		1350
			●		400				●			350	●		●	●	●		1400
●			●		450	●			●			400		●	●	●	●		1450
	●		●		500		●		●			450	●	●	●	●	●		1500
●	●		●		550	●	●					500						●	1550
		●	●		600			●	●			550	●					●	1600
●		●	●		650	●		●	●			600		●				●	1650
	●	●	●		700		●	●	●			650	●	●				●	1700
●	●	●	●		750	●	●	●	●			700			●			●	1750
				●	800					●		750	●		●			●	1800
●				●	850	●				●		800							
	●			●	900		●			●		850							
●	●			●	950	●	●			●		900							
		●		●	1000			●		●		950							

Default Settings

All DIP switches are in „OFF“ position for delivery.	
Cold junction compensation	on
Thermocouple	Type K
Start temperature	0 °C
End temperature	1000 °C
Output signal	0 ... 20 mA
Measuring range underflow	0 mA
Measuring range overflow	20.5 mA
Wire break	21 mA

JUMPFLEX® Signal Conditioners

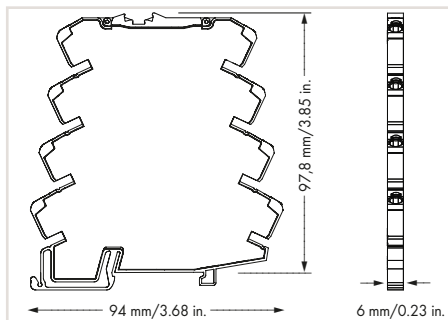
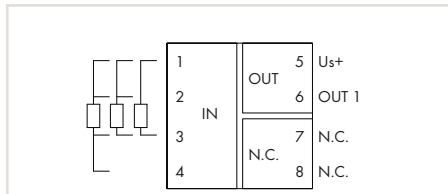
Loop-Powered RTD Temperature Signal Conditioner

857 Series



JUMPFLEX® Loop-Powered RTD Temperature Signal Conditioner for Pt Sensors, current output signal, configuration via DIP switch, power via output, 6 mm wide

Item No.	Pack. Unit
857-815	1



Short description:

The 857-815 Loop-Powered RTD Temperature Signal Conditioners record Pt100, Pt200, Pt500 and Pt1000 sensors and resistors up to 4.5 kΩ, and convert the temperature signal into an analog standard signal on the output side.

Features:

- No additional supply voltage required
- For Pt100, Pt200, Pt500 and Pt1000 sensors, as well as resistors up to 4.5 kΩ
- 2-, 3-, and 4-wire connection technology
- Calibrated scale switching
- Detection: wire break/sensor short circuit
- Safe 3-way isolation with 3 kV test voltage per EN 61010-1

Technical Data

Configuration	
Configuration	DIP switch
Input	
Input signal	Pt sensors and resistors
Sensor types	Pt100, Pt200, Pt500, Pt1000
Sensor Connection	2-wire, 3-wire, 4-wire (switchable)
Temperature range	-200 ... +850 °C
Sensor power supply	< 0.5 mA
Resistor input	0 ... 1 kΩ, 0 ... 4.5 kΩ
Output	
Output signal	4 ... 20 mA, 20 ... 4 mA
Load impedance	≤ 600 Ω (Out = mA)
Refresh cycle	< 1 s (acc. to NAMUR NE 89)
General Specifications	
Nominal supply voltage U_s	8 ... 30 V, power is derived from the output circuit
Max. measuring span	50 K
Transmission Error	≤ 0.1 % of upper range value
Transmission error of set measuring span	((40 K / set measuring span [K]) + 0.1)%
Temperature coefficient	≤ 0.02% /K
Conformity marking	CE
Standards/Approvals	EN 61010-1, EN 61326-1
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-40 ... +85 °C
Safety and Protection	
Test voltage (input/output/supply)	AC 3 kV, 50 Hz, 1 min
Protection type	IP20
Connection and Type of Mounting	
Wire connection	Push-in CAGE CLAMP®
Conductor range	
Solid	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Fine-stranded	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 in.
Dimensions and Weight	
Dimensions (mm) W x H x D	6 x 97.8 x 94, Height from upper-edge of DIN 35 rail
Weight	39 g

Configuration via



Accessories,
see page 258

857-815

DIP Switch Adjustability

● = ON

DIP Switch S1

Sensor connection		Sensor type			Output Signal		N.C.			Measuring range underflow	Measuring range overflow	Wire break	Short circuit
1	2	3	4	5	6	7	8	9	10				
	2-wire			Pt100	4 ... 20 mA					Lower limit of output range -5 % *	Upper limit of output range +2,5 % *	Upper limit of output range +5 % *	Lower limit of output range -12,5 % *
●	3-wire	●		Pt200	20 ... 4 mA					Lower limit of output range	Upper limit of output range +2,5 %	Upper limit of output range +5 %	Lower limit of output range
	4-wire		●	Pt500					●	Lower limit of output range	Upper limit of output range +2,5 %	Upper limit of output range +5 %	Lower limit of output range
●	2-wire	●	●	Pt1000						Lower limit of output range	Upper limit of output range	Upper limit of output range +5 %	Upper limit of output range +5 %
				1 kΩ						Lower limit of output range	Upper limit of output range	Upper limit of output range +5 %	Upper limit of output range +5 %
			●	4,5 kΩ					●	Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range
									●	Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range

*per NAMUR NE 43

DIP Switch S2

Output Signal Start temperature				Output Signal End temperature																																		
1	2	3	4	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F									
				0	32							100	212						●		75	167						●	210	410				●	●	475	887	
●				-200	-328	●						0	32	●					●	80	176	●					●	220	428	●				●	●	500	932	
	●			-175	-283		●					5	41		●				●	85	185		●				●	230	446		●			●	●	525	997	
●	●			-150	-238	●	●					10	50	●	●				●	90	194	●	●				●	240	464	●	●			●	●	550	1022	
		●		-125	-193			●				15	59			●			●	95	203			●			●	250	482			●		●	●	575	1067	
●	●			-100	-148	●	●					20	68	●	●				●	100	212	●	●				●	260	500	●	●			●	●	600	1112	
	●	●		-90	-130		●	●				25	77		●	●			●	110	230		●	●			●	270	518		●	●		●	●	625	1157	
●	●	●		-80	-112	●	●	●				30	86	●	●	●			●	120	248	●	●	●			●	280	536	●	●	●		●	●	650	1202	
			●	-70	-94				●			35	95						●	130	266				●		●	290	554				●	●	●	675	1247	
●			●	-60	-76	●		●				40	104	●					●	140	284	●		●			●	300	572	●			●	●	●	700	1292	
	●		●	-50	-58		●	●				45	113		●				●	150	302		●	●			●	325	617				●	●	●	725	1337	
●	●		●	-40	-40	●	●	●				50	122	●	●				●	160	320	●	●	●			●	350	662	●	●			●	●	●	750	1382
		●	●	-30	-22			●	●			55	131			●	●		●	170	338			●	●		●	375	707			●	●	●	●	●	775	1427
●		●	●	-20	-4	●	●	●				60	140	●		●	●		●	180	356	●	●	●			●	400	752	●		●	●	●	●	●	800	1472
	●	●	●	-10	14		●	●	●			65	149		●	●	●		●	190	374		●	●	●		●	425	797		●	●	●	●	●	●	825	1517
●	●	●	●	0	32	●	●	●	●			70	158	●	●	●	●		●	200	392	●	●	●	●		●	450	842	●	●	●	●	●	●	●	850	1562

The minimum distance from the start temperature to the end temperature may not fall short of 50K degrees on the Celsius (C) scale or 122K degrees on the Fahrenheit (F) scale.

Default Settings

All DIP switches are in „OFF“ position for delivery.	
Sensor connection	2-wire
Sensor type	Pt100
Start temperature	0 °C
End temperature	100 °C
Output signal	4 ... 20 mA
Measuring range underflow	3.8 mA
Measuring range overflow	20.5 mA
Wire break	21 mA
Short circuit	3.5 mA

JUMPFLEX® Signal Conditioners

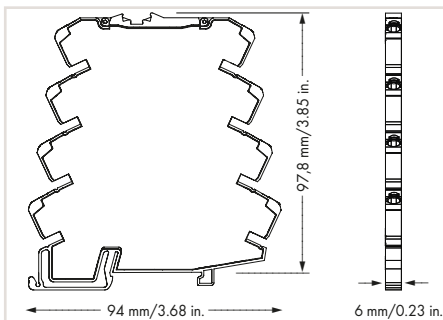
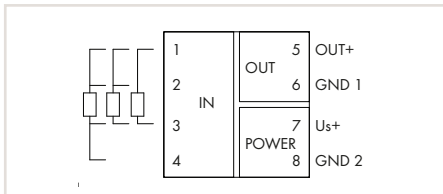
Ni Signal Conditioner for Ni100, Ni120, Ni200, Ni500, Ni1000

857 Series



JUMPFLEX® Temperature Signal Conditioner for Ni Sensors, current and voltage output signal, configuration via DIP switch, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-818	1



Short description:

The 857-818 Ni Signal Conditioner (Ni = nickel) records signals from Ni sensors featuring all standard characteristics. On the output side, the Ni temperature signal conditioner converts the temperature signal into an analog standard signal.

Features:

- For Ni100, Ni120, Ni200; Ni500 und Ni1000 sensors
- Calibrated scale switching
- Clipping capability provides the analog signal limitation to output end values.
- Safe 3-way isolation with 2.5 kV test voltage acc. to EN 61140

Special Functions



Configuration via



Accessories,
see page 258

Technical Data

Configuration	DIP switch
Input	Ni sensors
Input signal	± 31.2 VDC
Max. input signal	Ni100, Ni120, Ni200, Ni500, Ni1000
Sensor types	2-wire, 3-wire, 4-wire (switchable)
Sensor Connection	
Output	
Output signal	0 ... 10 mA, 2 ... 10 mA, 0 ... 20 mA, 4 ... 20 mA, 0 ... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V
Load impedance	$\leq 600 \Omega$ (Out = mA) $\geq 2 \text{ k}\Omega$ (Out = V)
Step response	< 60 ms at 2-wire and 4-conductor measurement < 120 ms at 3-conductor measurement
General Specifications	
Nominal supply voltage U_s	24 VDC
Supply voltage range	$U_s -30 \% \dots +30 \%$
Current consumption at 24 VDC	≤ 40 mA
Transmission Error	$\leq 0.1 \%$ of the full scale value
Conformity marking	CE
Environmental Requirements	
Ambient operating temperature	$-25 \dots +70$ °C
Storage temperature	$-40 \dots +85$ °C
Safety and Protection	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min
Connection and Type of Mounting	
Wire connection	Push-in CAGE CLAMP®
Conductor range	
Solid	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Fine-stranded	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 in.
Dimensions and Weight	
Dimensions (mm) W x H x D	6 x 97.8 x 94, Height from upper-edge of DIN 35 rail
Weight	50 g

For additional approvals, see page 180.

857-818

DIP Switch Adjustability

● = ON

DIP Switch S1

Connection Technology		Temperature Coefficient		Sensor Type		
1	2	3	4	5	6	7
	2-conductor					Ni 100
●	3-conductor	●		●		Ni 120
●	4-conductor	●	●	●	●	Ni 200
		●	●	●	●	Ni 500
					●	Ni 1000

DIP Switch S1

Start Temperature				End Temperature																	
8	9	10	°C	1	2	3	4	5	T / °C	1	2	3	4	5	T / °C	1	2	3	4	5	T / °C
●			-60	●					0	●	●				100	●	●			●	200
	●		-50		●				10			●	●		110		●	●		●	210
●	●		-40	●	●				20	●	●	●			120	●	●	●		●	220
		●	-30			●			30		●	●	●		130				●	●	230
●		●	-20	●		●			40	●	●	●	●		140	●			●	●	240
	●	●	-10		●	●			50					●	150		●		●	●	250
●	●	●	0	●	●	●			60	●				●	160	●	●		●	●	260
							●		70		●			●	170			●	●	●	270
				●			●		80	●	●			●	180	●		●	●	●	280
					●		●		90			●		●	190		●	●	●	●	290
																●	●	●	●	●	300

DIP Switch S2

Output Signal			9	10	Measuring Range Underflow	Measuring Range Overflow	Wire Break	Short Circuit
6	7	8						
		0 ... 20 mA			Lower limit of output range -5 % **2	Upper limit of output range +2.5 % *2	Upper limit of output range 5 % *2	Lower limit of output range -12.5 % **2
●		4 ... 20 mA			Lower limit of output range	Upper limit of output range +2.5 %	Upper limit of output range 5 %	Lower limit of output range
	●	0 ... 10 mA	●		Lower limit of output range	Upper limit of output range	Upper limit of output range 5 %	Upper limit of output range 5 %
	●	2 ... 10 mA		●	Lower limit of output range	Upper limit of output range	Upper limit of output range 5 %	Upper limit of output range 5 %
		0 ... 10 V			Lower limit of output range	Upper limit of output range	Upper limit of output range 5 %	Upper limit of output range 5 %
●		2 ... 10 V		●	Lower limit of output range	Upper limit of output range	Upper limit of output range 5 %	Upper limit of output range 5 %
	●	0 ... 5 V	●	●	Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range
●	●	1 ... 5 V			Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range

* but not when lower limit of output range = 0V or 0mA

**2 acc. to NAMUR NE 43

Default Setting

All DIP switches are in "OFF" position for delivery.	
Sensor connection	2-conductor
Sensor type	NI 100
Temperature coefficient	6178 ppm/K
Start temperature	0 °C
End temperature	100 °C
Output signal	0 ... 20 mA
Measuring range underflow	0 mA
Measuring range overflow	20.5 mA
Wire break	21 mA

JUMPFLEX® Signal Conditioners

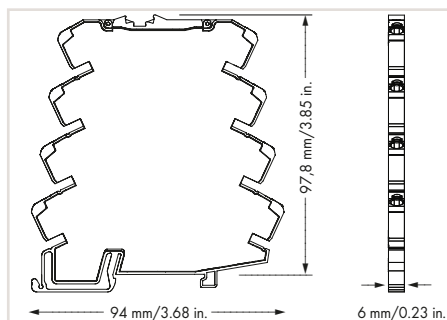
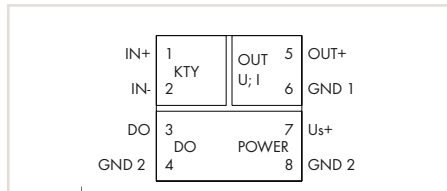
KTY Signal Conditioner

857 Series



JUMPFLEX® Temperature Signal Conditioner for KTY Sensors, current and voltage output signal, configuration via DIP switch, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-820	1



Short description:

The 857-820 KTY Signal Conditioner records signals from KTY sensors featuring all standard characteristics. On the output side, the KTY temperature signal conditioner converts the temperature signal into an analog standard signal.

Features:

- Supports all standard KTY sensors
- Calibrated scale switching
- Clipping capability allows analog standard signal limitation to upper range values
- Safe 3-way isolation with 2.5 kV test voltage acc. to EN 61140

Special Functions



Configuration via



Accessories,
see page 258

Technical Data

Configuration

Configuration

Input

Input signal
Max. input signal

Sensor types

Sensor Connection

Output

Output signal

Load impedance

Step response

Output – Digital

Max. switching voltage

Max. continuous current

General Specifications

Nominal supply voltage U_s

Supply voltage range

Current consumption at 24 VDC

Transmission Error

Conformity marking

Environmental Requirements

Ambient operating temperature

Storage temperature

Safety and Protection

Test voltage

(input/output/supply)

Connection and Type of Mounting

Wire connection

Conductor range

Solid

Fine-stranded

Strip length

Dimensions and Weight

Dimensions (mm) W x H x D

Weight

For additional approvals, see page 180.

DIP switch

KTY sensors

± 30 VDC

KTY81-110, KTY81-120, KTY81-150 KTY82-110, KTY82-120, KTY82-150, KTY81-121, KTY82-121, KTY81-122, KTY82-122, KTY81-210, KTY81-220, KTY82-210, KTY82-220, KTY81-221, KTY82-221, KTY81-222, KTY82-222, KTY81-250, KTY82-250, KTY83-110, KTY83-120, KTY83-150, KTY83-121, KTY83-122, KTY83-151, KTY84-130, KTY84-150, KTY84-151, KTY16, KTY19, ST13, ST20

2 conductors

0 ... 10 mA, 2 ... 10 mA,
0 ... 20 mA, 4 ... 20 mA,
0 ... 5 V, 1 ... 5 V,
0 ... 10 V, 2 ... 10 V

≤ 600 Ω (Out = mA)
≥ 2 kΩ (Out = V)

< 50 ms

Supply voltage applied

500 mA (to 60 °C)
100 mA (60 ... 70 °C)

24 VDC

U_s -30 % ... +30 %

≤ 40 mA

≤ 0.1 % of the full scale value

CE

-25 ... +70 °C

-40 ... +85 °C

2.5 kV AC, 50 Hz, 1 min

Push-in CAGE CLAMP®

0.08 ... 2.5 mm² / 28 ... 14 AWG

0.34 ... 2.5 mm² / 22 ... 14 AWG

9 ... 10 mm / 0.35 ... 0.39 in.

6 x 97.8 x 94, Height from upper-edge of DIN 35 rail

50 g

857-820

DIP Switch Adjustability

● = ON

DIP Switch S1

Sensor Type			
1	2	3	4
●			
	●		
●	●		
		●	
●		●	
	●	●	
●	●	●	
			●
●			●
	●		●
●	●		●
		●	●
●		●	●
	●	●	●
●	●	●	●

DIP Switch S2

Start Temperature				End Temperature																		
1	2	3	°C	4	5	6	7	8	°C	4	5	6	7	8	°C	4	5	6	7	8	°C	
●			-55	●					0	●	●				100	●		●			●	200
	●		-50		●				10			●	●		110		●	●			●	210
●	●		-40	●	●				20	●		●	●		120	●	●	●			●	220
		●	-30			●			30		●	●	●		130					●	●	230
●		●	-20	●		●			40	●	●	●	●		140	●				●	●	240
	●	●	-10		●	●			50					●	150			●		●	●	250
●	●	●	0	●	●	●			60	●					160	●	●			●	●	260
							●		70		●				170			●	●	●	●	270
							●		80	●	●				180	●		●	●	●	●	280
						●			90			●			190		●	●	●	●	●	290
																●	●	●	●	●	●	300

DIP Switch S1

Output Signal				9	10	Measuring Range Underflow	Measuring Range Overflow	Wire Break	Short Circuit
6	7	8							
			0 ... 20 mA			Lower limit of output range -5 % **2	Upper limit of output range +2.5 %*2	Upper limit of output range 5 %*2	Lower limit of output range -12.5 % **2
●			4 ... 20 mA			Lower limit of output range	Upper limit of output range +2.5 %	Upper limit of output range 5 %	Lower limit of output range
	●		0 ... 10 mA	●		Lower limit of output range	Upper limit of output range	Upper limit of output range 5 %	Upper limit of output range 5 %
●	●		2 ... 10 mA		●	Lower limit of output range	Upper limit of output range	Upper limit of output range 5 %	Upper limit of output range 5 %
		●	0 ... 10 V			Lower limit of output range	Upper limit of output range	Upper limit of output range 5 %	Upper limit of output range 5 %
●		●	2 ... 10 V		●	Lower limit of output range	Upper limit of output range	Upper limit of output range 5 %	Upper limit of output range 5 %
	●	●	0 ... 5 V	●	●	Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range
●	●	●	1 ... 5 V			Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range

* but not when lower limit of output range = 0V or 0mA

**2 acc. to NAMUR NE 43

Default Setting

All DIP switches are in „OFF“ position for delivery.	
Sensor type	KTY81-110, KTY81-120, KTY82-110, KTY82-120
Start temperature	0 °C
End temperature	100 °C
Output signal	0 ... 20 mA
Measuring range underflow	0 mA
Measuring range overflow	20.5 mA
Wire break	21 mA
Short circuit	0 mA
Digital output	not active

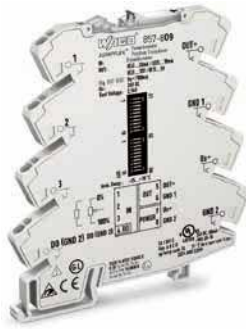
DIP Switch S2

		Digital Output DO Signaling
9	10	
		DO not active
	●	DO Us+ switching
●	●	DO GND switching

JUMPFLEX® Signal Conditioners

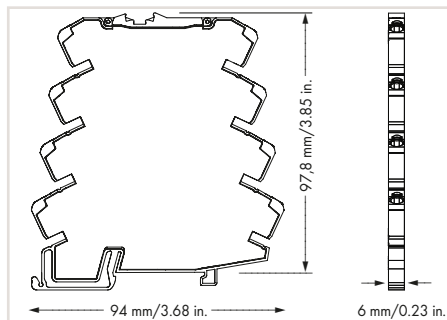
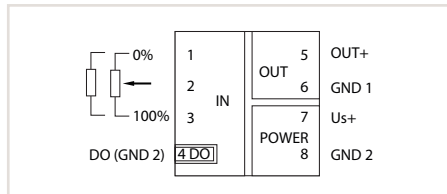
Potentiometer Signal Conditioner

857 Series



JUMPFLEX® Potentiometer Signal Conditioner, current and voltage output signal, digital output, configuration via software, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-809	1



Short description:

The 857-809 Potentiometer Signal Conditioner records resistance (e.g. from potentiometers), converting them into an analog standard signal. The device is supplied with 24 VDC (nominal voltage). It is set via DIP switches or push and slide switch.

Features:

- PC configuration interface
- Calibrated scale switching
- Automatic potentiometer identification
- Safe 3-way isolation with 2.5 kV test voltage acc. to EN 61140

Special Functions



Configuration via



Accessories, see page 258

Technical Data

Configuration

Configuration

DIP switch, push/slide switch, interface configuration software, interface configuration app

Input

Input signal

Potentiometer and Resistors *

Input range

Potentiometer

100 Ω ... 100 kΩ *

Resistors

10 Ω ... 100 kΩ *

Max. potentiometer supply voltage

2.5 V

Min. measuring range

100 Ω

Output

Output signal

Voltage

0 ... 10 V, 2 ... 10 V, 0 ... 5 V, 1 ... 5 V *

Current

0 ... 20 mA, 4 ... 20 mA, 0 ... 10 mA, 2 ... 10 mA *

Load impedance

≤ 600 Ω (Out = mA)

≥ 2 kΩ (Out = V)

Step response

< 32 ms

Output – Digital

Max. switching voltage

Supply voltage applied

Max. continuous current

100 mA

General Specifications

Nominal supply voltage U_s

24 VDC

Supply voltage range

$U_s - 30\% \dots +30\%$

Current consumption at 24 VDC

≤ 40 mA

Transmission Error

≤ 0.1 % of the full scale value

Temperature coefficient

≤ 0.01 % / K

Conformity marking

CE

Environmental Requirements

Ambient operating temperature

-25 ... +70 °C

Storage temperature

-40 ... +85 °C

Safety and Protection

Test voltage

(input/output/supply)

2.5 kV AC, 50 Hz, 1 min

Connection and Type of Mounting

Wire connection

Push-in CAGE CLAMP®

Conductor range

Solid

0.08 ... 2.5 mm² / 28 ... 14 AWG

Fine-stranded

0.34 ... 2.5 mm² / 22 ... 14 AWG

Strip length

9 ... 10 mm / 0.35 ... 0.39 in.

Dimensions and Weight

Dimensions (mm) W x H x D

6 x 97.8 x 94, Height from upper-edge of DIN 35 rail

Weight

49.2 g

For additional approvals, see page 180.

(* Additional setting options via interface configuration software or interface configuration app)

857-809

DIP Switch Adjustability

● = ON

DIP Switch S1 and S2

Input	
DIP S1	
1	Potentiometer
<input type="checkbox"/>	Resistor

Start Value						Resistor Ω
DIP S1						
2	3	4	5	6		
					0*	
●					0	
	●				10	
●	●				11	
		●			12	
●		●			13	
	●	●			15	
●	●	●			16	
			●		18	
●			●		20	
	●		●		22	
●	●		●		24	
		●	●		27	
●		●	●		30	
	●	●	●		33	
●	●	●	●		36	
				●	39	
●				●	43	
	●			●	47	
●	●			●	51	
		●		●	56	
●		●		●	62	
	●	●		●	68	
●	●	●		●	75	
			●	●	82	
●			●	●	91	
	●		●	●	40	
●	●		●	●	50	
		●	●	●	60	
●		●	●	●	70	
	●	●	●	●	80	
●	●	●	●	●	90	

End Value						Resistor Ω
DIP S1				DIP S2		
7	8	9	10	1		
					100000*	
●					0	
	●				10	
●	●				11	
		●			12	
●		●			13	
	●	●			15	
●	●	●			16	
			●		18	
●			●		20	
	●		●		22	
●	●		●		24	
		●	●		27	
●		●	●		30	
	●	●	●		33	
●	●	●	●		36	
				●	39	
●				●	43	
	●			●	47	
●	●			●	51	
		●		●	56	
●		●		●	62	
	●	●		●	68	
●	●	●		●	75	
			●	●	82	
●			●	●	91	
	●		●	●	40	
●	●		●	●	50	
		●	●	●	60	
●		●	●	●	70	
	●	●	●	●	80	
●	●	●	●	●	90	

*Default setting

DIP Switch S2

Factor of Initial Value			Factor of End Value			Output		Output Signal Range		
2	3		4	5		6		7	8	
		x1*				x1*	Current*			0 – 10 V/0 – 20 mA
●		x10	●			x10	Voltage	●		2 – 10 V/4 – 20 mA
	●	x100		●		x100			●	0 – 5 V/0 – 10 mA
●	●	x1000	●	●		x1000		●	●	1 – 5 V/2 – 10 mA

*Default setting

9	10	Measuring Range Underflow	Measuring Range Overflow	Wire Break
		Upper limit of output range ¹ +2.5 %	Lower limit of output range ¹ -5 %	Upper limit of output range ¹ +5 %
●		Upper limit of output range +2.5 %	Lower limit of output range	Upper limit of output range +5 %
	●	Upper limit of output range	Lower limit of output range	Upper limit of output range +5 %
●	●	Upper limit of output range	Lower limit of output range	Lower limit of output range

¹acc. to NAMUR NE 45

Digital Output DO/Signaling

The digital output (DO) signals error messages and can be configured as follows: 24 V → 0 V/0 V → 24 V.

In order to increase the switching current of the DO, the latter may be expanded by a relay. Thanks to the contour uniformity of Series 857, for example, a 857-304 Relay can be snapped in next to it. This output can be quickly and easily expanded to a switching current of 6A by simply using an adjacent jumper (859-402).

JUMPFLEX® Signal Conditioners

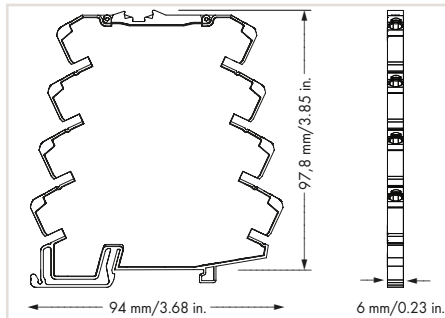
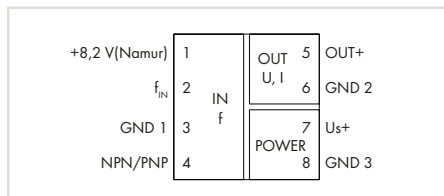
Frequency Signal Conditioner 0.1 ... 120 kHz

857 Series



JUMPFLEX® Frequency Signal Conditioner, current and voltage output signal, configuration via software, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-500	1



Short description:

The 857-500 Frequency Signal Conditioner collects 0.1 to 120 kHz signals from NAMUR, NPN or PNP sensors and converts the frequency signals into analog standard signals.

Features:

- PC configuration interface
- Signal acquisition from NAMUR, NPN or PNP sensors
- Calibrated scale switching
- Safe 3-way isolation with 2.5 kV test voltage acc. to EN 61140

Special Functions



Configuration via



Accessories, see page 258

Technical Data

Configuration

Configuration

DIP switch, interface configuration software, interface configuration app

Input

Sensor types *

- Frequency generators,
- NAMUR sensors
- NPN/PNP transistor outputs without pull-up or pull-down resistor
- mech. contact (dry contact)

Input for frequency generators or NPN/PNP transistor outputs with pull-up or pull-down resistor

Frequency range

0.1 Hz ... 120 kHz

Signal level

1.5 V, 10 V, 20 V (switchable)

Max. input signal

± 31.2 VDC

Pulse length

≥ 1 μs

Signal form

Any

Coupling

AC/DC (AC above 10 Hz) (adjustable)

Max. measuring span

10 Hz

Input resistance

10 kΩ

Input for NAMUR sensors per DIN EN 50227

Sensor supply

8.2 VDC

Signal current (0)

≤ 1.2 mA

Signal current (1)

≥ 2.1 mA

Hysteresis

0.45 mA

Input resistance

< 600 Ω

Frequency range

0.1 Hz ... 1 kHz

Pulse length

≥ 500 μs

Max. measuring span

10 Hz

Short circuit current

≤ 14 mA

Short circuit monitoring

> 4.7 mA

Wire break monitoring

< 0.2 mA

Input for NPN/PNP transistor outputs without pull-up or pull-down resistor or mech. contact (dry contact)

Frequency range

0.1 Hz ... 20 kHz

Pulse length

≥ 25 μs

Max. measuring span

100 Hz

Open-circuit voltage

5 VDC

NPN residual voltage

< 1.5 V

PNP switching voltage

> 7.5 V + residual voltage U_{CE sat}

Output

Output signal

0 ... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V *

Voltage

Current

0 ... 10 mA, 2 ... 10 mA, 0 ... 20 mA, 4 ... 20 mA *

Load impedance

≤ 600 Ω (Out = mA)

≥ 2 kΩ (Out = V)

Conversion time

Gate time measurement method

(> 400 Hz): < 20 ms

Pulse-time measurement method (< 400 Hz):

< 200 μs + T_{Cycle duration} *

General Specifications

Nominal supply voltage U_s

24 VDC

Supply voltage range

U_s -30 % ... +30 %

Current consumption at 24 VDC

≤ 40 mA

Transmission Error

≤ 0.1 % of the full scale value

Temperature coefficient

≤ 0.01 % / K

Conformity marking

CE

Technical Data

Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-40 ... +85 °C
Safety and Protection	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min
Connection and Type of Mounting	
Wire connection	Push-in CAGE CLAMP®
Conductor range	
Solid	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Fine-stranded	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 in.
Dimensions and Weight	
Dimensions (mm) W x H x D	6 x 97.8 x 94, Height from upper-edge of DIN 35 rail
Weight	38.7 g

For additional approvals, see page 180.

Refer to the following pages for DIP Switch Table and Pin Assignments

(* Additional setting options as well as output signal inversion via PC configuration software or interface configuration app)

857-500

DIP Switch Adjustability

● = ON

DIP Switch S1

Source Input			Coupling		Operation with disturbed frequency signals for acceptable signal level (applies only to f_{IN} input)			
1	2		3		4	5	High	Low
		Frequency generator or NPN/PNP transistor outputs with pull-up or pull-down resistor		AC/DC			> 1.5 V	< 0.4 V
●		NAMUR	●	AC (without DC), see Figure 1	●		> 10 V	< 8 V
	●	NPN/PNP transistor outputs without pull-up or pull-down resistor input Dry Contact				●	> 20 V	< 16 V
					●	●	> 1.5 V	< 0.4 V

DIP Switch S1

DIP Switch S2

DIP Switch S1					DIP Switch S2						
Input Start Value					Frequency/ Hz	Input End Value					Frequency/ Hz
6	7	8	9	10		1	2	3	4	5	
●					0.1	●					0.1
	●				1		●				1
●	●				100	●	●				100
		●			200			●			200
●	●	●			300	●		●			300
	●	●			400		●	●			400
●	●	●			500	●	●	●			500
			●		600				●		600
●			●		700	●			●		700
	●		●		800		●		●		800
●	●		●		900	●	●		●		900
		●	●		1000			●	●		1000
●		●	●		2000	●		●	●		2000
	●	●	●		3000		●	●	●		3000
●	●	●	●		4000	●	●	●	●		4000
			●		5000					●	5000
●			●		6000	●				●	6000
	●		●		7000		●			●	7000
●	●		●		8000	●	●			●	8000
		●	●		9000			●		●	9000
●		●	●		10000	●		●		●	10000
	●	●	●		20000		●	●	●		20000
●	●	●	●		30000	●	●	●	●		30000
			●		40000				●	●	40000
●		●	●		50000	●			●	●	50000
	●		●		60000		●		●	●	60000
●	●		●		70000	●	●		●	●	70000
		●	●		80000			●	●	●	80000
●		●	●		90000	●		●	●	●	90000
	●	●	●		100000		●	●	●	●	100000
●	●	●	●		120000	●	●	●	●	●	120000

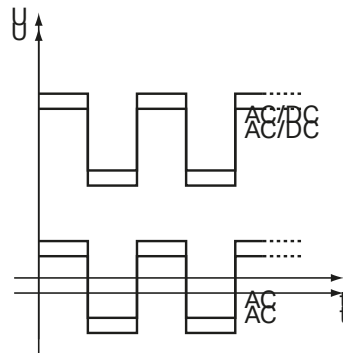


Figure 1: Coupling

Default Setting

Input:	
Input source	Frequency generator/transistor output with pull-up or pull-down resistor
Coupling	AC/DC
Signal level	> 1.5 V
Start value	100 Hz
End value	1000 Hz
Measuring technique	Gate time measurement method
Output:	
Output signal	Current
Start value	0 mA
End value	20 mA
Measuring range underflow	0 mA
Measuring range overflow	20.5 mA

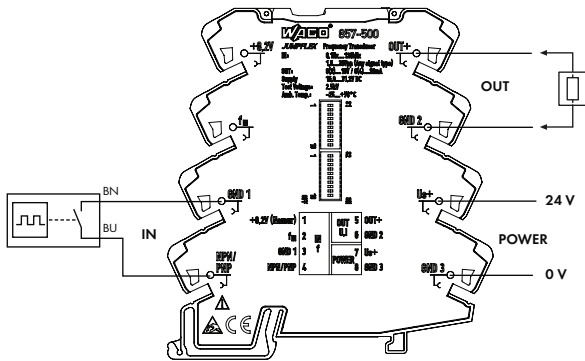
DIP Switch S2

Output Signal				Measuring Range Underflow		Measuring Range Overflow		Only for NAMUR Sensors	
6	7	8		9	10			Wire Break	Short Circuit
			0 ... 20 mA			Lower limit of output range* -5 %	Upper limit of output range* +2.5 %	Upper limit of output range* 5 %	Lower limit of output range* -12.5 %
	●		4 ... 20 mA						
		●	0 ... 10 mA	●		Lower limit of output range	Upper limit of output range +2.5 %	Upper limit of output range 5 %	Lower limit of output range
	●	●	2 ... 10 mA						
●			0 ... 10 V		●	Lower limit of output range	Upper limit of output range	Upper limit of output range 5 %	Upper limit of output range 5 %
●	●		2 ... 10 V						
●		●	0 ... 5 V	●	●	Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range
●	●	●	1 ... 5 V						

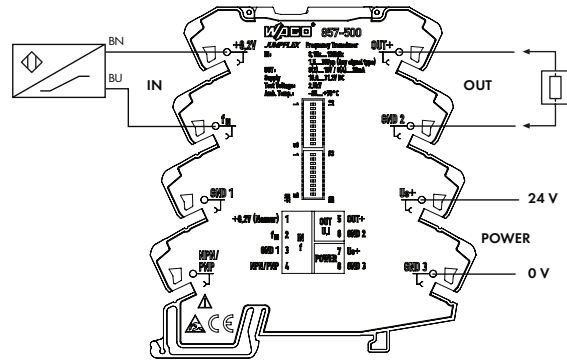
*acc. to NAMUR NE 43

857-500, Wiring Material

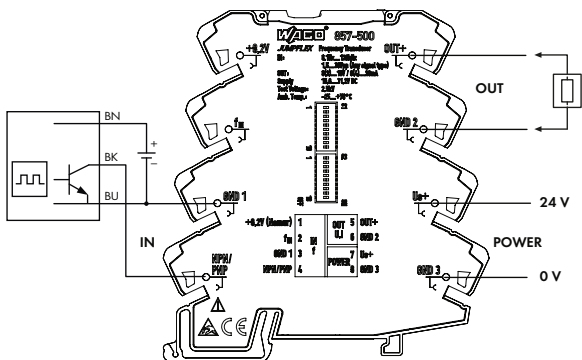
2-Conductor DC (Mechanical Contact)



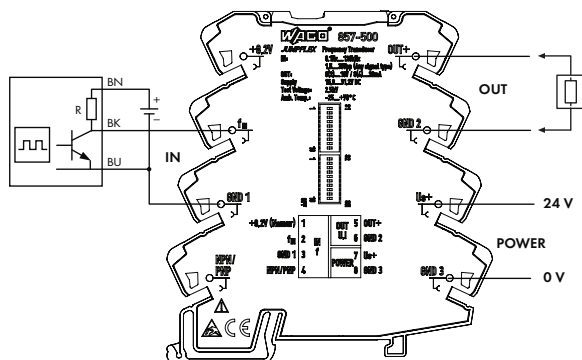
2-Conductor DC NAMUR Sensor



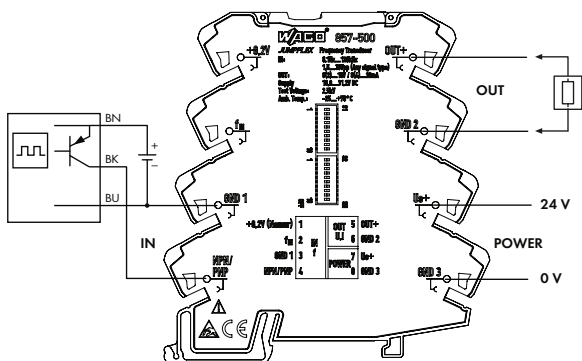
NPN Transistor Output



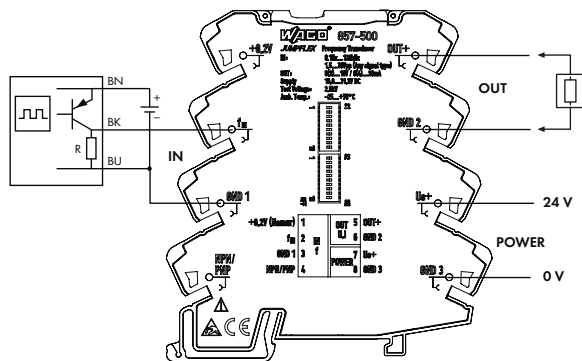
NPN Transistor Output with Pull-Up Resistor



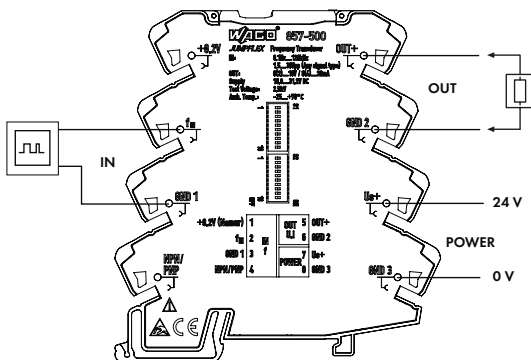
PNP Transistor Output



PNP Transistor Output with Pull-Down Resistor



Frequency Generator



Interface Configuration Software

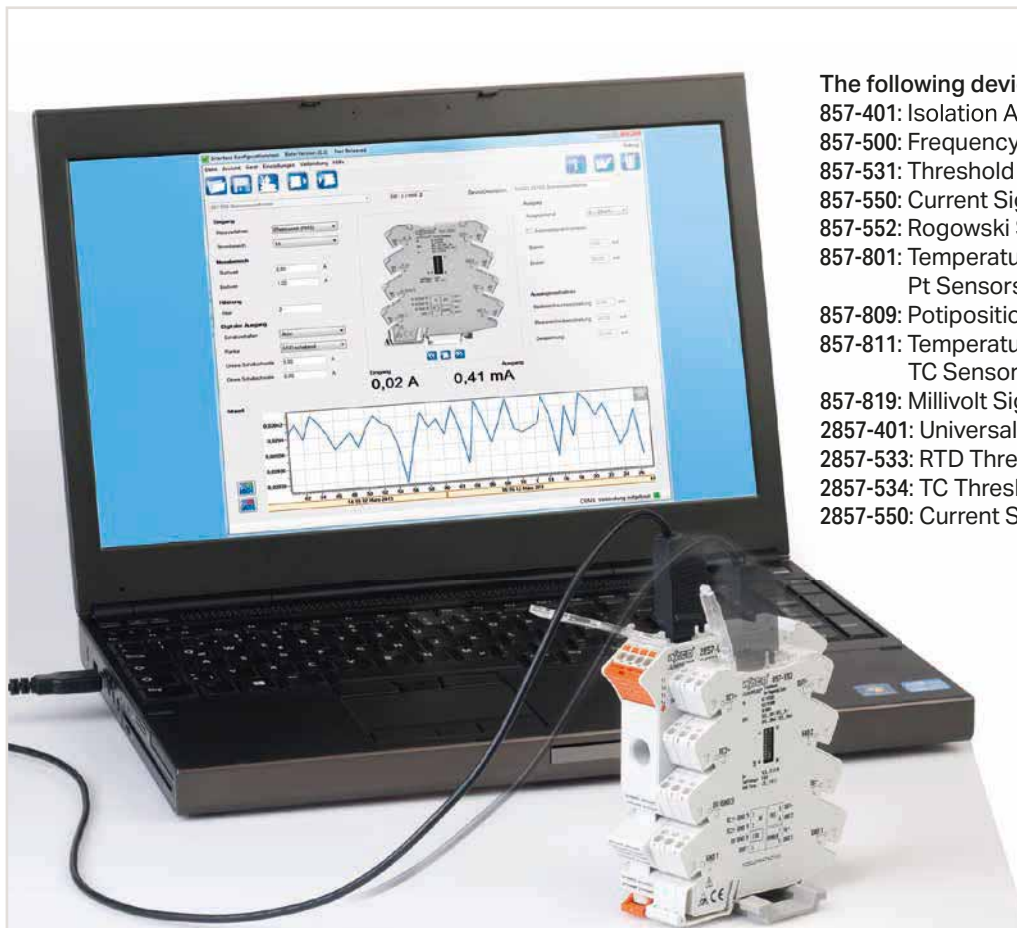
Interface Configuration Software – DIP Switch Alternative

Software features:

- Automatic module recognition
- Visualization of process values
- Parameterization of the digital switch output (threshold functionality)
- Communication via 750-923 WAGO USB Service Cable or 750-921 WAGO Bluetooth® Adapter

Description:

Interface Configuration Software
Download: www.wago.com



The following devices are already supported:

- 857-401: Isolation Amplifier
- 857-500: Frequency Signal Conditioner
- 857-531: Threshold Value Switch
- 857-550: Current Signal Conditioner
- 857-552: Rogowski Signal Conditioner
- 857-801: Temperature Signal Conditioner for Pt Sensors
- 857-809: Potiposition Signal Conditioner
- 857-811: Temperature Signal Conditioner for TC Sensors
- 857-819: Millivolt Signal Conditioner
- 2857-401: Universal Isolation Amplifier
- 2857-533: RTD Threshold Value Switch
- 2857-534: TC Threshold Value Switch
- 2857-550: Current Signal Conditioner

Interface Configuration App

Interface Configuration App – DIP Switch Alternative

WAGO's Interface Configuration App brings the power of a PC-based configuration software to mobile end-user devices. WAGO's 857 Series signal conditioner's input and output parameters can be configured via finger swipe on an Android-based smartphone or tablet. Furthermore, both configuration data and actual measured values can be easily displayed.

WAGO's 750-921 *Bluetooth*® Adapter seamlessly communicates between a smartphone and the signal conditioner.



3

Device Information



Input Parameter



Output Parameter



Digital Output



Actual Value



The following devices are already supported:

- 857-401: Isolation Amplifier
- 857-500: Frequency Signal Conditioner
- 857-531: Threshold Value Switch
- 857-550: Current Signal Conditioner
- 857-552: Rogowski Signal Conditioner
- 857-801: Temperature Signal Conditioner for Pt Sensors
- 857-809: Potiposition Signal Conditioner
- 857-811: Temperature Signal Conditioner for TC Sensors
- 857-819: Millivolt Signal Conditioner

- 2857-401: Universal Isolation Amplifier
- 2857-533: RTD Threshold Value Switch
- 2857-534: TC Threshold Value Switch
- 2857-550: Current Signal Conditioner



Download from
Google Play

Configuration Display 2857 Series

Housing width:
22.5 mmHousing width:
12.5 mm

Configuration display

Item No.	Pack. Unit
2857-900	1

Features:

- Easy mounting on 2857 Series devices
- Automatic module recognition
- Capacitive user interface with slider function
- Intuitive menu navigation
- Color backlight for status indication
- Device configuration and process value visualization
- Easy copying of device configuration

Technical Data

Environmental Requirements

Ambient operating temperature	-20 ... +70 °C
Storage temperature	-30 ... +80 °C

Dimensions and Weight

Dimensions (mm) W x H x D	22 x 13 x 59
---------------------------	--------------

Standards/Approvals

Conformity marking	CE
--------------------	----

Switched-Mode Power Supply in 2857 Series Housing

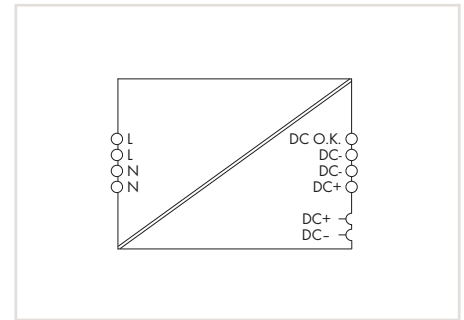
EPSITRON® Power for JUMPFLEX®

787 Series



Features:

- Switched-mode power supply in 22.5 mm wide 2857 Series housing, same profile as 2857 and 857 Series JUMPFLEX® Signal Conditioners
- Both 24 VDC and 0 V output voltage can be easily supplied to adjacent JUMPFLEX® Modules via 859-4xx Jumpers
- Pluggable *picoMAX*® connection technology
- Natural convection cooling
- DC OK message as active signal output (24 VDC, 20 mA)
- Integrated redundancy diode enables easy fail-safe power supply via parallel connection of two power supplies
- Approvals for worldwide applications with JUMPFLEX® Modules (pending)



EPSITRON® – Switched-Mode Power Supply, in a JUMPFLEX® housing, 1-phase, output voltage: 24 VDC, output current: 1 A, DC OK-contact

Item No.	Pack. Unit
787-2852	1

3

Technical Data

Input	
Nominal input voltage $U_{i, nom}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC, 90 ... 370 VDC
Frequency	47 ... 63 Hz, 0 Hz
Input current I_i	< 0.2 A (230 VAC, nominal load); < 0.9 A (90 VAC, nominal load)
Power factor	> 0.6 (230 VAC, nominal load, acc. to EN 61000-3-2)
Discharge current	< 1 mA (230 VAC)
Inrush current	< 30 A (230 VAC), limited
Mains failure hold-up time	120 ms (230 VAC)
Output	
Nominal output voltage $U_{o, nom}$	24 VDC, SELV
Factory preset	24 VDC
Nominal load $P_{a, nom}$	24 W
Output current I_o	1 ADC
Deviation, dynamic load change 10 ... 90 %	< ± 1 %
Adjustment accuracy	< 2 %
Residual ripple	< 100 mV (peak-peak) at 20 MHz
Current limitation	1.1 x I_o typ.
Overload behavior	Constant current
Operational indication	LED green ($U_o > 21.5$ V)
Efficiency/Power Losses	
Efficiency	86 % typ. (230 VAC, nominal load); 84 % typ. (110 VAC, nominal load)
Power loss P_V	< 1 W (230 VAC, no load); 4.3 W (230 VAC, nominal load)
Max. Power loss P_V	4.6 W typ. (100 VAC / 24 VDC, 1 A)
Fuse Protection	
Internal fuse	T 2 A / 250 V
External fuse	Circuit breakers 6 A, B or C characteristic
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-40 ... +85 °C
Relative humidity	30 % ... 85 % (no condensation per- missible)
Derating	-2 % / K (> +60 °C)

Technical Data

Degree of pollution	2 (acc. to EN 50178)
Climatic category	3K3 (acc. to EN 60721)
Test voltage	4.2 kV DC (input – output)
Protection class	II
Protection type	IP20 per EN 60529
Overvoltage protection	Varistor (input side); internal protective circuit, < 29 ... 31 VDC (output side in case of an error)
Short circuit protection	Yes
No-load proof	Yes
Feedback voltage	Max. 60 VDC
Parallel operation	Yes, for 2 devices of the same type
Series connection	Yes, for 2 devices of the same type
MTBF	> 500000 h (at 25 °C) Calculation acc. to IEC 61709
Standards/Approvals	EN 61000-6-2, EN 61000-6-3, EN 60950-1, UL 60950 *, cULus 508 *, ANSI-ISA 12.12.01 (Class I Div 2) *, ATEX/IEC Ex *, GL * (* pending)
Connection and Type of Mounting	
Wire connection	Input/Output/Signaling: Push-in CAGE CLAMP® (<i>picoMAX</i> ® 5.0)
Conductor range	Input/Output/Signaling: Solid/fine-stranded: 0.2 ... 2.5 mm ² / 24 ... 10 AWG
Strip length	Input/Output/Signaling: 9 ... 10 mm / 0.35 ... 0.39 in.
Type of mounting	DIN-rail mounting (EN 60715)
Dimensions and Weight	
Dimensions (mm) W x H x D	22.5 x 110 x 118, Length from up- per-edge of DIN 35 rail
Weight	195 g

Bluetooth® Adapter 750 Series



Application Example: 750 Series



Application Example: 857 Series

Bluetooth® Adapter

Item No.	Pack. Unit
750-921	1

Bluetooth® Adapter in Connection with 750 Series
The *Bluetooth®* Adapter wirelessly connects a notebook computer with *Bluetooth®* functionality to the service interface of the buscoupler/controller. It also provides an active connection to a programmable fieldbus controller.

As a cable substitute, the *Bluetooth®* adapter allows communication between two fieldbus controllers, as well as between fieldbus couplers/controllers via WAGO software tools (e.g. *WAGO-I/O-CHECK*, *WAGO-I/O-PRO*, ...). Configurable coexistence properties ensure trouble-free operation in the presence of other radio systems.


Bluetooth® Adapter in Connection with 857 Series
The *Bluetooth®* Adapter wirelessly connects a notebook computer with *Bluetooth®* functionality to the service interface of a configurable 857 Series *JUMPFLEX®* Module.

As a cable substitute, the *Bluetooth®* adapter allows communication between *JUMPFLEX®* Modules and the WAGO software tool (*WAGOframe*) or configuration app for Android-based end-devices.

If required, adapter configuration may be performed via AT commands.

The adapter is supplied via both service interface and power supply of coupler/controller or *JUMPFLEX®* module.

Technical Data

Data transmission rate	9600 ... 115000 bps
Frequency range	2.4 ... 2.4835 GHz (ISM-Band)
Type of communication	Point-to-point connection
Profiles supported	Serial Port Profile (SPP)
Version	2.1
Radio class	Class 2
RF output power	Max. +4 dBm (Class 2)
RF input sensitivity	Typ. -82 dBm
Antenna	Integrated
Ports	4-pole service connectors
Configuration	AT commands (e.g. via Hyper Terminal)
Function	Master or Slave
LED	Operating status
Operating temperature	-20 ... +60 °C
Current consumption (internal)	60 mA
Security authentication	Pin code or configurable access list
Security encryption	128-bit encryption
Dimensions (mm) W x H x D	15 x 50 x 19
Weight	7 g
Coexistence	Frequency Hopping Spread Spectrum (FHSS), Adaptive Frequency Hopping (AFH), Adaptive transmission power with configurable upper limit, configurable channel blacklist, supports coexistence optimized inquiry (transmission time ≤ 0.1 s; transmission cycle ≥ 2.9 s)
Conformity marking	CE
	 Bluetooth
	Bluetooth® Approval

WAGO USB Communication Cable 750 Series



WAGO USB communication cable		
Length	Item No.	Pack. Unit
2.5 m	750-923	1
5.0 m	750-923/000-001	1

The WAGO USB Communication Cable connects a PC (notebook) to either the service interface of the 857 Series Signal Conditioners and Relay Modules (JUMPFLEX®) or to WAGO-I/O-SYSTEM buscouplers/controllers.

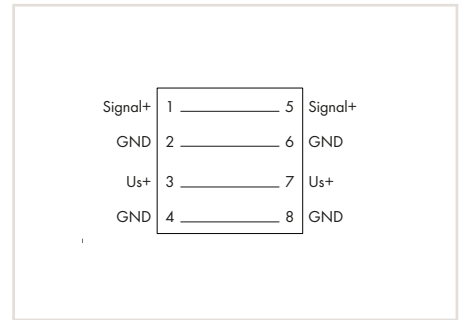
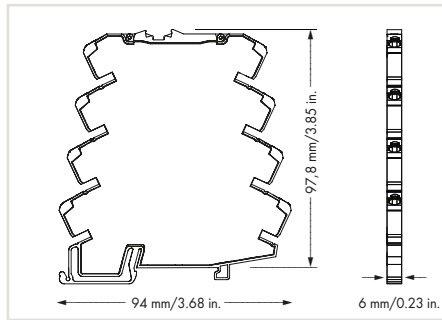
Notice!

Using the WAGO 759-923 USB Communication Cable in combination with select programmable fieldbus controllers requires the specific firmware versions listed below (or higher):
750-841 from firmware version 12
750-872/0020-0000 from firmware version 2

Technical Data

USB specification	2.0 compatible/full-speed device
Operating system	Microsoft® Windows® 2000; Microsoft® Windows® XP Professional; Microsoft® Windows® Vista®; Microsoft® Windows® 7
Operating temperature	-25 ... +70 °C
Interface USB	Type A/m
Length	2.5 m (750-923) 5.0 m (750-923/000-001)
Connector dimensions (WxHxD)	15 x 50 x 19
Test voltage	2.5 kV, 50 Hz, 1 min.
EMC: CE-Immunity to interference	acc. to EN 61000-4-3, EN 61000-4-6
EMC: CE-Emission of interference	acc. to EN 55022
Conformity marking	CE

Supply and Through Module 857 Series



3

Supply and through module

Item No.	Pack. Unit
857-979	25

Short description:

The 857-979 Supply and Through Module transmits electrically isolated signals (e.g., in conjunction with the 857-980 Interface Adapter for analog signals), 857-980. When used as a supply module, it transmits the power from the clamping points to the adjacent JUMPFLEX® modules via push-in type jumper bars.

Technical Data

General Specifications

Max. voltage	33 V AC/DC
Current carrying capacity	8 A
Contact resistance	< 10 mΩ
Conformity marking	CE

Environmental Requirements

Ambient operating temperature	-25 ... +70 °C
Storage temperature	-40 ... +85 °C

Connection and Type of Mounting

Wire connection	Push-in CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm² / 28 ... 14 AWG
Solid	0.34 ... 2.5 mm² / 22 ... 14 AWG
Fine-stranded	9 ... 10 mm / 0.35 ... 0.39 in.
Strip length	

Dimensions and Weight

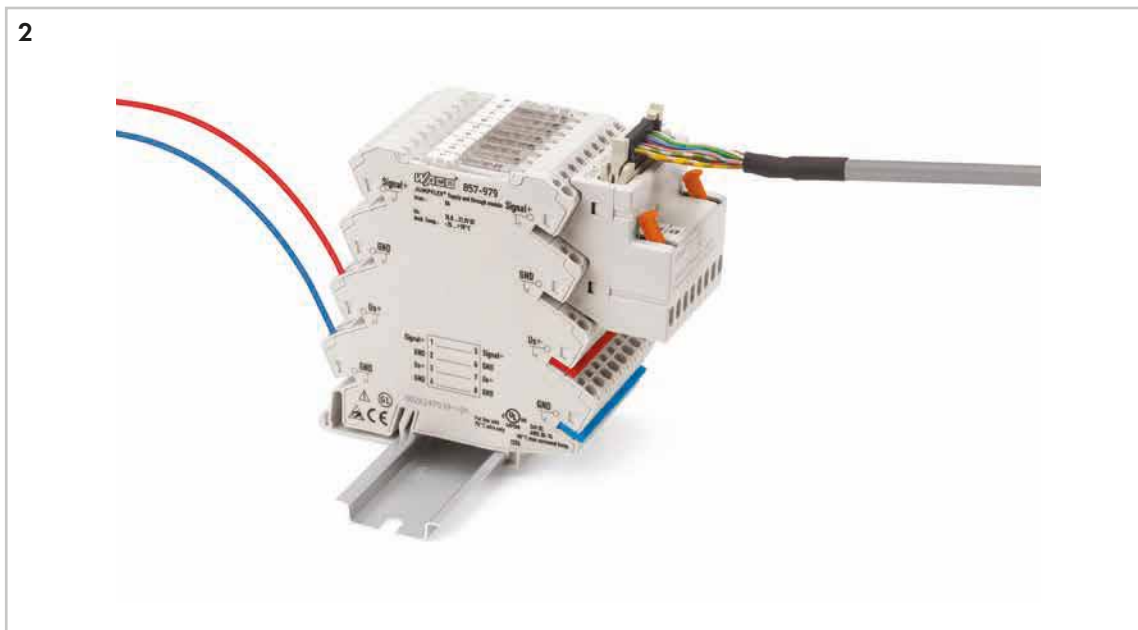
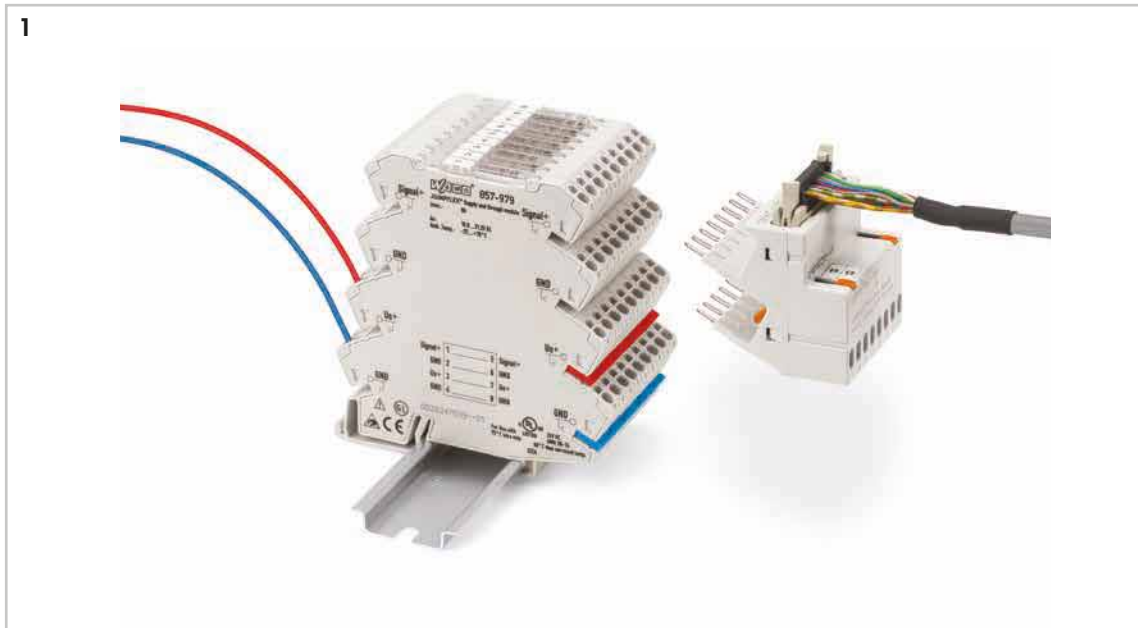
Dimensions (mm) W x H x D	6 x 97.8 x 94, Height from upper-edge of DIN 35 rail
Weight	30 g

For additional approvals, see page 180.

Application example:**857-979**

Power supply for 8 JUMPFLEX® modules with plugged interface adapter

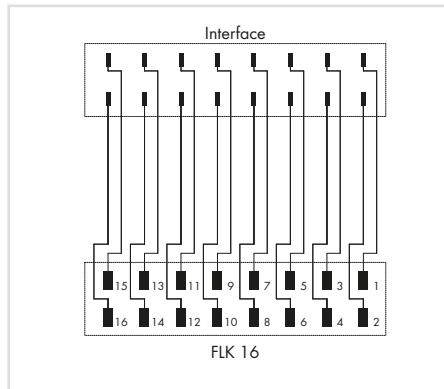
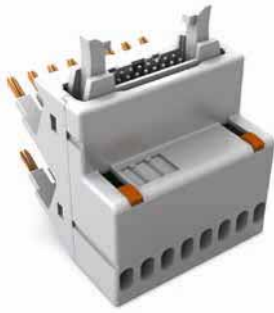
- WAGO interface adapter, 857-980
- WAGO Interface Cable, 706-100/1602-200, 16-pole socket/open-ended
- Push-in type jumper bar, 9-way, 859-409



Interface Modules for System Wiring

Interface Adapters

857 Series



3

JUMPFLEX® Adapter, with 16-pole pluggable ribbon cable connector

Item No.	Pack. Unit
857-980	1

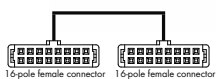
Technical Data

Connection type, signal level	16-pin ribbon cable connector acc. to DIN 41651
Contact resistance	≤ 20 mΩ
Current carrying capacity	1 A
Test voltage	500 V / 50 Hz / 1 min
Overvoltage category	III
Degree of pollution	2
Conformity marking	CE

For additional approvals, see page 180.

FLK = ribbon cable

WAGO Interface Cables for Interface Adapters 706 Series



The 16-pin WAGO Interface Cables transmit signals one-to-one from the 16-pole connector and are available in 1-, 2- and 3-meter lengths. Signal transmission from the 857-980 Interface Adapter is also possible.

Suitable for system wiring when combined with the Interface Adapter (Item No. 857-980)

Color coding acc. to DIN VDE 47100		HE 10 16-pole Contact number
white		1
brown		2
green		3
yellow		4
grey		5
pink		6
blue		7
red		8
black		9
violet		10
grey/pink		11
red/blue		12
white/green		13
brown/green		14
white/yellow		15
yellow/brown		16

WAGO Interface Cables 16/16

Length	Item No.	Pack. Unit
1 m	706-753/301-100	10
2 m	706-753/301-200	10
3 m	706-753/301-300	10

Technical Data

Ports	2 x 16-pole connector, FLK acc. to DIN 41651
Wire cross-section	0.14 mm ² LiYY
Color coding	acc. to DIN VDE 47100
Current per channel	1 A (max.)
Operating temperature	-25 ... +70 °C
Protection type	IP20
Length	1 m (706-753/301-100) 2 m (706-753/301-200) 3 m (706-753/301-300)
	FLK = ribbon cable

WAGO Interface Cable, 16-pole/free end

Length	Item No.	Pack. Unit
2 m	706-100/1602-200	10

Technical Data

Ports	16-pole HE 10 pluggable connector/one free cable end
Wire cross-section	0.14 mm ² LiYY
Color coding	acc. to DIN VDE 47100
Current per channel	1 A (max.)
Operating temperature	-25 ... +70 °C
Protection type	IP20
Length	2 m

Accessories

Software

Interface Configuration Software



Description	Item No.	Pack. Unit
Configuration and display tool for PC Download: www.wago.com	-	

JUMPFLEX®-ToGo Smartphone App



Description	Item No.	Pack. Unit
Configuration and display tool for smartphones (Android) Download: Google Play	-	

WAGO USB Communication Cable



Description	Item No.	Pack. Unit
Connects a PC (notebook) to the service interface of the 857 Series signal conditioner		
Length: 2.5 m	750-923	1
Length: 5.0 m	750-923/000-001	1

Bluetooth® Adapter



Description	Item No.	Pack. Unit
Connects a PC (notebook) to the service interface of the 857 Series signal conditioner		
	750-921	1

Push-In Type Jumper Bars

Push-in type jumper bars, light gray, insulated, 18 A



Description	Item No.	Pack. Unit
2-way	859-402	200 (8x25)
3-way	859-403	200 (8x25)
4-way	859-404	200 (8x25)
5-way	859-405	200 (8x25)
6-way	859-406	100 (4x25)
7-way	859-407	100 (4x25)
8-way	859-408	100 (4x25)
9-way	859-409	100 (4x25)
10-way	859-410	100 (4x25)
Item no. suffixes for colored, push-in type jumper bars	Item No.	
yellow	.../000-029	
red	.../000-005	
blue	.../000-006	

Comb-style jumper bar



Description	Item No.	Pack. Unit
2-way	281-482	100

Current Transformers, Rogowski Coils and Power Supplies

Current Transformers



For additional information, see Section 4, page 266

Primary current: 50 A ... 2500 A, secondary current: 1 A or 5 A 855 Series (other values upon request or at www.wago.com)	Item No.	Pack. Unit
	-	

Rogowski Coils



For additional information, see Section 4, page 276

Primary current up to 2000 A 855 Series	Item No.	Pack. Unit
	-	

JUMPFLEX® POWERED BY EPSITRON®



	Item No.	Pack. Unit
	787-2852	1

Wiring

Interface Adapter for System Wiring



	Item No.	Pack. Unit
	857-980	1

Supply and Through Module



	Item No.	Pack. Unit
	857-979	1

WAGO Interface Cable, 16-pole/free end



Length: 2 m	Item No.	Pack. Unit
	706-100/1602-200	1

Relay

Relay with 1 Changeover Contact, 24 / 250 VDC / 6 A



See also, 857 Series Relay

	Item No.	Pack. Unit
	857-304	1

Accessories

Marking

WMB Multi Marking System



		Item No.	Pack. Unit
plain		793-501	5 cards
Marking	1 ... 10 (10x)	793-502	5 cards
	11 ... 20 (10x)	793-503	5 cards
	21 ... 30 (10x)	793-504	5 cards
	31 ... 40 (10x)	793-505	5 cards
	41 ... 50 (10x)	793-506	5 cards
	1 ... 50 (2x)	793-566	5 cards

Marking strip for TOPJOB® S,
white, plain, 11 mm wide,

	Item No.	Pack. Unit
50 m reel	2009-110	1

WMB Multi Marking System



	Item No.	Pack. Unit
See www.wago.com	-	

Other Accessories

Operating tool, with a partially insulated shaft



Type 2, 3.5 x 0.5 mm blade	Item No.	Pack. Unit
	210-720	1

End stops



Width	Item No.	Pack. Unit
6 mm	249-116	1
10 mm	249-117	1
14 mm	249-197	1









Test pin



	Item No.	Pack. Unit
	735-500	1

JUMPFLEX® Signs and Symbols






Signal Conditioners and Isolation Amplifiers

-  Isolation amplifier
-  Temperature signal conditioner
-  Threshold value switch
-  Frequency signal conditioner
-  Potentiometer signal conditioner
-  Resistance signal conditioner
-  Current signal conditioner
-  Voltage signal conditioner




Special Functions

-  Zero/span adjustment
-  Clipping capability
-  Digital output (DO)
-  Relay, 1 changeover contact
-  Relay, 1 make contact







Configuration

-  DIP switch
-  Interface configuration software
-  Interface configuration app
-  Interface configuration display
-  Push/slide switch




General

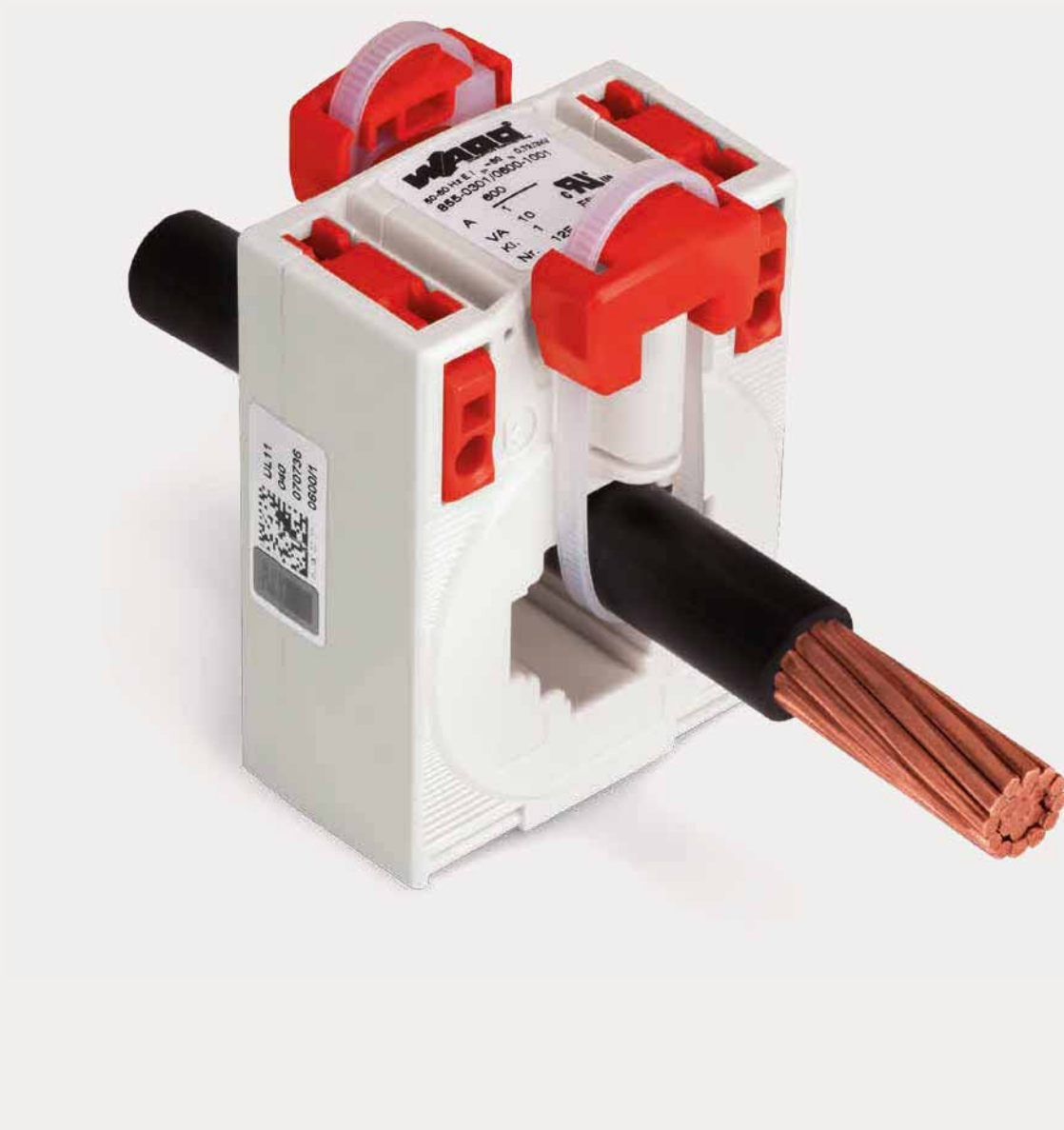
-  Temperature sensors
-  Wire connection
-  Supply voltage

Input signals

-  Frequencies
-  Potentiometer
-  Resistors
-  Current
-  Voltage
-  Bipolar signals current and voltage





Output signals

-  Current
-  Voltage
-  Bipolar signals current and voltage




Current and Energy Measurement Technology

Current and Energy Measurement Technology

	Page
	Current Transformers Plug-In Current Transformers with CAGE CLAMP® Connector, 855 Series 266 Plug-In Current Transformers with <i>picoMAX</i> ® Pluggable Connector, 855 Series 270 Split-Core Current Transformers, 855 Series 272
	Rogowski Coils and Current Signal Conditioners Rogowski Coils, 855 Series 276
	Terminal Block Assemblies Terminal Block Assemblies for Current and Voltage Transformers, 2007 Series 280
	Current Sensors with Bus Connection Current Sensors, 789 Series 282 Accessories for Current Sensors 288
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Current Transformers Selection Guide



Current Transformers 855 Series	Split-Core Current Transformers	Plug-In Current Transformers with CAGE CLAMP® Connection Technology
Applications	Backfitting	New systems
Coil bobbin	Separable	Closed
Connection technology	Connecting cable (color coded)	CAGE CLAMP®
Mounting	Round cable (insulated), copper current bar (insulated)	Round cable, copper current bar, carrier rail, mount- ing plate
Compatibility with other WAGO components		750-493, (750-493/000-001) 750-494, (750-494/000-001) 750-495, (750-495/000-001) 857-550
Primary rated current	60 A to 1000 A	50 A to 2500 A
Secondary rated current	1 A / 5 A	1 A / 5 A
Accuracy class	0.5, 1 or 3	1 or 3
Ambient operating temperature	-10 ... +55 °C	-5 ... +50 °C
Standards	EN 61869-2	EN 61869-2
Approvals	-	


* In the measurement range between 0.8 ... 32 A and in combination with WAGO's 3-Phase Power Measurement Modules, the accuracy class 0.5 is met acc. to EN 61869-2.



Plug-In Current Transformers with *picoMAX*[®] Pluggable Connector

Rogowski Coils RT 500 / RT 2000

Rogowski Coils RC 70 / RC 125 / RC 175

New systems		Backfitting	Backfitting
Closed		Separable	Bayonet connector, separable
<i>picoMAX</i> [®]		Connecting cable	Connecting cable
Round cable, carrier rail, mounting plate		Round cable (insulated), copper current bar (insulated)	Round cable, copper current bar
750-493 750-494 750-495 857-550		750-495/000-002 857-552 789-652 / 789-654	750-495/000-002 857-552
32 A	35 / 64 A	up to 2000 A	up to 4000 A
320 mA	1 A	(up to 40.02 mV)	22.5 mV / kA
0.5 *	1	-	1
-10 ... +55 °C		-40 ... +80 °C	-40 ... +80 °C
EN 61869-2		IEC 61010-1	EN 61010-1/EN 61869-2
-			UL pending

Plug-In Current Transformers with CAGE CLAMP® Connector 855 Series



Short description:

The 855 Series Plug-In Current Transformers are inductive, single-conductor current transformers. Based on the principle of measurement, current transformers of this type are for use in AC networks exclusively.

Features:

- Screwless CAGE CLAMP® connection technology
- Several mounting options available
- Vibration- and shock-resistant
- High mechanical retention forces
- High-current carrying capacity
- Continuous overload of 120% the nominal primary current
- Low-voltage current transformer for operating voltages up to 1.2 kV
- Can be used in 690 V power networks
- UL recognized components

Technical Data

Input	
Rated continuous thermal current I_{cth}	1.2 x I_N
Rated short-time thermal current I_{th}	60 x I_N (max. 100 kA), 1 s
Max. operating voltage U_m	1.2 kV _{rms}
Rated frequency	50 ... 60 Hz
Overcurrent limiting factor	FS5 or FS10 (type dependent, see type plate inscription)
General Specifications	
Conformity marking	CE
Standards/Approvals	EN 61869-1; EN 61869-2
UL (Recognized Components)	E356480
Environmental Requirements	
Ambient operating temperature	-5 ... +50 °C
Storage temperature	-25 ... +70 °C
Max. operating altitude	1000 m
Safety and Protection	
Test voltage	6 kV _{rms} AC / 50 Hz / 1 min
Insulation class	E
Connection	
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 4 mm ² / 28 ... 12 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 in.

Accessories (Selection)

Carrier Rail Adapter for Plug-In Current Transformers
(for 855-3xx/xxx-xxxx and 855-4xx/xxx-xxxx)

Quick-Mount Kit

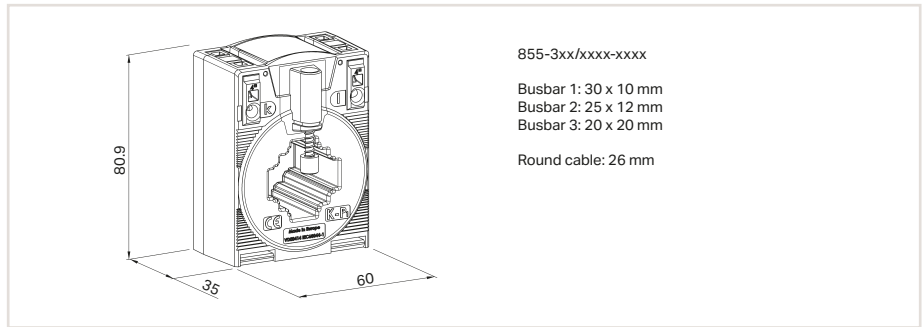


Operating Tool, type 2
blade (3.5 x 0.5) mm, with partially insulated shaft

Terminal Block Assembly for Current Transformers,
see page 280

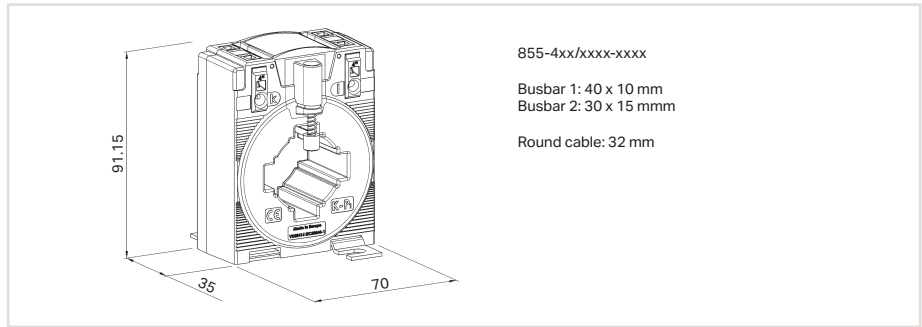
3-Phase Power Measurement Module,
see page 292

	Item No.	Pack. Unit
Carrier Rail Adapter for Plug-In Current Transformers (for 855-3xx/xxx-xxxx and 855-4xx/xxx-xxxx)	855-9900	1
Quick-Mount Kit	855-9910	1
Operating Tool, type 2 blade (3.5 x 0.5) mm, with partially insulated shaft	210-720	1
Terminal Block Assembly for Current Transformers, see page 280		
3-Phase Power Measurement Module, see page 292		



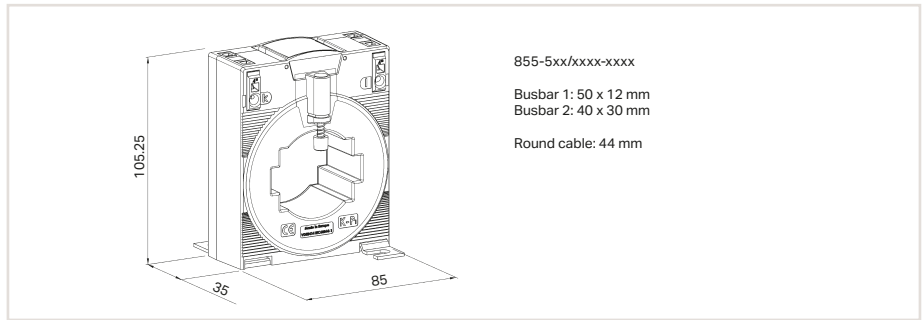
Plug-in current transformers	Primary Rated Current	Secondary Rated current	Rated Power	Accuracy Class	Item No.	Pack. Unit
	50 A	1 A	1.25 VA	3	855-301/050-103	1
	50 A	5 A	1.25 VA	3	855-305/050-103	1
	60 A	1 A	1.25 VA	1	855-301/060-101	1
	60 A	5 A	1.25 VA	1	855-305/060-101	1
	75 A	1 A	2.5 VA	1	855-301/075-201	1
	75 A	5 A	2.5 VA	1	855-305/075-201	1
	100 A	1 A	2.5 VA	1	855-301/100-201	1
	100 A	5 A	2.5 VA	1	855-305/100-201	1
	150 A	1 A	5 VA	1	855-301/150-501	1
	150 A	5 A	5 VA	1	855-305/150-501	1
	200 A	1 A	5 VA	1	855-301/200-501	1
	200 A	5 A	5 VA	1	855-305/200-501	1
	250 A	1 A	5 VA	1	855-301/250-501	1
	250 A	5 A	5 VA	1	855-305/250-501	1
	300 A	5 A	5 VA	1	855-305/300-501	1
	400 A	1 A	10 VA	1	855-301/400-1001	1
	400 A	5 A	10 VA	1	855-305/400-1001	1
	600 A	1 A	10 VA	1	855-301/600-1001	1
	600 A	5 A	10 VA	1	855-305/600-1001	1

4



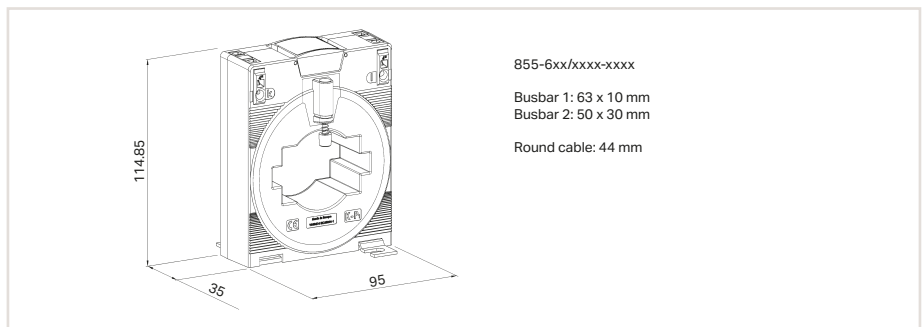
Plug-in current transformers	Primary Rated Current	Secondary Rated current	Rated Power	Accuracy Class	Item No.	Pack. Unit
	250 A	5 A	5 VA	1	855-405/250-501	1
	400 A	1 A	5 VA	1	855-401/400-501	1
	400 A	5 A	5 VA	1	855-405/400-501	1
	600 A	1 A	5 VA	1	855-401/600-501	1
	750 A	5 A	5 VA	1	855-405/750-501	1

Plug-In Current Transformers with CAGE CLAMP® Connector 855 Series

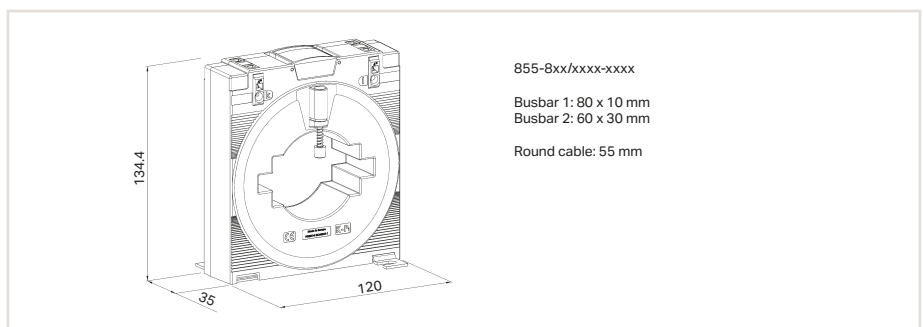


Plug-in current transformers	Primary Rated Current	Secondary Rated current	Rated Power	Accuracy Class	Item No.	Pack. Unit
	400 A	5 A	10 VA	1	855-505/400-1001	1
	600 A	5 A	10 VA	1	855-505/600-1001	1
	800 A	5 A	10 VA	1	855-505/800-1001	1
	1000 A	1 A	10 VA	1	855-501/1000-1001	1
	1000 A	5 A	10 VA	1	855-505/1000-1001	1

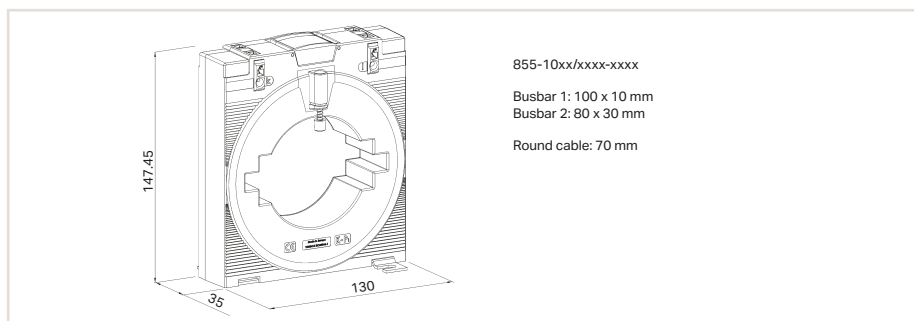
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Plug-in current transformers	Primary Rated Current	Secondary Rated current	Rated Power	Accuracy Class	Item No.	Pack. Unit
	1500 A	5 A	5 VA	1	855-605/1500-501	1
	1500 A	1 A	5 VA	1	855-601/1500-501	1



Plug-in current transformers	Primary Rated Current	Secondary Rated current	Rated Power	Accuracy Class	Item No.	Pack. Unit
	2000 A	5 A	10 VA	1	855-805/2000-1001	1
	2000 A	1 A	10 VA	1	855-801/2000-1001	1



Plug-in current transformers	Primary Rated Current	Secondary Rated current	Rated Power	Accuracy Class	Item No.	Pack. Unit
	2500 A	5 A	10 VA	1	855-1005/2500-1001	1
	2500 A	1 A	10 VA	1	855-1001/2500-1001	1

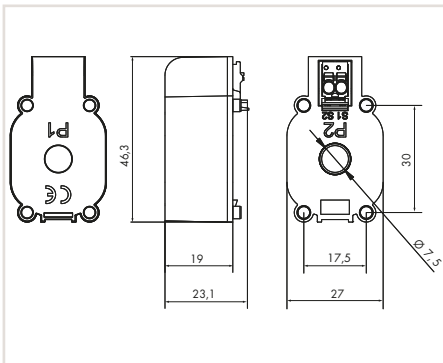
Plug-In Current Transformers with the *picoMAX*® Pluggable Connector 855 Series



Plug-in current transformer, primary rated current: 35/64 A, secondary rated current: 1 A, rated power: 0.2 VA, accuracy class: 1

I_{pr}	S_r	G	Item No.	Pack. Unit
35 A	0.2 VA	1	855-2701/035-001	15 (1)
64 A	0.2 VA	1	855-2701/064-001	15 (1)

I_{pr} = Primary rated current
 S_r = Rated power
G = Accuracy class



Short description:

The 855 Series Plug-In Current Transformers are inductive, single-conductor current transformers, that function according to the transformer principle. Based on the principle of measurement, current transformers of this type are for use in AC networks exclusively.

Features:

- First current transformer featuring *picoMAX*® connection technology
- Also suitable for space-restricted applications
- Simple assembly permits 17.5 mm phase spacing, allowing perfect adjustment to any circuit breaker.
- Easy mounting on DIN rail or panels via carrier rail adapter
- Converts current from 64 A or 35 A to 1 A
- Accuracy class: 1

Technical Data

Input	
Rated continuous thermal current I_{cth}	100 %
Rated short-time thermal current I_{th}	$60 \times I_{pr} / 1 \text{ s}$
Rated surge current I_{dyn}	$2.5 \times I_{th}$
Rated insulation level V_m	0.72/3/- kV
Rated frequency f_R	50 ... 60 Hz
Secondary Rated Current I_{sr}	1 A
General Specifications	
Conformity marking	CE
Standards/Approvals	EN 61869-1; EN 61869-2; (Recognized Components) E356480
Environmental Requirements	
Ambient operating temperature	-10 ... +55 °C
Storage temperature	-20 ... +70 °C
Relative humidity	5 % ... 85 % (non condensing)
Max. operating altitude	2000 m
Safety and Protection	
Protection type	IP20
Insulation class	E (120 °C)
Dimensions and Weight	
Dimensions (mm) W x H x D	27 x 46.3 x 23.1
Weight	40 g
Connection	
Feedthrough for Measurement Conductor	Ø 7.5 mm
Connection technology	Push-in CAGE CLAMP® (<i>picoMAX</i> ® 3.5, 2091-1122)
Conductor range	0.2 ... 1.5 mm ² / 24 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 in.

Accessories (Selection)

	Item No.	Pack. Unit
Carrier Rail Adapter for Plug-In Current Transformers	855-9927	1
Terminal Block Assembly for Current Transformers, see page 280		
Operating Tool, type 1, (2.5 x 0.4) mm blade, with partially insulated shaft	210-719	1



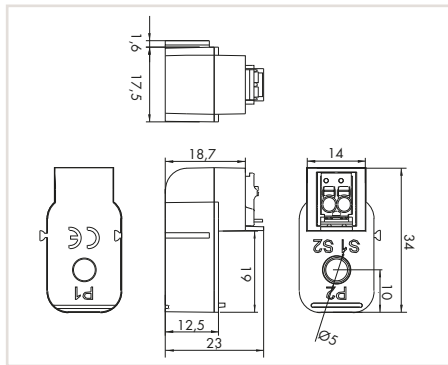
Plug-in current transformer, primary rated current: 32 A, secondary rated current: 320 A, rated power: 0.01 VA, accuracy class: 0.5

I_{pr}	S_r	G	Item No.	Pack. Unit
32 A	0.01 VA	0,5	855-1700/032-000	15 (1)

I_{pr} = Primary rated current *

S_r = Rated power

G = Accuracy class **



Short description:

The *picoMAX*® Plug-In Current Transformer with low-power output is specifically tailored to WAGO's 750 Series 3-Phase Power Measurement Modules.

Features:

- First *picoMAX*® plug-in current transformer with low power output
- Assembly via side latches
- Can be mounted directly on an ECB

Notes:

- The 855-1700/032-000 Plug-In Current Transformer is specifically tailored to the WAGO-I/O-SYSTEM and is only to be used with WAGO's 750 Series 3-Phase Power Measurement Modules.
- Recommended conductor cross-section and length: 1.5 mm² (14 AWG) and maximum 3.0 m at the output

* Measuring range: 0.8 ... 32 A in combination with the 750-493/-494/-495 3-Phase Power Measurement Modules

** Testing acc. to EN 61869-2 with a conversion ratio of 16 A/0.16 A (accuracy class: 0.5) and an extended primary current of 200%.

Technical Data

Input	
Rated short-time thermal current I_{th}	2 kA / 0.1 s
Rated surge current I_{dyn}	2.5 x I_{th}
Rated insulation level V_m	0.72/3/- kV
Rated frequency f_R	50 ... 60 Hz
Secondary Rated Current I_{sr}	0.32 A
General Specifications	
Conformity marking	CE
Standards/Approvals	EN 61869-2
Environmental Requirements	
Ambient operating temperature	-10 ... +55 °C
Storage temperature	-20 ... +70 °C
Relative humidity	5 % ... 85 % (non condensing)
Max. operating altitude	2000 m
Dimensions and Weight	
Dimensions (mm) W x H x D	17 x 34 x 23
Weight	11 g
Safety and Protection	
Protection type	IP20
Insulation class	E (120 °C)
Connection	
Feedthrough for Measurement Conductor	Ø 5.0 mm
Connection technology	Push-in CAGE CLAMP® (<i>picoMAX</i> ® 3.5, 2091-1122)
Conductor range	0.2 ... 1.5 mm ² / 24 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 in.

Accessories (Selection)

	Item No.	Pack. Unit
Operating Tool, type 1, (2.5 x 0.4) mm blade, with partially insulated shaft	210-719	50 (1)
3-Phase Power Measurement Module (1 A)	750-493	1
3-Phase Power Measurement Module (480 V / 1 A)	750-494	1
3-Phase Power Measurement Module (690 V / 1 A)	750-495	1

Split-Core Current Transformers

855 Series



4

Short description:

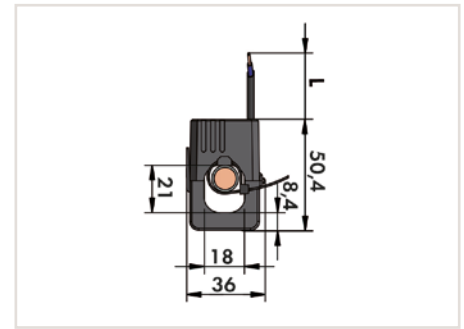
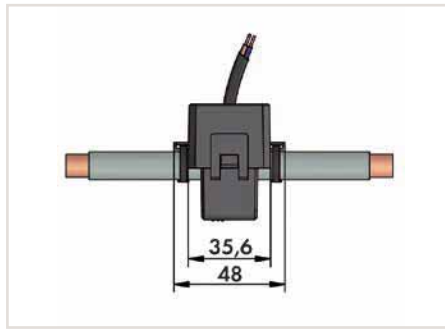
WAGO's compact Split-Core Current Transformers are ideal for retrofitting existing systems. They are particularly for applications in which the current path must not be disrupted. The transformer's accuracy permits extremely precise current measurements. The split-core current transformers are capable of supplying the specified rated power at the end of the secondary cable. All transformers are supplied with color-coded cables. Two UV-resistant cable ties are also included for secure and easy mounting.

Features:

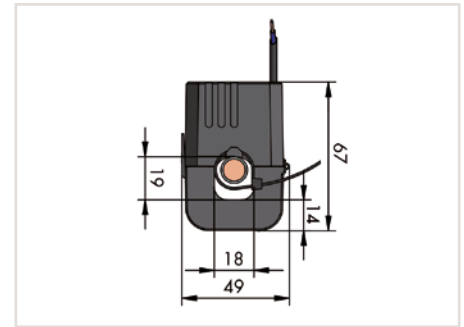
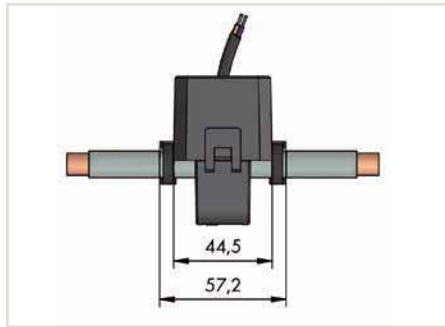
- Current ratios from 60 A up to 1000 A (primary side) and 1 A or 5 A (secondary side)
- No interruption of the measuring cable
- Ideal for use in very confined spaces
- Superfast mounting
- For use around insulated cables up to \varnothing 42 mm
- Compact and hinged
- Color-coded connecting cables up to 5 m

Technical Data

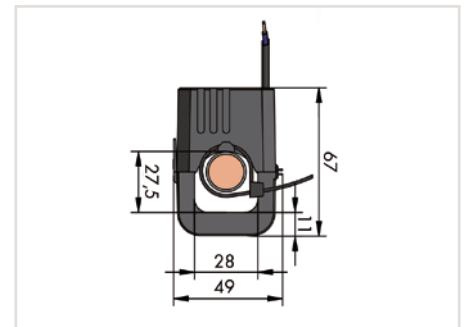
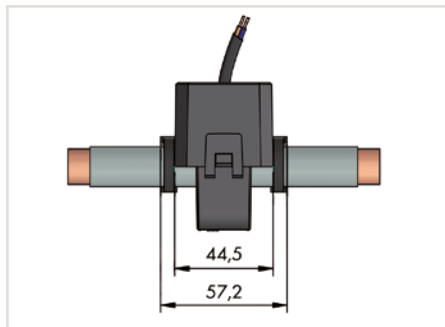
Input	
Rated continuous thermal current I_{cth}	100 %
Rated short-time thermal current I_{th}	$60 \times I_{pr} / 1 \text{ s}$
Rated surge current I_{dyn}	$2.5 \times I_{th}$
Rated frequency f_R	50 ... 60 Hz
Rated insulation level V_m	0.72/3/- kV
Connection	
Conductor cross section	0.5 mm ² , fine-stranded (855-xxx1/...) 1.5 mm ² , fine-stranded (855-xxx5/...)
Conductor identification	brown = S1, blue = S2 (855-xxx1/...) black = S1, red = S2 (855-xxx5/...)
General Specifications	
Conformity marking	CE
Standards/Approvals	EN 61869-1; EN 61869-2
Environmental Requirements	
Ambient operating temperature	-10 ... +55 °C -10 ... +40 °C (855-5xxx/1000-000)
Storage temperature	-20 ... +70 °C
Relative humidity	5 % ... 85 % (non condensing)
Max. operating altitude	2000 m
Safety and Protection	
Protection type	IP20
Insulation class	E (120 °C)



Feedthrough for Measurement Conductor	Primary Rated Current	Secondary Rated Current	Rated Power	Accuracy Class	Cable length	Item No.	Pack. Unit
Ø 18 mm	60 A	1 A	0.2 VA	3	3 m	855-3001/060-003	1
	100 A	1 A	0.2 VA	3	3 m	855-3001/100-003	1
	200 A	1 A	0.2 VA	1	3 m	855-3001/200-001	1
	250 A	1 A	0.2 VA	1	3 m	855-3001/250-001	1

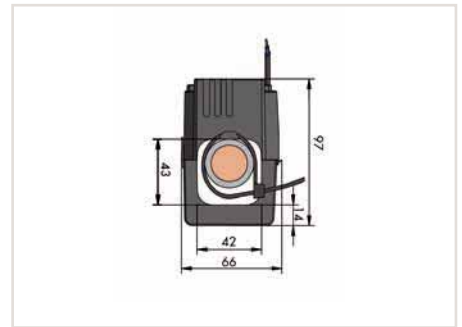
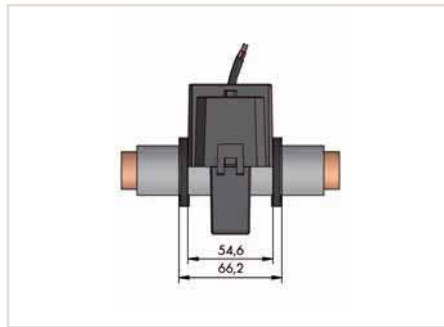


Feedthrough for Measurement Conductor	Primary Rated Current	Secondary Rated Current	Rated Power	Accuracy Class	Cable length	Item No.	Pack. Unit
Ø 18 mm	100 A	1 A	0.2 VA	1	3 m	855-4001/100-001	1
	150 A	1 A	0.2 VA	1	3 m	855-4001/150-001	1
	150 A	5 A	1 VA	1	0.5 m	855-4005/150-101	1
	200 A	1 A	0.2 VA	0,5	3 m	855-4001/200-001	1



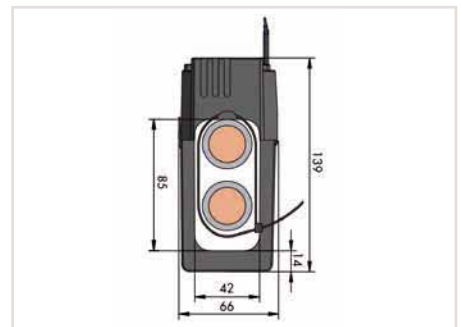
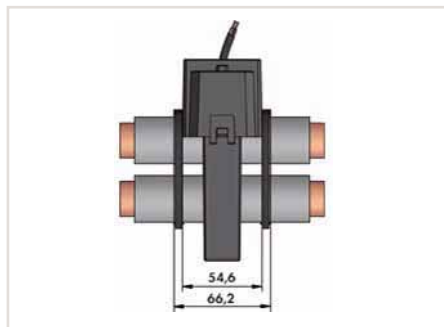
Feedthrough for Measurement Conductor	Primary Rated Current	Secondary Rated Current	Rated Power	Accuracy Class	Cable length	Item No.	Pack. Unit
Ø 28 mm	200 A	1 A	0.2 VA	1	3 m	855-4101/200-001	1
	250 A	1 A	0.2 VA	1	3 m	855-4101/250-001	1
	250 A	5 A	1 VA	1	0.5 m	855-4105/250-101	1
	400 A	1 A	0.2 VA	1	3 m	855-4101/400-001	1
	400 A	5 A	1 VA	1	0.5 m	855-4105/400-101	1

Split-Core Current Transformers 855 Series



Feedthrough for Measurement Conductor	Primary Rated Current	Secondary Rated Current	Rated Power	Accuracy Class	Cable length	Item No.	Pack. Unit
Ø 42 mm	250 A	1 A	0.5 VA	1	5 m	855-5001/250-001	1
	400 A	1 A	0.5 VA	0,5	5 m	855-5001/400-000	1
	400 A	5 A	0.5 VA	1	3 m	855-5005/400-001	1
	600 A	1 A	0.5 VA	0,5	5 m	855-5001/600-000	1
	600 A	5 A	0.5 VA	0,5	3 m	855-5005/600-000	1
	1000 A	1 A	0.5 VA	0,5	5 m	855-5001/1000-000	1
	1000 A	5 A	0.5 VA	0,5	3 m	855-5005/1000-000	1

4



Feedthrough for Measurement Conductor	Primary Rated Current	Secondary Rated Current	Rated Power	Accuracy Class	Cable length	Item No.	Pack. Unit
2 x Ø 42 mm	1000 A	1 A	0.5 VA	0,5	5 m	855-5101/1000-000	1
	1000 A	5 A	0.5 VA	0,5	3 m	855-5105/1000-000	1

Rogowski Coils

RT 500 and RT 2000

855 Series



Short description:

The Rogowski coil is a closed-air coil with a non-magnetic split core, placed around a cable or current bar. The magnetic field produced by the AC current flowing through the conductor induces an output voltage in the coil.

This measurement procedure provides galvanic isolation between the primary circuit (power) and the secondary circuit (measurement).

Easy placement of the Rogowski coils allows existing systems to be retrofitted without time-consuming installation or process interruption.

The Rogowski coil can be used together with the 789-652 Signal Conditioner or the 857-552 Rogowski Signal Conditioner.

Features:

- Split-core style coil for easy installation
- Ø 55 mm for non-contact measurement.
- 1.5 m or 3 m output cable
- Insulated plastic case to UL 94-V0

Technical Data

Electrical Data

Positioning error

±0.7 %

Output

Rated frequency f_R

50 Hz

Environmental Requirements

Ambient operating temperature

-40 ... +80 °C

Storage temperature

-40 ... +80 °C

Relative humidity

90 %

Max. operating altitude

2000 m

Technical Data

Conformity marking

CE

 (Recognized Components)

Environmental Requirements

Rated insulation voltage

300 V_{rms} AC (Cat. III)

Impulse withstand voltage (1.2/50 µs)

6.5 kV

Voltage for isolation test

3.5 kV_{rms} AC / 50 Hz / 1 min

Protection type

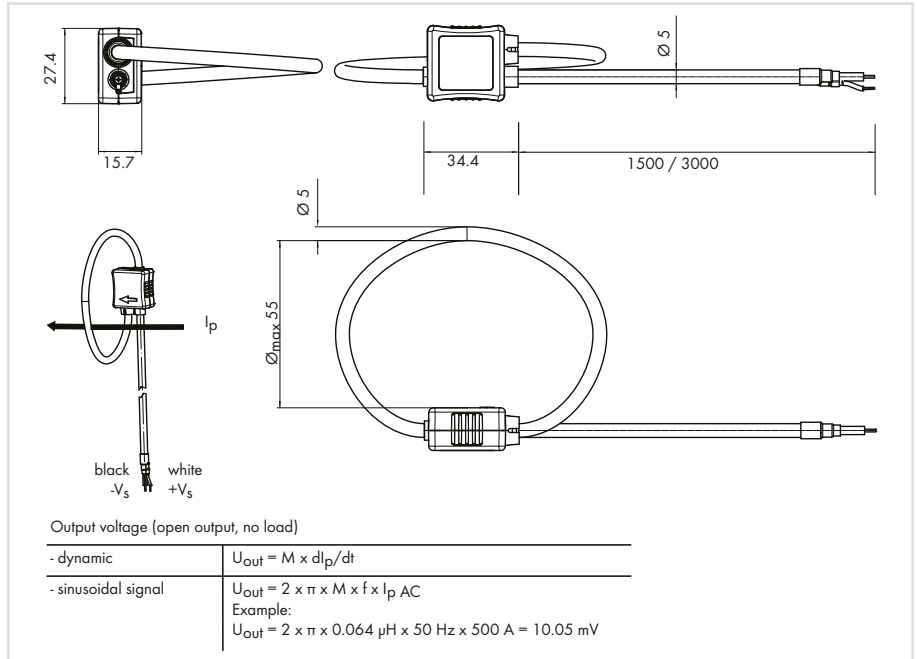
IP2X

Rogowski Coil RT 500



Rogowski coil, primary rated current: 500 A, output signal: 10.05 mV

Cable length	Item No.	Pack. Unit
1.5 m	855-9100/500-000	1
3 m	855-9300/500-000	1



Technical Data

Electrical Data

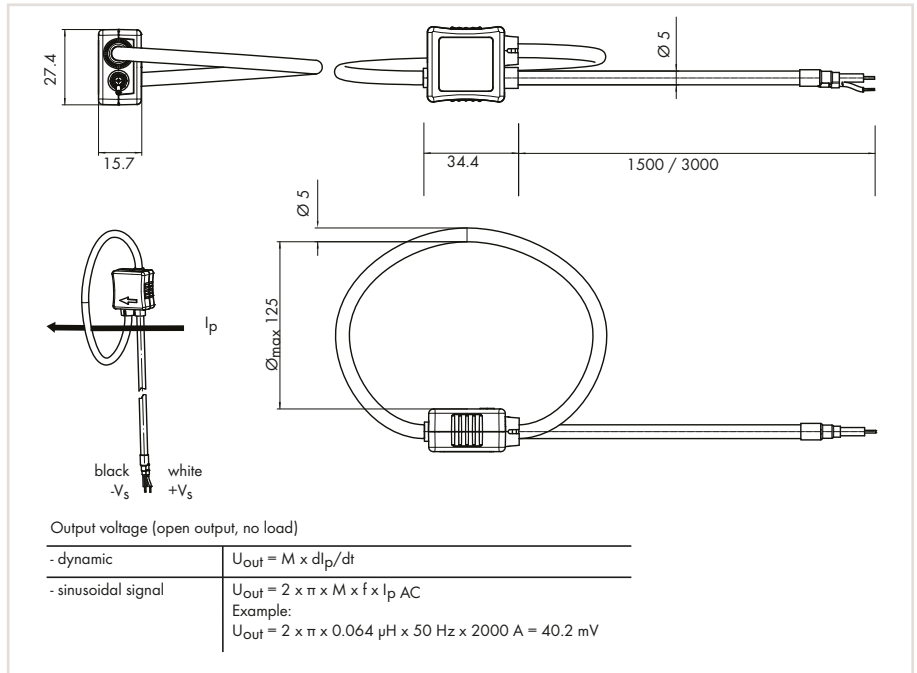
Primary rated current I_{pN}	500 A AC
Output	
Output signal	10.05 mV at 500 A / 50 Hz, sinusoidal

Rogowski Coil RT 2000



Rogowski coil, primary rated current: 2000 A, output signal: 40.2 mV

Cable length	Item No.	Pack. Unit
1.5 m	855-9100/2000-000	1
3 m	855-9300/2000-000	1



Technical Data

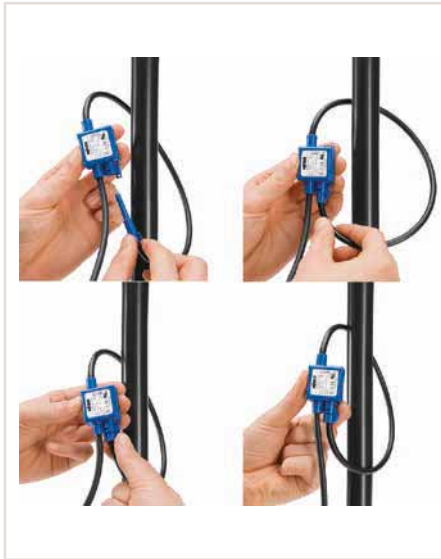
Electrical Data

Primary rated current I_{pN}	2000 A AC
Output	
Output signal	40.2 mV at 2000 A / 50 Hz sinusoidal

Rogowski Coils

RC 70, RC 125, RC 175

855 Series



Short description:

WAGO's Rogowski coils are closed-air coils featuring a non-magnetic split core that can be connected to a 3-Phase Power Measurement Module (750-495/000-002) or a Rogowski Signal Conditioner (857-552).

Easy placement of the Rogowski coils allows existing systems to be retrofitted without time-consuming installation or process interruption.

Rogowski technology allows the coils to measure a wide primary current range without loss of accuracy because there are no saturation effects.

Features:

- Rated insulation voltage 1000 V Cat. III / 600 V Cat. IV
- Accuracy class 1 acc. to EN 61869-2
- IP67 degree of protection
- Measurement coil diameter: 70, 125 or 175 mm
- Length of signal lines: 1.5 m or 4.5 m
- Ambient temperature: -40 ... +80 °C
- Sealable bayonet connector
- Fixing lugs for cable ties

Technical Data

Electrical Data

Primary rated current I_{pN}

4000 A AC

Rated short-time thermal current I_{th}

300 kA at 50 Hz

Accuracy Class

1 (acc. to EN 61869-2)

Positioning error

±0.32 %

Output

Output signal

22.5 mV/kA at 50 Hz

Rated frequency f_R

50 ... 60 Hz

General Specifications

Conformity marking

CE

Environmental Requirements

Ambient operating temperature

-40 ... +80 °C

Storage temperature

-40 ... +80 °C

Relative humidity

90 %

Max. operating altitude

2000 m

Safety and Protection

Rated insulation voltage

1000 V_{rms} AC (Cat. III);
600 V_{rms} AC (Cat. III)

Impulse withstand voltage (1.2/50 μs)

12.8 kV

Voltage for isolation test

7.4 kV_{rms} AC / 50 Hz / 1 min

Protection type

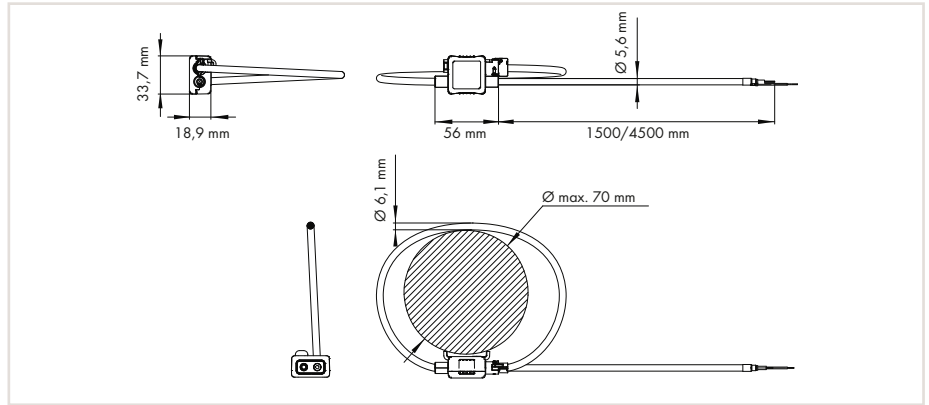
IP67

Rogowski Coil RC 70



Rogowski coil, primary rated current: 4000 A, output signal: 22.5 mV / 1 kA, measurement coil diameter: 70 mm

Cable length	Item No.	Pack. Unit
1.5 m	855-9150/2000-701	1
4.5 m	855-9450/2000-701	1



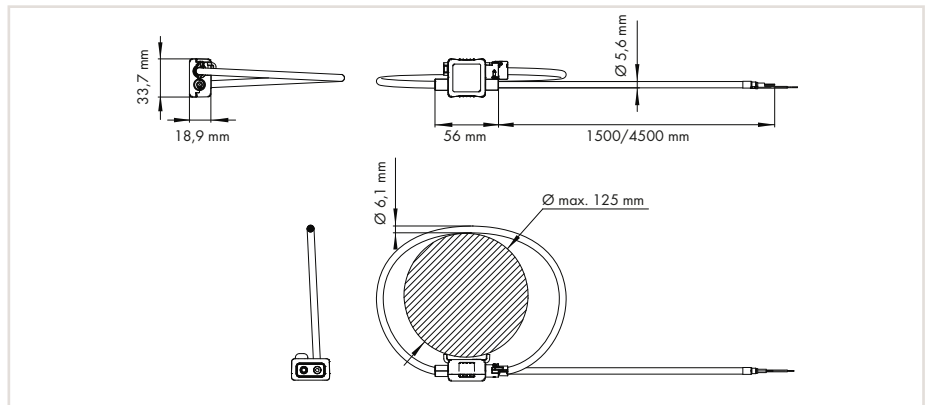
Technical Data	855-9150/2000-701	855-9450/2000-701
Feedthrough for measurement conductor	Ø 70 mm	Ø 70 mm
Weight	124 g	259 g

Rogowski Coil RC 125



Rogowski coil, primary rated current: 4000 A, output signal: 22.5 mV / 1 kA, measurement coil diameter: 125 mm

Cable length	Item No.	Pack. Unit
1.5 m	855-9150/2000-1251	1
4.5 m	855-9450/2000-1251	1



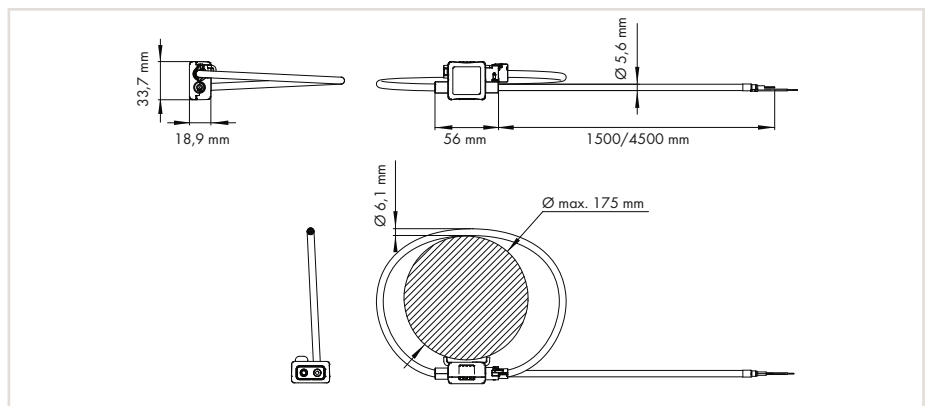
Technical Data	855-9150/2000-1251	855-9450/2000-1251
Feedthrough for measurement conductor	Ø 125 mm	Ø 125 mm
Weight	130 g	265 g

Rogowski Coil RC 175



Rogowski coil, primary rated current: 4000 A, output signal: 22.5 mV / 1 kA, measurement coil diameter: 175 mm

Cable length	Item No.	Pack. Unit
1.5 m	855-9150/2000-1751	1
4.5 m	855-9450/2000-1751	1

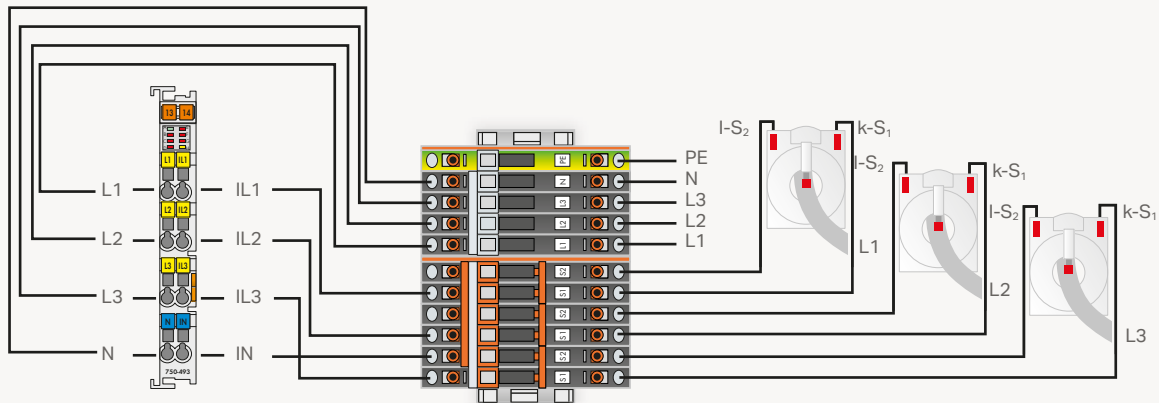


Technical Data	855-9150/2000-1751	855-9450/2000-1751
Feedthrough for Measurement Conductor	Ø 175 mm	Ø 175 mm
Weight	138 g	273 g

Terminal Block Assemblies for Current and Voltage Transformers

Fast and Easy Connection Options

4

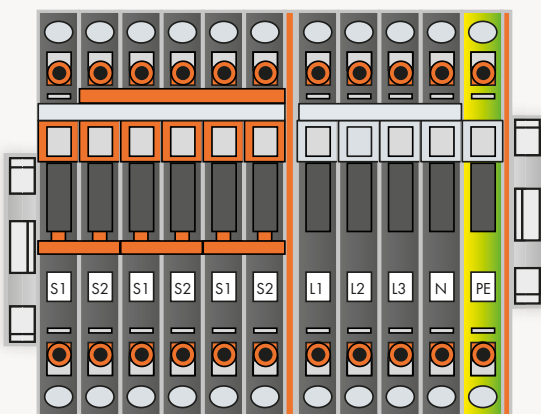


3-Phase Power Measurement Module, 750 Series

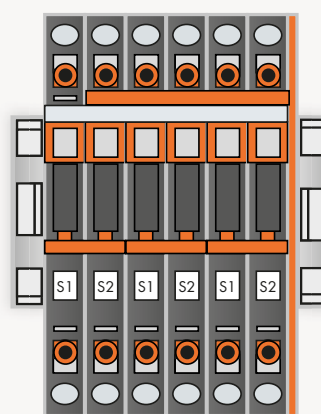
Terminal Block Assemblies for Current and Voltage Transformers, 2007 Series

Current Transformers, 855 Series

Pre-assembled terminal block assembly for easy connection and short-circuiting of current transformers, suitable for **750-493** and **750-494** 3-Phase Power Measurement Modules

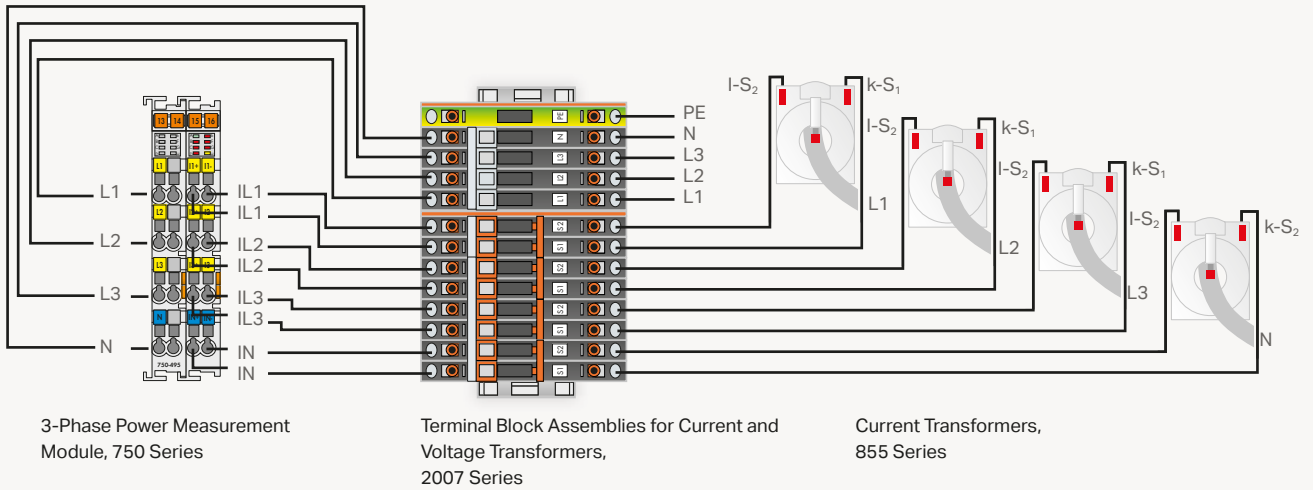


2007-8873
Connection option for current and voltage, including 'Y' point jumper

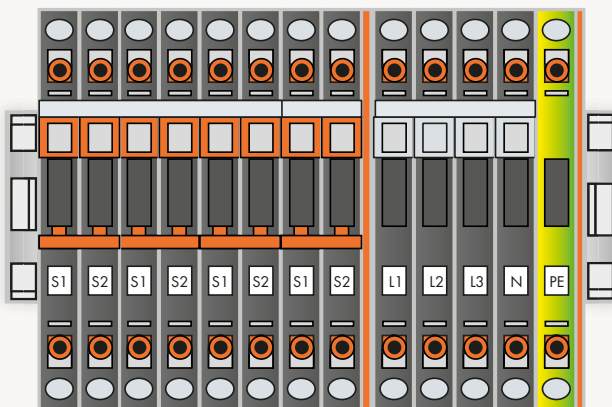


2007-8875
Connection option for current, including 'Y' point jumper

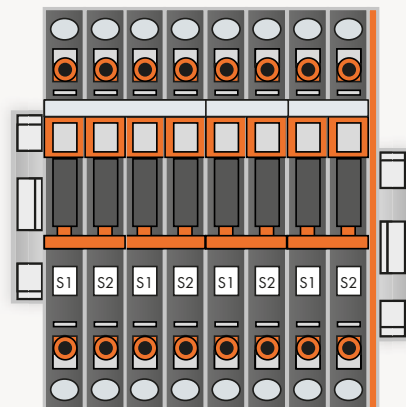
- 'Y' point jumper
- Easy and clear wiring
- Short-circuiting of current transformers
- Control measuring of energy measurement devices



Pre-assembled terminal block assembly for easy connection and short-circuiting of current transformers, suitable for **750-495** 3-Phase Power Measurement Modules



2007-8874
Connection option for current and voltage



2007-8877
Connection option for current

Current Sensor with Bus Connection in DIN-Rail-Mount Enclosure

Measurement Range: 0 ... 80 A DC

789 Series



Current sensor with bus connection,
input: 80 A DC, output: RS-485 Modbus

Item No.	Pack. Unit
789-620	1

4

Short description:

Intelligent current sensor for monitoring solar plants or inverters for DC measurements within a large current measurement range.

Technical Data

Electrical Data	
Measurement range	0 ... 80 ADC
Resolution	15 bits
Power supply	12 ... 34 V
Max. current consumption	≤ 8 mA at 24 V
Transmission error	≤ 0.5 % of upper range value (at room temperature)
Temperature coefficient	0.01 % /K
Time frame for polling by master	< 30 ms
Hot plugging	possible
Terminating resistor	150 Ω (can be activated via DIP switch 1)
Status indication	Green: power Red: measured current < -3 A or > 83 A
Mechanical Data	
Power cable feed-through	15 mm
Protection type	IP20
Communication	
Interface	RS-485
Transmission channels	Half duplex 8-bit data, 1 stop bit
Protocols	MODBUS over serial line
Connector	RJ-45
Addressing	1 ... 32
Max. length of bus line	≤ 1200 m
Baud rate	19200 baud
Parity	Even
General Specifications	
Dimensions (mm) W x H x D	35 x 55 x 90, Height from upper-edge of DIN-35 rail
Ambient operating temperature	-20 ... +70 °C
Storage temperature	-40 ... +85 °C
Conformity marking	CE
Standards/Approvals	DIN EN 50178

Accessories for data and auxiliary power supply

	Item No.	Pack. Unit
Interface module with RJ-45 connector	289-965	1
RJ-45 interface module with shield (screen) clamping saddle	289-966	1
ETHERNET RJ-45 Connector	750-975	1

789-620**RJ-45-Connector Pin Assignment:**

Pin	Function
1	Ub
2	
3	n.c.
4	A (Data+)
5	B (Data-)
6	n.c.
7	GND
8	

Communication Description:

MODBUS Function	Read Holding Registers (0x03)
Address of Measured Value	0x0004
Data Type Measurement	Integer

Error Numbers:	
id	Description
01	Illegal Function
03	Illegal Data
101	Overflow (Current > +83 A)
102	Underflow (Current < -3 A)

DIP Switch Adjustability

● = ON

Adress	DIP Switch				
	2	3	4	5	6
1					
2					●
3				●	
4				●	●
5			●		
6			●		●
7			●	●	
8			●	●	●
9		●			
10		●			●
11		●		●	
12		●		●	●
13		●	●		
14		●	●		●
15		●	●	●	
16		●	●	●	●
17	●				
18	●				●
19	●			●	
20	●			●	●
21	●		●		
22	●		●		●
23	●		●	●	
24	●		●	●	●
25	●	●			
26	●	●			●
27	●	●		●	
28	●	●		●	●
29	●	●	●		
30	●	●	●		●
31	●	●	●	●	
32	●	●	●	●	●

Terminating resistor	DIP Switch 1
-	
150 Ohm	●

NOTICE:
Only set the MODBUS address in the OFF state.

Current Sensor with Bus Connection in DIN-Rail-Mount Enclosure

Measurement Range: 0 ... 140 A DC

789 Series



Current sensor with bus connection,
input: 140 A DC, output: RS-485 Modbus

Item No.	Pack. Unit
789-621	1

4

Short description:

Intelligent current sensor for monitoring solar plants or inverters for DC measurements within a large current measurement range.
Installation on DIN-35 carrier rails

Technical Data

Electrical Data

Measurement range	0 ... 140 A DC
Resolution	15 bits
Power supply	12 ... 34 V
Max. current consumption	≤ 8 mA at 24 V
Transmission error	0 ... 80 A: ≤ 0.5 % of upper range value (at room temperature) 80 ... 140 A: ≤ 1 % of upper range value (at room temperature)
Temperature coefficient	≤ 0.05 % /K (at ambient operating temperature: -20 ... +60 °C); ≤ 0.1 % /K (at ambient operating temperature: +60 ... +70 °C)
Time frame for polling by master	< 30 ms
Hot plugging	possible
Terminating resistor	150 Ω (can be activated via DIP switch 1)
Status indication	Green: power Red: measured current < -3 A or > 143 A

Mechanical Data

Power cable feed-through	15 mm
Protection type	IP20

Communication

Interface	RS-485
Transmission channels	Half duplex 8-bit data, 1 stop bit
Protocols	MODBUS over serial line
Connector	RJ-45
Addressing	1 ... 32
Max. length of bus line	≤ 1200 m
Baud rate	19200 baud
Parity	Even

General Specifications

Dimensions (mm) W x H x D	35 x 55 x 90, Height from upper-edge of DIN-35 rail
Ambient operating temperature	-20 ... +70 °C
Storage temperature	-40 ... +85 °C
Conformity marking	CE
Standards/Approvals	DIN EN 50178

Accessories for data and auxiliary power supply

	Item No.	Pack. Unit
RJ-45 interface module	289-965	1
RJ-45 interface module with shield (screen) clamping saddle	289-966	1
ETHERNET RJ-45 Connector	750-975	1

789-621

RJ-45-Connector Pin Assignment:

Pin	Function
1	Ub
2	
3	n.c.
4	A (Data+)
5	B (Data-)
6	n.c.
7	GND
8	

Communication Description:

MODBUS Function	Read Holding Registers (0x03)
Address of Measured Value	0x0004
Data Type Measurement	Integer

Error Numbers:	
id	Description
01	Illegal Function
03	Illegal Data
101	Overflow (Current > +83 A)
102	Underflow (Current < -3 A)

DIP Switch Adjustability

● = ON

Adress	DIP Switch					
	2	3	4	5	6	
1						
2					●	
3				●		
4				●	●	
5			●			
6			●		●	
7			●	●		
8			●	●	●	
9		●				
10		●			●	
11		●		●		
12		●		●	●	
13		●	●			
14		●	●		●	
15		●	●	●		
16		●	●	●	●	
17	●					
18	●				●	
19	●			●		
20	●			●	●	
21	●		●			
22	●		●		●	
23	●		●	●		
24	●		●	●	●	
25	●	●				
26	●	●			●	
27	●	●		●		
28	●	●		●	●	
29	●	●	●			
30	●	●	●		●	
31	●	●	●	●		
32	●	●	●	●	●	

Terminating resistor	DIP Switch 1
-	
150 Ohm	●

NOTICE:
Only set the MODBUS address in the OFF state.

Current Sensor with Bus Connection in DIN-Rail-Mount Enclosure

Measurement Range: 0 ... 50 A_{rms} AC

789 Series



Current sensor with bus connection,
input: 50 A DC, output: RS-485 Modbus

Item No.	Pack. Unit
789-622	1

4

Short description:

Intelligent DIN-35 rail-mount current sensor for monitoring AC currents.
Installation on DIN-35 carrier rails

Technical Data

Electrical Data	
Measurement range	0 ... 50 A _{rms} AC
Resolution	14 bits
Power supply	12 ... 34 V
Max. current consumption	≤ 8 mA at 24 V
Transmission error	typ. < 1 %; max. < 3 % of upper range value (at room temperature)
Temperature coefficient	≤ 0.01% /K
Time frame for polling by master	< 30 ms
Hot plugging	possible
Terminating resistor	150 Ω (can be activated via DIP switch 1)
Status indication	Green: power Red: measured current > 55 A _{rms}
Mechanical Data	
Power cable feed-through	15 mm
Protection type	IP20
Communication	
Interface	RS-485
Transmission channels	Half duplex 8-bit data, 1 stop bit
Protocols	MODBUS over serial line
Connector	RJ-45
Addressing	1 ... 32
Max. length of bus line	≤ 1200 m
Baud rate	19200 baud
Parity	Even
General Specifications	
Dimensions (mm) W x H x D	35 x 55 x 90, Height from upper-edge of DIN-35 rail
Ambient operating temperature	-20 ... +70 °C
Storage temperature	-40 ... +85 °C
Conformity marking	CE
Standards/Approvals	DIN EN 50178

Accessories for data and auxiliary power supply

	Item No.	Pack. Unit
Interface module with RJ-45 connector	289-965	1
RJ-45 interface module with shield (screen) clamping saddle	289-966	1
ETHERNET RJ-45 Connector	750-975	1

789-622

RJ-45-Connector Pin Assignment:

Pin	Function
1	Ub
2	
3	n.c.
4	A (Data+)
5	B (Data-)
6	n.c.
7	GND
8	

Communication Description:

MODBUS Function	Read Holding Registers (0x03)
Address of Measured Value	0x0004
Data Type Measurement	Integer

Error Numbers:	
id	Description
01	Illegal Function
03	Illegal Data
101	Overflow (Current > +83 A)
102	Underflow (Current < -3 A)

DIP Switch Adjustability

● = ON

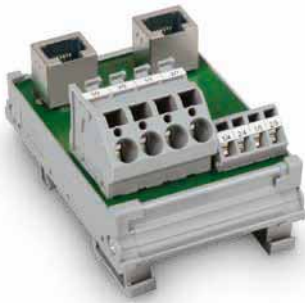
Adress	DIP Switch					
	2	3	4	5	6	
1						
2					●	
3				●		
4				●	●	
5			●			
6			●		●	
7			●	●		
8			●	●	●	
9		●				
10		●			●	
11		●		●		
12		●		●	●	
13		●	●			
14		●	●		●	
15		●	●	●		
16		●	●	●	●	
17	●					
18	●				●	
19	●			●		
20	●			●	●	
21	●		●			
22	●		●		●	
23	●		●	●		
24	●		●	●	●	
25	●	●				
26	●	●			●	
27	●	●		●		
28	●	●		●	●	
29	●	●	●			
30	●	●	●		●	
31	●	●	●	●		
32	●	●	●	●	●	

Terminating resistor	DIP Switch 1
-	
150 Ohm	●

NOTICE:
Only set the MODBUS address in the OFF state.

Accessories for Current Sensors

789 Series

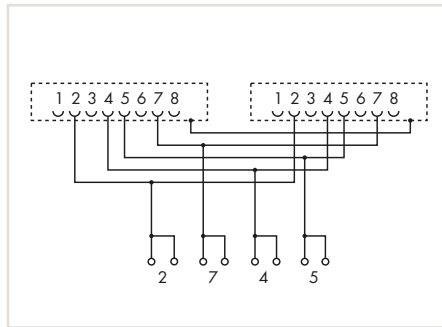


Compatible on the field side with the 789-620, 789-621 and 789-622

Required terminal assignment:

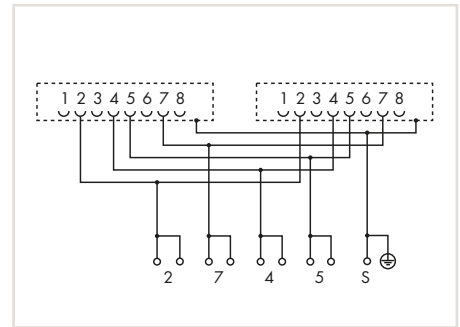
- 2: + Supply
- 7: - Supply
- 4: D+
- 5: D-

For 289-966, direct shield connection to the carrier rail via shield grounding foot.



2 x RJ-45 interface module, PCB terminal block, double-row, in mounting carrier

	Item No.	Pack. Unit
	289-965	1



2 x RJ-45 interface module with shield connection, PCB terminal block, double-row, in mounting carrier

	Item No.	Pack. Unit
	289-966	1

Technical Data

Connecting cable	assembled RJ-45 cable (recommended: UTP)	assembled RJ-45 cable, shielded (recommended: UTP, STP)
Connector	RJ-45, shielded	RJ-45, shielded
Min. mating cycles	500	500
Current load	≤ 1.5 A	≤ 1.5 A
Insulation resistance	> 500 MΩ	> 500 MΩ
Dielectric strength contact-contact	0.5 kV _{rms}	0.5 kV _{rms}
Contact resistance typ.	< 20 mΩ	< 20 mΩ
WAGO shield (screen) clamping saddle		790-124 (included)
Ambient operating temperature	-20 ... +85 °C	-20 ... +85 °C
Dimensions (mm) W x H x D incl. mounting carriers/mounting feet	40 x 58 x 85 (Height from upper-edge of DIN-35 rail)	40 x 69 x 85 Height from upper-edge of DIN-35 rail
Connection technology	Clamping units 4, 5: CAGE CLAMP® (WAGO 236 Series) Clamping units 2, 7: CAGE CLAMP® (WAGO 745 Series)	Clamping units 4, 5: CAGE CLAMP® (WAGO 236 Series) Clamping units 2, 7: CAGE CLAMP® (WAGO 745 Series)
Conductor range	Clamping units 4, 5: 0.08 ... 2.5 mm ² / 28 ... 12 AWG (12 AWG: THHN, THWN) Clamping units 2, 7: 0.2 ... 6 mm ² / 24 ... 10 AWG	Clamping units 4, 5: 0.08 ... 2.5 mm ² / 28 ... 12 AWG (12 AWG: THHN, THWN) Clamping units 2, 7: 0.2 ... 6 mm ² / 24 ... 10 AWG
Strip length	Clamping units 4, 5: 5 ... 6 mm / 0.2 ... 0.24 in. Clamping units 2, 7: 11 ... 12 mm / 0.43 ... 0.47 in.	Clamping units 4, 5: 5 ... 6 mm / 0.2 ... 0.24 in. Clamping units 2, 7: 11 ... 12 mm / 0.43 ... 0.47 in.

ETHERNET RJ-45 Connector

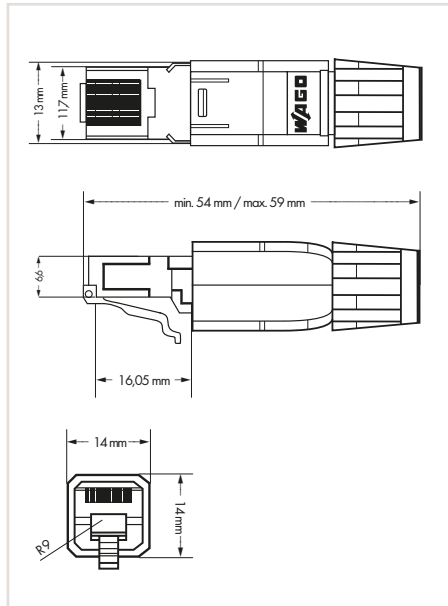
ETHERNET 10/100 Mbit/s; for Field Assembly

750 Series

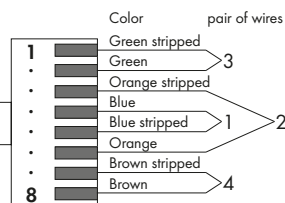


ETHERNET RJ-45 connector

Item No.	Pack. Unit
750-975	1



Pin assignment TIA-568A



Versatile RJ-45 connector for industrial, office, and building wiring.

The compact RJ-45 ETHERNET connector uses IDC technology for easy field assembly – connection is made without tools. The connector is compliant with the required standards. Large conductor cross-sections can also be connected and the connector satisfies Category 5e.

Technical Data

General Specifications

No. of poles	8
Contact material	Bronze (CuSn6)
Contact plating	> 1.2 μm gold over 1.2 μm nickel
Insulation material	PC (UL-94-V0)
Housing material	Plastic, gray, (UL-94-V0)
Mating cycles	≥ 1000
Connection technology	IDC (Insulation Displacement Contact), acc. to 60352-4
IDC surface treatment	Tin-plated, approx. 5 μm
Conductor range	solid: 0.13 ... 0.24 mm ² / 26/1 ... 23/1 AWG stranded: 0.14 ... 0.36 mm ² / 26/7 ... 22/7 AWG
Admissible insulation \varnothing	≤ 1.6 mm
Cable jacket \varnothing	4.5 ... 8.0 mm
Wire strain relief	With plastic ribs
Cable strain relief	> 50 N
Shield contacting	Large surface > 180° (on cable shield)
Shield material	Brass (CuZn), hot-dip tinned 3 μm
Ambient operating temperature	-20 ... +70 °C
Storage temperature	-40 ... +70 °C
Protection type	IP20

Standards/Approvals

Electrical Data

Contact resistance	(wire – IDC) < 1 m Ω ; (strand – IDC) < 5 m Ω
Connector shield	< 20 m Ω
Insulation resistance	(100 V) > 1 G Ω
Dielectric strength	(contact-contact) > 1000 V, 1 min.; (shield-contact) > 1500 V, 1 min.
Nominal current	1.75 A / 20 °C

Voltage Taps

855 Series



Short description:

The 855 Series Voltage Taps easily and safely tap the measurement voltage. This allows a fuse-protected measurement voltage to be tapped from an insulated conductor with just one turn – no tools required.

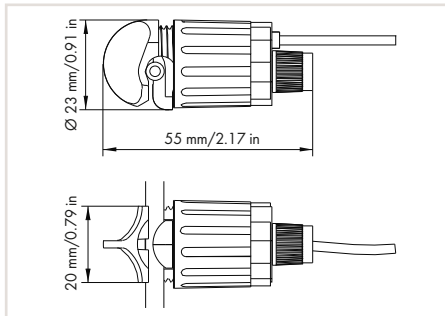
Features:

- Safely tap the measurement voltage with just one turn
- Tool-free assembly
- Safe mounting
- 855-8001 and 855-8003 Voltage Taps, including (5 x 25) mm 2 A fuse
- For insulated conductors up to 16 mm² (6 AWG)

Technical Data

General Specifications

Nominal voltage	400 VAC
Max. permissible continuous current	2 A
Max. voltage drop at output	< 500 mV AC
Test voltage	3 kV, 50 Hz, 1 min.
Degree of pollution	2
Rated surge voltage	6 kV
Overvoltage category	III
Output short circuit protection	6 kA at 400 V/50 Hz
Conformity marking	CE
Standards/Approvals	EN 60998-1:2004; EN 60998-2-3:2004; EN 60947-7-3:2009; EN 60721-3-3:1996; EN 50581:2012
Environmental Requirements	
Ambient operating temperature	-5 ... +55 °C
Storage temperature	-20 ... +70 °C
Relative humidity	5 % ... 85 % (non condensing)
Max. operating altitude	2000 m
Safety and Protection	
Protection type	IP20
Connection and Mounting Type	
Mounting	on insulated round conductor, IDC connection
Type of cable, cable length	Secondary side: flexible, 3 m long, 1.0 mm ² (17 AWG) cross-section, with ferrule

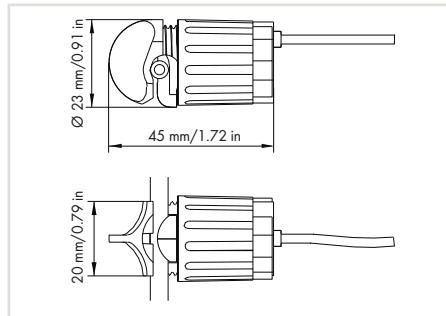


Voltage tap, with fuse, 2.5 ... 6 mm², phase

Color	Item No.	Pack. Unit
black	855-8001	1

Technical Data

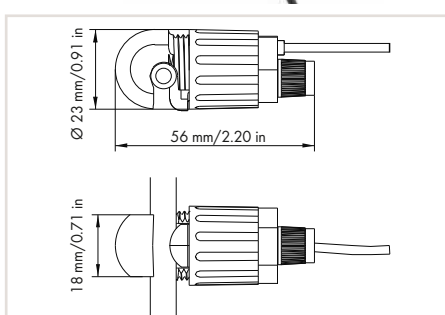
Conductor range	solid/fine-stranded: 2.5 ... 6 mm ² (14 ... 10 AWG)
Feedthrough for measurement conductor	Ø 3 ... 5 mm
Fuse	2 A, 450 V, F, 70 kA, 5 x 25 mm
Dimensions (W x H x D)	23 x 59 x 23 mm
Weight	28 g



Voltage tap, without fuse, 2.5 ... 6 mm², neutral conductor

Color	Item No.	Pack. Unit
Blue	855-8002	1

Conductor range	solid/fine-stranded: 2.5 ... 6 mm ² (14 ... 10 AWG)
Feedthrough for measurement conductor	Ø 3 ... 5 mm
Fuse	2 A, 450 V, F, 70 kA, 5 x 25 mm
Dimensions (W x H x D)	23 x 50 x 23 mm
Weight	20 g

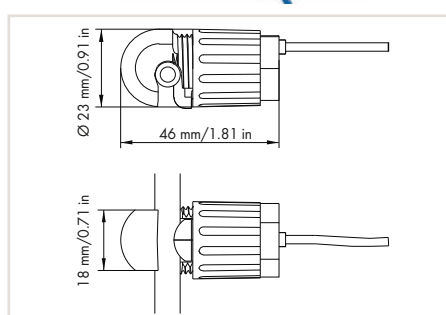


Voltage tap, without fuse, 10 ... 16 mm², neutral conductor

Color	Item No.	Pack. Unit
black	855-8003	1

Technical Data

Conductor range	solid/fine-stranded 10 ... 16 mm ² (8 ... 6 AWG)
Feedthrough for measurement conductor	Ø 5 mm ... 7 mm
Fuse	2 A, 450 V, F, 70 kA, 5 x 25 mm
Dimensions (W x H x D)	23 x 59 x 23 mm
Weight	29 g



Voltage tap, with fuse, 10 ... 16 mm², phase

Color	Item No.	Pack. Unit
Blue	855-8004	1

Conductor range	solid/fine-stranded 10 ... 16 mm ² (8 ... 6 AWG)
Feedthrough for measurement conductor	Ø 5 mm ... 7 mm
Fuse	2 A, 450 V, F, 70 kA, 5 x 25 mm
Dimensions (W x H x D)	23 x 50 x 23 mm
Weight	21 g



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POWER AND ENERGY MEASUREMENT

with 3-Phase Power Measurement Modules

We Reduce Your Energy Costs!

The WAGO-I/O-SYSTEM 750 offers a comprehensive range of perfectly tuned product portfolio for energy measurement. The 3-Phase Power Measurement Module record and process all relevant metrics from a three-phase supply network. They provide system operators with increased insight into energy consumption by specific machines and systems, as well as the ability to perform comprehensive network analysis.

We Protect Your Machines!

Additionally, collected metrics allow the operator to optimize the supply to a drive or machine, protecting the system from damage and failure. To achieve this, WAGO's 3-Phase Power Measurement modules can be easily integrated into existing systems for intelligent and economical machine protection.

- Measure machine and system energy consumption values
- Determine and process all relevant metrics
- Comprehensive network analysis
- Connect to the WAGO-I/O-SYSTEM: field-bus-independent, compact and flexible
- Compatible with the dark gray modules from the robust WAGO-I/O-SYSTEM 750 XTR Series – perfect for monitoring harsh applications in eXTReme environments:
 - eXTReme temperature resistance from -40 to +70 °C
 - eXTReme isolation up to 5 kV impulse voltage
 - eXTReme vibration resistance to 5 g acceleration



4

	750-493	750-494	750-495
Energy consumption	✓	✓	✓
Voltage	3~ 480 V	3~ 480 V	3~ 480 V/690 V
Current	1 A (750-493) 5 A (750-493/000-001)	1 A (750-494) 5 A (750-494/000-001)	1 A (750-495) 5 A (750-495/000-001) Rogowski coil (750-495/000-002)
Active power/energy	✓	✓	✓
Phase position	✓	✓	✓
Reactive power/energy	via function block	✓	✓
Apparent power/energy	via function block	✓	✓
Rotary field detection		✓	✓
Power factor	(✓)	✓	✓
Frequency measurement	✓	✓	✓
Four-quadrant operation (inductive, capacitive, consumer, generator)		✓	✓
Harmonic analysis (up to the 41st harmonic)		✓	✓
N-conductor measurement			✓
Other models		Extended temperature range: -20 ... +60 °C: 750-494/025-000 (1 A), 750-494/025-001 (5 A)	750 XTR (-40 ... +70 °C): 750-495/040-000 (1 A), 750-495/040-001 (5 A), 750-495/040-002 (Rogowski coil)
Housing width	12 mm	12 mm	24 mm

JUMPFLEX® Signal Conditioners

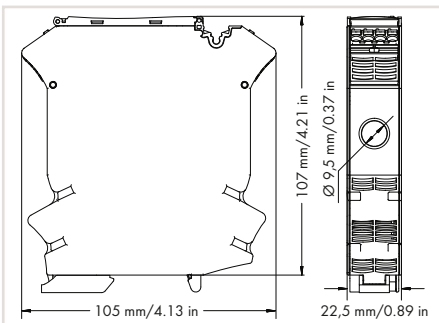
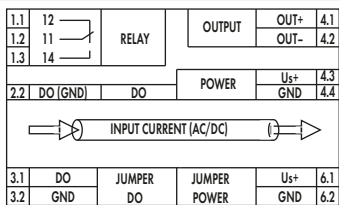
Current Signal Conditioner 100 A AC/DC

2857 Series



JUMPFLEX® Current Signal Conditioner, current input signal 100 A AC/DC, current and voltage output signal, digital and relay output, configuration via software, supply voltage: 24 VDC, 22.5 mm wide

Item No.	Pack. Unit
2857-550	1



Short description:

The 2857-550 Current Signal Conditioner measures AC/DC currents up to 100 A, while converting the measured current into an analog standard signal at the output.

Features:

- Both digital signal output and relay with changeover contact react to configured measuring range limits (switching ON/OFF delay and threshold value switch function configurable with up to two threshold values).
- Clipping capability provides analog signal limitation to output end values.
- Adjustable software filter
- Input/Output response simulation via configuration display
- Safe 3-way isolation with 4 kV test voltage per EN 61140

Specialty functions



Configuration via



Accessories, see page 258

Technical Data

Configuration

Configuration

DIP switch, interface configuration software, interface configuration app, configuration display

Input

Input signal
Response threshold
Resolution
Frequency range

0.5 ... 100 A (AC) / -100 ... 100 A (DC) *
500 mA (AC) / 250 mA (DC)
10 mA
15 ... 1000 Hz

Output

Output signal

Current

±10 mA; 0 ... 10 mA; 2 ... 10 mA;
±20 mA; 0 ... 20 mA; 4 ... 20 mA *

Voltage

±5 V; 0 ... 5 V; 1 ... 5 V;
±10 V; 0 ... 10 V; 2 ... 10 V *

Overcurrent

0 % or +5 % (e.g. 10.5 V / 24 mA)

Measuring range overflow/underflow

0 % or +2.5 %

Load Impedance

Current

≤ 600 Ω

Voltage

≥ 1 kΩ

Measuring procedure

True RMS measurement (TRMS) or Arithmetic mean value *

Output – Digital

Max. switching voltage
Max. continuous current I_{DO}

Supply voltage applied -0.3 V
100 mA (no internal restriction)

Output – Relay

Contact type
Contact material
Max. switching voltage

1 changeover contact (1 u)
AgNi (gold-plated)
250 VAC

Max. continuous current (terminal blocks in a row)

6 A

Dielectric strength, open contact (AC, 1 min)

1 kV_{rms}

Pull-in/drop-out/bounce time typ.

8 ms / 4 ms / 8 ms

General Specifications

Nominal supply voltage V_S
Supply voltage range
Current consumption at 24 VDC
Max. operating frequency
Response time
Response time (T_{10-90})
Linearity error
Measurement error
Temperature coefficient
Conformity marking

24 VDC
 $V_S -30 ... +30 \%$
≤ 50 mA (+ I_{DO})
3.3 kHz
Signal cycle duration + 1 ms
max. 60 ms
≤ 1 %
≤ 0.2 % (of the full scale value)
≤ 0.01% / K
CE
DIN EN 60664-1;
Safe isolation acc. to DIN EN 61140

Environmental Requirements

Ambient operating temperature
Storage temperature

-40 ... +70 °C
-40 ... +85 °C

Safety and Protection

Test voltage
(input/output/supply)
Test voltage (measuring circuit – output)

2.5 kV (AC), 50 Hz, 1 min.
4 kV (AC), 50 Hz, 1 min.

Connection and Mounting Type

Connection technology
Conductor range
solid
fine-stranded

Push-in CAGE CLAMP® (picoMAX® 5.0)

Strip length
Feedthrough for Measurement Conductor

0.2 ... 2.5 mm²
24 ... 12 AWG
9 ... 10 mm / 0.35 ... 0.39 in.
Ø 9.5 mm

Dimensions and Weight

Dimensions (mm) W x H x D
Weight

22.5 x 107 x 105 Height from upper-edge of DIN-35 rail
106 g

(*Other setting options via the interface configuration software or the interface configuration app)

2857-550

DIP Switch Adjustability

● = ON

DIP Switch S1

Measuring Method		Filter		Analog Output Inverted		Output Signal (Bipolar for Arithmetic Mean Value)			
1	2	3	4	5	6	Analog Output			
	True RMS	inactive	not inverted			(±) 0 ... 20 mA			
●	Arithmetic mean value (bipolar output)	● active	● inverted		●	4 ... 20 mA			
				●		(±) 0 ... 10 V			
				●	●	2 ... 10 V			
					●	(±) 0 ... 10 mA			
				●	●	2 ... 10 mA			
				●	●	(±) 0 ... 5 V			
				●	●	1 ... 5 V			

DIP Switch S1

Measuring Range Underflow		Measuring Range Overflow		Overcurrent (Input Signal - End Value +20%)		Digital Output (DO)/ Relay	
7	8	9	10	9	10	Digital Output (DO)/ Relay	
	Lower measuring range -5% *	Upper measuring range +2.5% *	Upper measuring range +5%			Off	
●	Lower measuring range	Upper measuring range +2.5%	Upper measuring range +5%	●		DO Us+ switching – relay pulls in	
	● Lower measuring range	Upper measuring range	Lower measuring range		●	DO GND switching – relay drops out	
●	● Lower measuring range -5 %	Upper measuring range +5%	Upper measuring range	●	●	Off	

*acc. to NAMUR NE 43

DIP Switch S2

Lower Value				Upper value			
1	2	3	4	5	6	7	
A / % (RMS)			A / % (arithmetic mean value)	A / %			
Software configuration (0)			Software configuration (-100)	Software configuration (100)			
●			0	-100	●		100
	●		5	-75		●	90
●	●		8	-50	●	●	70
		●	10	-25		●	50
●		●	12	-10	●	●	30
	●	●	14	0		●	20
●	●	●	16	5	●	●	10
			● 18	10			
●			● 20	15			
	●		● 25	20			
●	●		● 30	25			
		●	● 35	30			
●		●	● 40	35			
	●	●	● 45	40			
●	●	●	● 50	50			

JUMPFLEX® Signal Conditioners

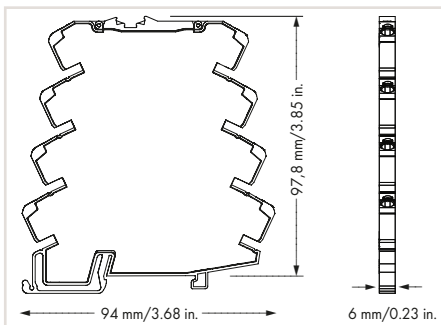
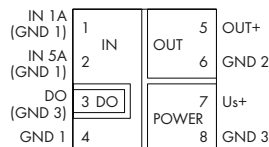
Current Signal Conditioner 0 ... 1 A, 0 ... 5 A AC/DC

857 Series



JUMPFLEX® Current Signal Conditioner, current input signal 5 A AC/DC, current and voltage output signal, digital output, configuration via software, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-550	1



Short description:

The 857-550 Current Signal Conditioner measures both 0 ... 1 A and 0 ... 5 A AC/DC currents, while converting the input signal to an analog standard signal at the output.

Features:

- PC configuration interface
- True RMS measurement or arithmetic mean value*
- Digital switching output (configurable switching thresholds)
- Switchable filter function
- Switching between measurement ranges is calibrated
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140
- Extremely fast response times
- Measuring range overflow indication

Specialty functions



Configuration via



Accessories, see page 258

Technical Data

Configuration

Configuration

DIP switch, interface configuration software, interface configuration app

Input

Input signal
Input resistance
Frequency range
Response threshold
Current carrying capacity

0 ... 1 A AC/DC; 0 ... 5 A AC/DC *
10 mΩ (5 A); 47 mΩ (1 A)
16 ... 400 Hz
< 0.5 % (of measuring range nominal value)
2 x I_N (continuous)

Output

Output signal
Current
Voltage

0 ... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V *

Load Impedance

0 ... 10 mA, 2 ... 10 mA, 0 ... 20 mA, 4 ... 20 mA *
≤ 600 Ω (I output)**
≥ 2 kΩ (U output)
** Temperature range restrictions may occur.

Filter (T₁₀₋₉₀)

260 ms (DC), 600 ms (AC 50 Hz)

Output – Digital

Max. switching voltage
Max. Continuous Current

Supply voltage applied
500 mA (to 60 °C)
100 mA (60 ... 70 °C)

General Specifications

Nominal supply voltage V_S
Supply voltage range
Current consumption at 24 VDC

24 VDC
V_S -30 ... +30 %
≤ 40 mA

Measuring procedure

Arithmetic mean value
True RMS measurement (TRMS) *

Response time
Max. response time
Min. measuring span
Transmission error

1.5 ms + signal cycle duration
60 ms
2 m ... 1 A; 4 m ... 5 A
≤ 0.1 % typ. (≤ 0.4 % max.)

Temperature coefficient
Linearity error

≤ 0.01% /K
< 0.5 % (of measuring range nominal value)

Conformity marking

CE

Environmental Requirements

Ambient operating temperature
Storage temperature

-25 °C ... +70 °C (at nominal current)
-40 ... +85 °C

Safety and Protection

Test voltage
(input/output/supply)

2.5 kV (AC), 50 Hz, 1 min.

Connection and Mounting Type

Connection technology
Conductor range

Push-in CAGE CLAMP®

solid
fine-stranded

0.08 ... 2.5 mm² / 28 ... 14 AWG
0.34 ... 2.5 mm² / 22 ... 14 AWG

Strip length

9 ... 10 mm / 0.35 ... 0.39 in.

Dimensions and Weight

Dimensions (mm) W x H x D

6 x 97.8 x 94, Height from upper-edge of DIN-35 rail

Weight

50 g

For additional approvals, see page 180

(*Other setting options via the interface configuration software or the interface configuration app)

857-550

DIP Switch Adjustability

● = ON

DIP Switch S1

Input Signal		Measuring Method		Filter		Output Signal			
1		2		3		4	5	6	
	5 A		Mean square value		off				0 ... 20 mA
●	1 A	●	Arithmetic mean value	●	active		●		4 ... 20 mA
						●			0 ... 10 V
						●	●		2 ... 10 V
								●	0 ... 10 mA
							●	●	2 ... 10 mA
						●		●	0 ... 5 V
						●	●	●	1 ... 5 V

Filter

The filter function allows a low-pass filter to be switched on in order to mask or "smooth out" oscillating measured values (e.g., during trailing edge flows).

DIP Switch S1

		Measuring Range Underflow		Measuring Range Overflow		Overcurrent (Input Signal - End Value + 20%)		Digit Output DO Signaling	
7	8							9	10
		Lower limit of measuring range -5 %		Upper limit of measuring range +2.5 %		Upper limit of measuring range +5 %			
●		Lower limit of measuring range		Upper limit of measuring range +2.5 %		Upper limit of measuring range +5 %		●	●
	●	Lower limit of measuring range		Upper limit of measuring range		Lower limit of measuring range		●	●
●	●	Lower limit of measuring range		Upper limit of measuring range		Upper limit of measuring range			

*acc. to NAMUR NE 43

Digital Output DO/Signaling

The digital output (DO) signals error messages and can be configured as follows: 24 V → 0 V/0 V → 24 V.

In order to increase the switching current of the DO, the latter may be expanded by a relay. Thanks to the contour uniformity of Series 857, for example, a 857-304 Relay can be snapped in next to it. This output can be quickly and easily expanded to a switching current of 6A by simply using an adjacent jumper (859-402).

Default Setting

All DIP switches are in "OFF" position for delivery.	
Input	
Input Signal	0 ... 5 A
Measuring Method	Mean square value
Filter	not active
Output	
Output Signal	0 ... 20 mA
Measuring Range Underflow	0 mA
Measuring Range Overflow	20.5 mA
Overcurrent	21 mA
Digital Output DO	not active

JUMPFLEX® Signal Conditioners

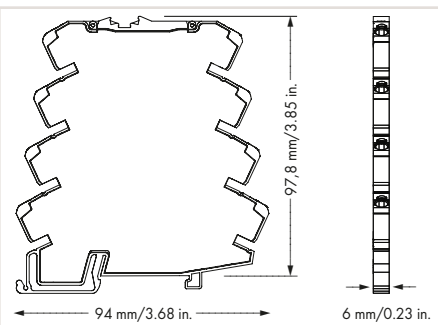
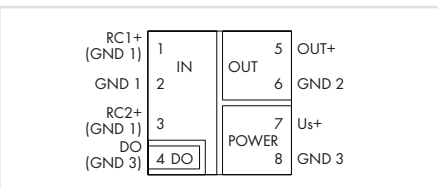
Rogowski Signal Conditioner

857 Series



JUMPFLEX® Current Signal Conditioner, input for Rogowski coil, current and voltage output signal, digital output, configuration via software, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-552	1



Short description:

The 857-552 Rogowski Signal Conditioner records RMS values from alternating currents via a Rogowski coil, converting the input signal into an analog standard signal on the output side.

Features:

- PC configuration interface
- Supports different Rogowski coil types
- Digital switching output (configurable switching thresholds)
- True RMS measurement (TRMS)
- Configurable output signal
- Configuration via DIP switches
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140
- No current bar interruption required during installation
- Measuring range overflow indication

Specialty functions



Configuration via



Accessories,
see page 258

Technical Data

Configuration

Configuration

DIP switch, interface configuration software, interface configuration app

Input

Input signal, current

50 Hz sinusoidal signals
RC1 Sensitivity 10.05 mV
RC2A Sensitivity 40.2 mV
RC2B Sensitivity 22.5 mV/kA

Measuring range

RC1 ≤ 500 A
RC2A ≤ 2000 A
RC2B ≤ 4000 A

Frequency range

16 ... 1000 Hz

Response threshold

< 1 % (of measuring range nominal value)

Output

Output signal

Current

0 ... 10 mA, 2 ... 10 mA,
0 ... 20 mA, 4 ... 20 mA *

Voltage

0 ... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V *

Load Impedance

Current ≤ 600 Ω, Voltage ≥ 1000 Ω

Overcurrent

0 % or +5 % (e.g. 10.5 V/21 mA) *

Measuring range overflow/underflow

0 % or +2.5 % *

Filter (T₁₀₋₉₀)

600 ms (50 Hz)

Output – Digital

Max. switching voltage

Supply voltage applied

Max. Continuous Current

100 mA

General Specifications

Nominal supply voltage V_s

24 VDC

Supply voltage range

V_s -30 ... +30 %

Current consumption at 24 VDC

≤ 40 mA

Resolution

RC1 250 mA
RC2A 1000 mA
RC2B 1500 mA

Measuring procedure

True RMS measurement (TRMS)

Response time

1.5 ms + signal cycle duration

Max. operating frequency

< 2 kHz

Response time (T₁₀₋₉₀)

max. 60 ms

Linearity error

≤ 0.1 %

Temperature coefficient

≤ 0.01% / K

Measurement error

< 1 %

Conformity marking

CE

Environmental Requirements

Ambient operating temperature

-25 ... +70 °C

Storage temperature

-40 ... +85 °C

Safety and Protection

Test voltage

2.5 kV (AC), 50 Hz, 1 min.

(input/output/supply)

Connection and Mounting Type

Connection technology

Push-in CAGE CLAMP®

Conductor range

0.08 ... 2.5 mm² / 28 ... 14 AWG

solid

0.34 ... 2.5 mm² / 22 ... 14 AWG

fine-stranded

Strip length

9 ... 10 mm / 0.35 ... 0.39 in.

Dimensions and Weight

Dimensions (mm) W x H x D

6 x 97.8 x 94, Height from upper-edge of DIN-35 rail

Weight

36.2 g

For additional approvals, see page 180

(* Other setting options via the interface configuration software or the interface configuration app)

857-552

DIP Switch Adjustability

● = ON

DIP Switch S1

Input Signal		RC Configuration Input		Filter		Output Signal			
1		2		3		4	5	6	
	RC1 = RT500 from LEM		RC2A = RT2000 from LEM		off				0 ... 20 mA
●	RC2	●	RC2B = 22.5 mV/kA	●	active		●		4 ... 20 mA
						●			0 ... 10 V
						●	●		2 ... 10 V
								●	0 ... 10 mA
							●	●	2 ... 10 mA
						●		●	0 ... 5 V
						●	●	●	1 ... 5 V

Filter

The filter function allows a low-pass filter to be switched on in order to mask or "smooth out" oscillating measured values (e.g., during trailing edge flows).

DIP Switch S1

7	8	Measuring Range Underflow	Measuring Range Overflow	Overcurrent (Input Signal - End Value + 20%)	Digital Output DO Signaling	
					9	10
		Lower limit of measuring range +5%*	Upper limit of measuring range +2.5%*	Upper limit of measuring range +5 %*		DO not active
●		Lower limit of measuring range	Upper limit of measuring range +2.5 %	Upper limit of measuring range +5 %	●	DO U _S + switching
	●	Lower limit of measuring range	Upper limit of measuring range	Lower limit of measuring range	●	DO GND switching
●	●	Lower limit of measuring range	Upper limit of measuring range	Upper limit of measuring range		

*acc. to NAMUR NE 43

Digital Output DO/Signaling

The digital output (DO) signals error messages and can be configured as follows: 24 V → 0 V/0 V → 24 V.

In order to increase the switching current of the DO, the latter may be expanded by a relay. Thanks to the contour uniformity of Series 857, for example, a 857-304 Relay can be snapped in next to it. This output can be quickly and easily expanded to a switching current of 6A by simply using an adjacent jumper (859-402).

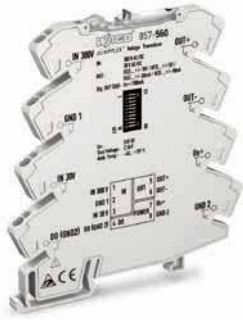
Default Setting

All DIP switches are in "OFF" position for delivery.	
Input	
Input Signal	RC1 500 A
Measuring Method	Mean square value
Filter	not active
Output	
Output Signal	0 ... 20 mA
Measuring Range Underflow	0 mA
Measuring Range Overflow	20.5 mA
Overcurrent	21 mA
Digital Output DO	not active

JUMPFLEX® Signal Conditioners

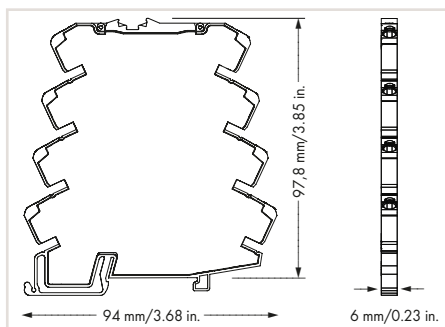
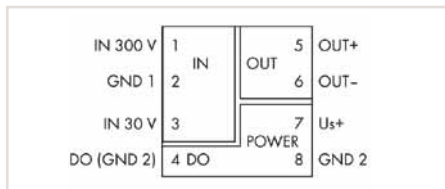
Voltage Signal Conditioner

857 Series



JUMPFLEX® Voltage Signal Conditioner, input signal for AC and DC voltages, current and voltage output signal, digital output, configuration via software, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-560	1



Short description:

The 857-560 Voltage Signal Conditioner measures AC and DC voltages up to 300 V AC/DC and converts the input signal into an analog standard signal at the output.

Features:

- Two isolated measurement inputs for 30 V and 300 V AC/DC
- RMS measurement or arithmetic mean value
- A digital signal output reacts to configured measurement range limits (switching ON/OFF delay and threshold value switch function configurable with up to two threshold values)
- Switchable filter function
- Safe 3-way isolation with 3 kV test voltage per EN 61010-1

Specialty functions



Configuration via



Accessories,
see page 258

Technical Data

Configuration

Configuration

DIP switch, interface configuration software, interface configuration app

Input

Input signal
Response threshold
Input resistance
Frequency range
Overload capacity
Resolution

300 VAC/DC or 30 VAC/DC
IN 1: 300 mV, IN 2: 30 mV
> 300 kΩ
10 ... 100 Hz AC
IN 1: 600 V; IN 2: 60 V (permanent)
IN 1: 30 mV, IN 2: 3 mV

Output

Output signal

(+/-)0 ... 20 mA, 4 ... 20 mA,
(+/-)0 ... 10 mA, 2 ... 10 mA
(+/-)0 ... 10 V, 2 ... 10 V,
(+/-)0 ... 5 V, 1 ... 5 V

Load Impedance

≤ 600 Ω (I output);
≥ 1 kΩ (U output)

Output – Digital

Max. switching voltage
Max. Continuous Current

Supply voltage applied
100 mA

General Specifications

Nominal supply voltage V_s
Supply voltage range
Current consumption at 24 VDC
Measuring procedure
Max. operating frequency
Response time typ. signal cycle duration
Response time (T_{10-90})
Temperature coefficient
Linearity error
Measurement error
Conformity marking
Standards/Approvals

24 VDC
 V_s -30 ... +30 %
46 mA + I_{DO}
Effective value (RMS) or arithmetic mean value
2 kHz
+ 1 ms
60 ms
≤ 0.01% / K
≤ 0.1 %
< 0.5 %
CE
EN 61010-1, EN 61326-1

Environmental Requirements

Ambient operating temperature
Storage temperature

-40 ... +70 °C
-40 ... +85 °C

Safety and Protection

Test voltage
input/output/supply
Protection type

3 kV (AC), 50 Hz, 1 min.
IP20

Connection and Mounting Type

Connection technology
Conductor range
solid
fine-stranded
Strip length

Push-in CAGE CLAMP®
0.08 ... 2.5 mm² / 28 ... 14 AWG
0.34 ... 2.5 mm² / 22 ... 14 AWG
9 ... 10 mm / 0.35 ... 0.39 in.

Dimensions and Weight

Dimensions (mm) W x H x D

6 x 97.8 x 94, Height from upper-edge of DIN-35 rail

Weight

55 g

857-560

DIP Switch Adjustability

● = ON

DIP Switch S1

1	2	Input	3	Measuring Method	4	Filter
		300 V		RMS		Off
	●	150 V	●	Arithmetic mean value	●	Active
●		30 V				
●	●	15 V				

DIP Switch S1

5	6	7	Output Signal Range
			(+/-) 0 ... 20 mA
	●		4 ... 20 mA
●			(+/-) 0 ... 10 V
●	●		2 ... 10 V
		●	(+/-) 0 ... 10 mA
	●	●	2 ... 10 mA
●		●	(+/-) 0 ... 5 V
●	●	●	1 ... 5 V

DIP Switch S1

8	9	Measuring Range Underflow	Measuring Range Overflow	10	Digit Output DO/Signaling
		Lower limit of measuring range -5 %*	Upper limit of measuring range +2.5 %*		DO V _S + switching
●		Lower limit of measuring range	Upper limit of measuring range +2.5 %	●	DO GND switching
	●	Lower limit of measuring range	Upper limit of measuring range		
●	●	Lower limit of measuring range	Upper limit of measuring range		

*per NAMUR NE 43

Filter

The filter function allows a low-pass filter to be switched on in order to mask or "smooth out" oscillating measured values (e.g., during trailing edge flows).

Digital Output DO/Signaling

The digital output (DO) signals error messages and can be configured as follows:
24 V → 0 V/0 V → 24 V.

Default Setting

All DIP switches are in "OFF" position for delivery.	
Input	
Input	300 V
Measuring Method	RMS
Filter	Off
Output	
Output Signal	0 ... 20 mA
Measuring Range Underflow	0 mA
Measuring Range Overflow	20.5 mA
Overcurrent	21 mA
Digital Output DO	V _S + switching

JUMPFLEX® Signal Conditioners

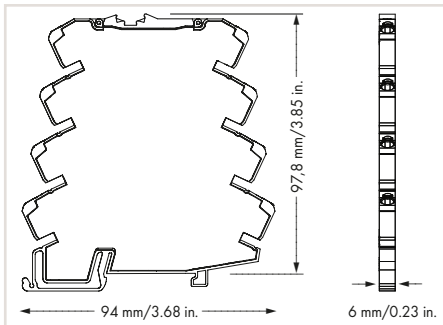
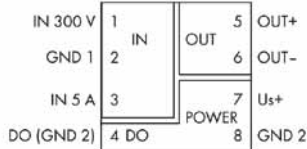
Power Signal Conditioner

857 Series



JUMPFLEX® Power Signal conditioner, current and voltage input signal, current and voltage output signal, digital output, configuration via software/DIP switch, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-569	1



Short description:

The 857-569 Power Signal Conditioner measures AC and DC voltages as well as AC and DC currents and converts the input signal into an analog standard signal at the output. Measured value processing can be switched between RMS value or arithmetic mean value and between effective, apparent or reactive power, and phase angle.

Features:

- 2 separate measuring inputs for AC and DC voltages as well as AC and DC currents
- RMS measurement or arithmetic mean value
- A digital signal output reacts to configured measuring range limits (switching ON/OFF delay and threshold value switch function configurable with up to two threshold values)
- Switchable filter function
- Safe 3-way isolation with 3 kV test voltage per EN 61010-1

Specialty functions



Configuration via



Accessories,
see page 258

Technical Data

Configuration

Configuration

DIP switch, interface configuration software, interface configuration app

Input

Input signal

IN 1: 300 V AC/DC; IN 2: 5 A AC/DC

Response threshold

IN 1: 300 mV
IN 2: 10 mA

Resolution

IN 1: 30 mV
IN 2: 1 mA

Input resistance

≤ 10 mΩ (I input);
> 300 kΩ (U input)

Frequency range

15 ... 100 Hz AC

Overload capacity

10 A AC/DC (permanent)

Output

Output signal

0 ... 10 mA, 2 ... 10 mA,
0 ... 20 mA, 4 ... 20 mA,
0 ... 5 V, 1 ... 5 V
0 ... 10 V, 2 ... 10 V
(can be inverted, also bipolar)

Load Impedance

≤ 600 Ω (I output);
≥ 1 kΩ (U output)

Output – Digital

Max. switching voltage

Supply voltage applied

Max. Continuous Current

100 mA

General Specifications

Nominal supply voltage V_s

24 VDC

Supply voltage range

$V_s - 30 \dots +30 \%$

Current consumption at 24 VDC

≤ 46 mA

Measuring procedure

Effective value (RMS) or arithmetic mean value

Measured variables:

Effective power, apparent power, reactive power, power factor

Max. operating frequency

2 kHz

Response time typ. signal cycle duration

+ 1 ms

Response time (T_{10-90})

100 ms

Temperature coefficient

≤ 0.01% / K

Linearity error

≤ 0.1 %

Measurement error
(of the full scale value)

Voltage: < 0.5%
Current: < 0.5%
Phase angle: < 0.5%

Conformity marking

CE

Standards/Approvals

EN 61010-1, EN 61326-1

Environmental Requirements

Ambient operating temperature

-40 ... +70 °C

Storage temperature

-40 ... +85 °C

Safety and Protection

Test voltage

3 kV (AC), 50 Hz, 1 min.

Protection type

IP20

Connection and Mounting Type

Connection technology

Push-in CAGE CLAMP®

Conductor range

0.08 ... 2.5 mm² / 28 ... 14 AWG

solid

0.34 ... 2.5 mm² / 22 ... 14 AWG

fine-stranded

Strip length

9 ... 10 mm / 0.35 ... 0.39 in.

Dimensions and Weight

Dimensions (mm) W x H x D

6 x 97.8 x 94, Height from upper-edge of DIN-35 rail

Weight

55 g

857-569 DIP Switch Adjustability

● = ON

DIP Switch S1

1	2	Input	3	4	Filter
		Active Power			Off
	●	Apparent Power	●	●	Active
●		Reactive Power			
●	●	Power factor			

DIP Switch S1

5	6	7	Output Signal Range
			0 ... 20 mA
	●		4 ... 20 mA
●			0 ... 10 V
●	●		2 ... 10 V
		●	0 ... 10 mA
	●	●	2 ... 10 mA
●		●	0 ... 5 V
●	●	●	1 ... 5 V

DIP Switch S1

8	9	Measuring Range Underflow	Measuring Range Overflow	10	Digit Output DO/ Signaling
		Lower limit of measuring range -5 %	Upper limit of measuring range +2.5 %		DO V _S + switching
●		Lower limit of measuring range	Upper limit of measuring range +2.5 %	●	DO GND switching
	●	Lower limit of measuring range	Upper limit of measuring range		
●	●	Lower limit of measuring range	Upper limit of measuring range		

Filter

The filter function allows a low-pass filter to be switched on in order to mask or "smooth out" oscillating measured values (e.g., during trailing edge flows).

Digital Output DO/Signaling

The digital output (DO) signals error messages and can be configured as follows:
24 V → 0 V / 0 V → 24 V.

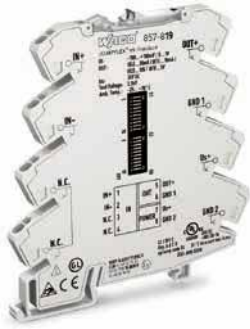
Default Setting ¹per NAMUR NE 43

All DIP switches are in "OFF" position for delivery.	
Input	
Input	Power
Measuring Method	Active power
Filter	Off
Output	
Output	Current
Output Signal Range	0 ... 20 mA
Measuring Range Underflow	0 mA
Measuring Range Overflow	20.5 mA
Overcurrent	21 mA
Digital Output DO	V _S + switching

JUMPFLEX® Signal Conditioners

Millivolt Signal Conditioner from -100 ... +100 mV und 0 ... 1000 mV

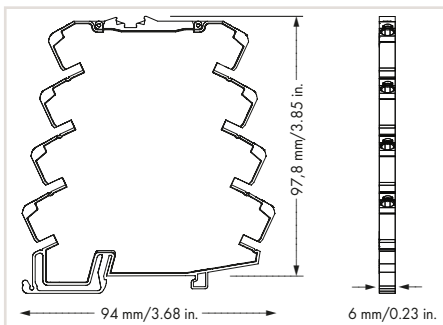
857 Series



JUMPFLEX® Voltage Signal Conditioner, bipolar voltage input signal, current and voltage output signal, configuration via software, supply voltage: 24 VDC, 6 mm wide

Item No.	Pack. Unit
857-819	1

IN+	1	IN	5	OUT+	
IN-	2	mV	U, I	6	GND 1
N.C.	3		7	U _s +	
N.C.	4		POWER	8	GND 2



Short description:

The 857-819 Millivolt Signal Conditioner converts input millivolt signals into an analog standard signal on the output side.

Features:

- PC configuration interface
- Switching between measurement ranges is calibrated
- Clipping capability allows analog signal limitation to output end values.
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Specialty functions



Configuration via



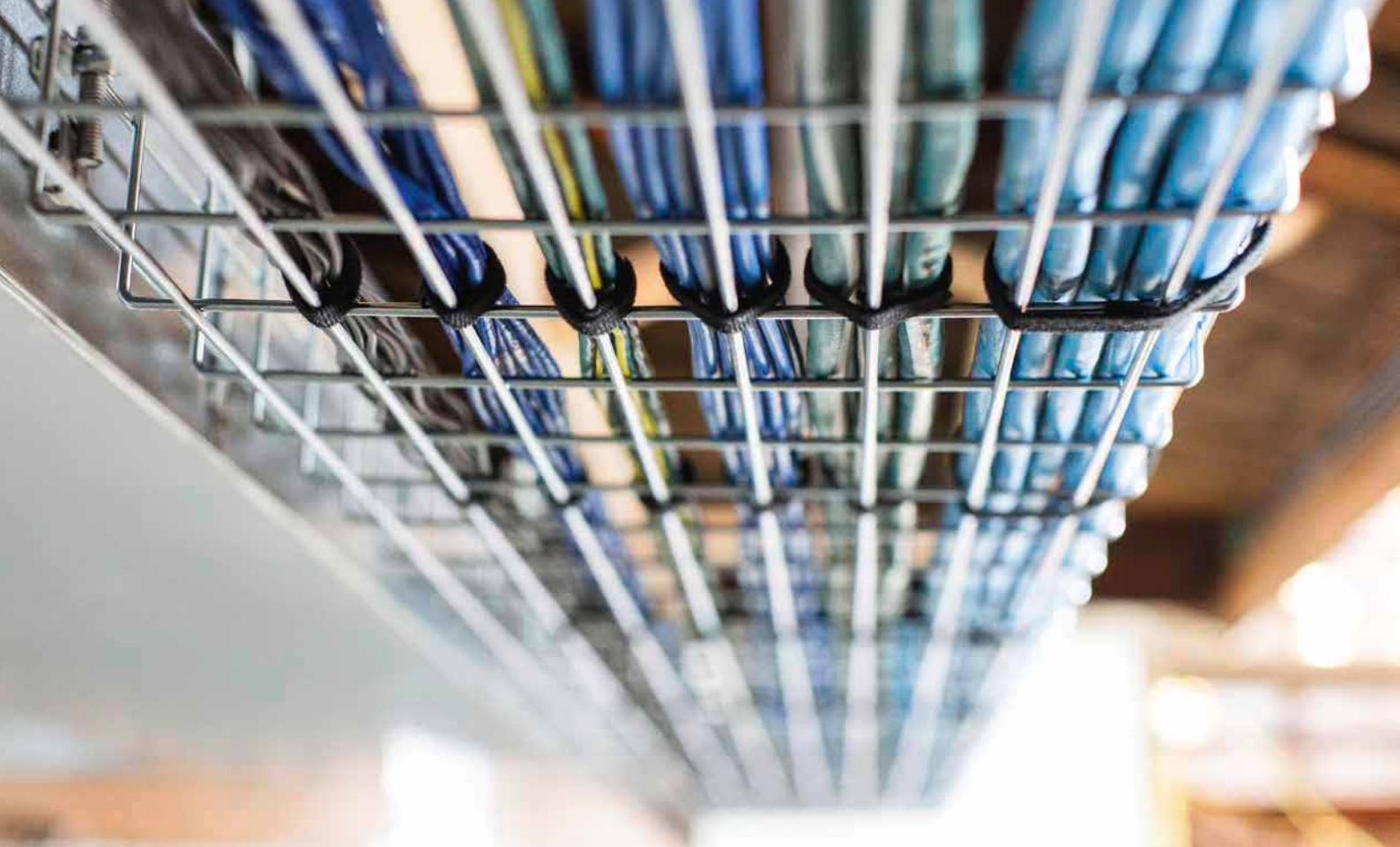
Accessories,
see page 258

Technical Data

Configuration	
Configuration	DIP switch, interface configuration software, interface configuration app
Input	
Input signal	-100 ... +100 mV, 0 ... 200 mV, 0 ... 1000 mV * (in 100 mV increments)
Input resistance	> 1 MΩ
Max. input signal	31.2 V
Output	
Output signal	0 ... 10 mA, 2 ... 10 mA, 0 ... 20 mA, 4 ... 20 mA, 0 ... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V *
Load Impedance	≤ 600 Ω (I output) ≥ 2 kΩ (U output)
Step response	50 ms
General Specifications	
Nominal supply voltage V _S	24 VDC
Supply voltage range	V _S -30 ... +30 %
Current consumption at 24 VDC	≤ 40 mA
Min. measuring span	10 mV
Transmission error	≤ 0.1% at full measuring span
Temperature coefficient	≤ 0.01% /K
Conformity marking	CE
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-40 ... +85 °C
Safety and Protection	
Test voltage (input/output/supply)	2.5 kV (AC), 50 Hz, 1 min.
Connection and Mounting Type	
Connection technology	Push-in CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG 0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 in.
Dimensions and Weight	
Dimensions (mm) W x H x D	6 x 97.8 x 94, Height from upper-edge of DIN-35 rail
Weight	50 g

For additional approvals, see page 180

(*Other setting options via the interface configuration software or the interface configuration app)



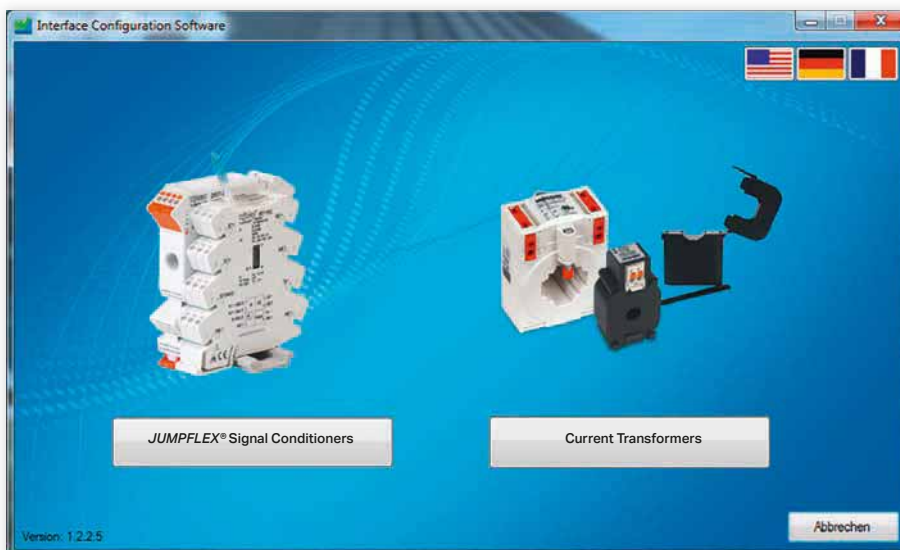
iStock.com/AvatarKnowmad

CALCULATING CONDUCTOR LENGTH FOR CURRENT TRANSFORMERS

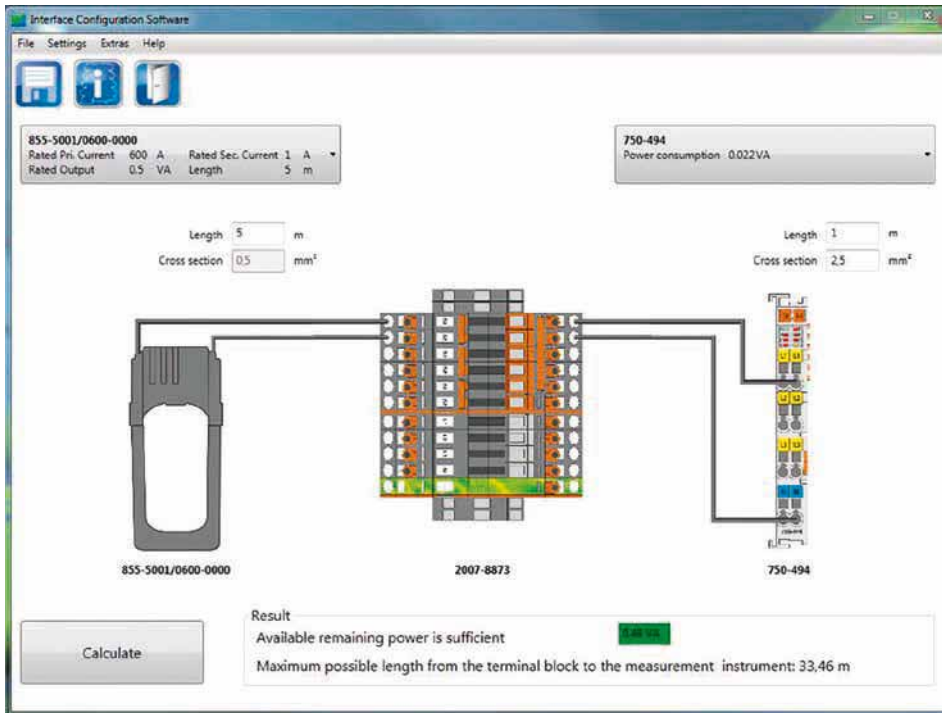
WAGO has expanded its configuration tool interface to include a conductor length calculator. Calculating conductor length is quick and easy, with the information being provided for system documentation. All current transformers and power measurement modules can be selected via convenient drop-down menu.

Power Requirements for a Current Transformer

To determine actual power requirements, both the power requirements of the connected measurement devices and the power losses from the measurement conductors connected to the transformer's secondary circuit must be taken into account.



WAGO Interface configuration software



Conductor length calculation using the interface configuration software.

Configuration report	
Project	WAGO
Project number	1582.23.58877
Company	Wago Kontakttechnik GmbH & Co. KG
Author	Michael Meyer
Date	21.08.2015
Stamp	
Transducer	
Item number	855-3001/0060-0003
Rated Pri. Current	60A
Rated Sec. Current	1A
Rated Output	0.221VA
Measurement instrument	
Item number	750-494
Power consumption	0.022VA
Cable from transducer to terminal block	
Length	3m
Cross section	0.5mm ²
Power loss	0.021VA
Cable from terminal block to measurement instrument	
Length	1m
Cross section	1mm ²
Power loss	0.036VA
Result	
Available power	0.221VA
Total power loss	0.057VA
Remaining power	0.164VA
Required power	0.022VA
Result	Available remaining power is sufficient

Easily documented!

4

Power calculation of copper conductors between measurement device and current transformer:

$$P_V = \frac{I_s^2 \times 2 \times l}{A_{Cu} \times 56} \text{ VA}$$

- I_s = Secondary rated measuring current strength [A]
- l = Simple cable length in m
- A_{Cu} = Conductor cross-section in mm²
- P_V = Power loss of the connecting cables

Note: If using a common three-phase current return cable, half values apply for P_V !

Current transformer 1 A

$$P_V = \frac{1^2 \times 2 \times 10}{1.5 \times 56} \text{ VA} = 0.24 \text{ VA}$$

Current transformer 5 A

$$P_V = \frac{5^2 \times 2 \times 10}{1.5 \times 56} = 5.96 \text{ VA}$$

Example:











A 1 A or 5 A current transformer is used with an ammeter on the secondary side, with a distance of 10 m between current transformer and measuring device.

Free software download: www.wago.com



EPSTRON® Power Supply System

EPSITRON® Power Supply System

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EPSITRON® Power Supplies Selection Guide

Switched-Mode Power Supplies, 24 VDC Output

Nominal output current [ADC]	Input 1-phase	Input 2-/3-phase	Approvals						DC OK signal/contact	RS-232 serial interface	TopBoost*	PowerBoost	Efficiency, typ. [%]	Ambient operating temperature [°C]****	Item Number	Page
			EN 60335	cURus 60950	cULus 508	GL	ANSI/ISA 12.12.1	ATEX/IEC Ex								
1.0	■		■	■	■	■						86.0	-25 ... +70	787-1602**	331	
1.25	■		■	■	■	■						80.0	-20 ... +60	787-1702	351	
1.3	■		■	■	■	■						82.0	-25 ... +60	787-1002	369	
1.3	■		■	■	■	□						82.0	-25 ... +60	787-1102	359	
1.3	■		■	■	■	■						87.0	-25 ... +70	787-1202	363	
2.0	■		■	■	■	■						89.0	-25 ... +70	787-1606**	331	
2.5	■		■	■	■	■						86.0	-10 ... +70	787-712	347	
2.5	■		■	■	■	■						81.0	-20 ... +60	787-1712	351	
2.5	■		■	■	■	■						88.0	-25 ... +60	787-1012	370	
2.5	■		■	■	■	□						88.0	-25 ... +60	787-1112	359	
2.5	■		■	■	■	■						89.0	-25 ... +70	787-1212	363	
3.0	■		■	■	■	■				■	■	87.8	-25 ... +70	787-818	316	
3.8	■		■	■	■	■						87.0	-25 ... +70	787-1616/0000-1000**	332	
4.0	■		■	■	■	■						89.0	-25 ... +70	787-1616	332	
4.0	■		■	■	■	■						88.0	-25 ... +60	787-1022	370	
4.0	■		■	■	■	□						88.0	-25 ... +60	787-1122	360	
4.2	■		■	■	■	□						90.0	-25 ... +70	787-1216	364	
5.0	■		■	■	■	■				■	■	87.8	-25 ... +70	787-822	317	
5.0	■		■	■	■	■						89.0	-25 ... +70	787-1622	333	
5.0	■	■	■	■	■	■				■	■	89.0	-25 ... +70	787-1628	341	
5.0	■		■	■	■	■						89.0	-25 ... +70	787-1675***	372	
5.0	■		■	■	■	■						86.0	-10 ... +60	787-722	347	
5.0	■		■	■	■	■						84.0	-20 ... +60	787-1722	352	
6.0	■		■	■	■	□						90.0	-25 ... +70	787-1226	364	
6.25	■	■	■	■	■	□						87.0	-25 ... +70	787-738	355	
10.0	■		■	■	■	■				■	■	90.0	-25 ... +70	787-832	317	
10.0	■		■	■	■	■						91.0	-25 ... +70	787-1632	333	
10.0	■		■	■	■	■						86.0	-10 ... +70	787-732	348	
10.0	■		■	■	■	■						84.0	-20 ... +60	787-1732	352	
10.0	■	■	■	■	■	■				■	■	91.7	-25 ... +70	787-850	322	
10.0	■		■	■	■	■						91.7	-25 ... +70	787-840	321	
10.0	■		■	■	■	□						90.0	-25 ... +70	787-1640	343	
10.0	■		■	■	■	□						89.0	-25 ... +70	787-740	355	
20.0	■		■	■	■	■				■	■	91.0	-25 ... +70	787-834	318	
20.0	■		■	■	■	■						92.0	-25 ... +70	787-1634	334	
20.0	■		■	■	■	■						90.0	-25 ... +70	787-734	348	
20.0	■		■	■	■	■				■	■	92.9	-25 ... +70	787-852	323	
20.0	■		■	■	■	■						92.9	-25 ... +70	787-842	321	
20.0	■		■	■	■	□						92.0	-25 ... +70	787-1642	343	
20.0	■		■	■	■	□						90.0	-25 ... +70	787-742	356	
40.0	■		■	■	■	■						90.0	-25 ... +70	787-736	349	
40.0	■	■	■	■	■	■				■	■	93.6	-25 ... +55	787-854	323	
40.0	■		■	■	■	■						93.6	-25 ... +55	787-844	322	
40.0	■		■	■	■	□						92.0	-25 ... +70	787-1644	344	

5

Switched-Mode Power Supplies. 5, 12, 18, 48 VDC Output

Nominal output current [ADC]	Input, 1-phase	Input, 2-/3-phase	Approvals						DC OK signal/contact	RS-232 serial interface	TopBoost*	PowerBoost	Efficiency, typ. [%]	Ambient operating temperature [°C] ****	Item Number	Page
			EN 60335	cURus 60950	cULus 508	GL	ANSI/ISA 12.12.1	ATEX/IEC Ex								
5.5	■			■	■	□						75.0	-25 ... +60	787-1020	367	
Output: 12 VDC																
2.0	■			■	■	■		■				82.0	-25 ... +70	787-1601**	327	
2.0	■			■	■	■		■				80.0	-25 ... +60	787-1001	367	
4.0	■			■	■	■		■				86.0	-25 ... +70	787-1611**	327	
4.0	■			■	■	■		■				85.0	-25 ... +60	787-1011	368	
6.0	■			■	■	■		■	■	■		83.0	-25 ... +70	787-819	315	
6.5	■			■	■	■		■				87.0	-25 ... +60	787-1021	368	
7.0	■			■	■	■		■				86.0	-25 ... +70	787-1621	328	
10.0	■			■	■	■		■	■	■		87.8	-25 ... +70	787-821	315	
15.0	■			■	■	■		■	■	■		87.0	-25 ... +70	787-831	316	
15.0	■			■	■	■		■	■	■		90.0	-25 ... +70	787-1631	328	
Output: 18 VDC																
2.5	■			■	■	□						83.0	-25 ... +60	787-1017	369	
Output: 48 VDC																
2.0	■			■	■	■		■				86.0	-25 ... +70	787-1623	337	
5.0	■			■	■	■		■	■	■		91.0	-25 ... +70	787-833	318	
5.0	■			■	■	■		■	■	■		92.0	-25 ... +70	787-1633	337	
10.0	■			■	■	■		■	■	■		91.0	-25 ... +70	787-835	319	
10.0	■			■	■	■		■	■	■		93.0	-25 ... +70	787-1635	338	
10.0	■	■		■	■	■		■	■	■		93.0	-25 ... +70	787-845	325	
20.0	■	■		■	■	■		■	■	■		94.4	-25 ... +70	787-847	325	

DC/DC Converters

Nominal input voltage [VDC]	Nominal voltage output [VDC]	Nominal output current [A]	Approvals						DC OK signal/contact	Efficiency, typ. [%]	Ambient operating temperature [°C]	Item Number	Page
			cURus 60950	cULus 508	GL	ANSI/ISA 12.12.1	ATEX/IEC Ex	EN 50155					
24.0	5.0	0.5	□	□	□	□	□	■	82.5	-25 ... +70	787-2801	421	
24.0	10.0	0.5	□	□	□	□	□	■	89.0	-25 ... +70	787-2802	421	
48.0	24.0	0.5	□	□	□	□	□	■	91.0	-25 ... +70	787-2803	422	
24.0	12.0	0.5	□	□	□	□	□	■	90.0	-25 ... +70	787-2805	422	
24.0	5/10/12	0.5	□	□	□	□	□	■	82.5	-25 ... +70	787-2810	423	
110.0	24.0	2.0						■	85.0	-40 ... +70	787-1014	419	
72.0	24.0	2.0						■	86.0	-40 ... +70	787-1014/0072-0000	419	

■ yes □ pending
 * TopBoost enables magnetic tripping of circuit breakers in the output circuit.
 ** Class 2 Power Unit acc. to cURus 1310 or cURus 60950
 *** with uninterruptible power supply (UPS)
 **** Device starts at -40 °C type-tested for 787-8xx, -10xx, -16xx

EPSITRON® System Modules Selection Guide

Uninterruptible Power Supplies (UPS)

Input		Output		Approvals						Dimensions and Environmental Conditions				Item Number	Page
Nominal voltage [VAC]	Nominal voltage [VDC]	Nominal voltage [VDC]	Nominal current [ADC]	EN 60335	cURus 60950	cULus 508	GL	ANSI/ISA 12.12.1	ATEX/IEC Ex	Width [mm]	Height [mm]	Length [mm]	Ambient operating temperature [°C]		
-	24	24	10.0		■	■				40.0	163.0	163.0	-10 ... +60	787-870	375
-	24	24	20.0		■	■				57.0	163.0	171.0	-10 ... +60	787-875	375
100 ... 240	110 ... 370	24	5.0		■	■	■			60.0	135.5	127.0	-25 ... +70	787-1675	372

Battery Modules

Input		Output		Approvals						Dimensions and Environmental Conditions				Item Number	Page	
Nominal voltage [VDC]	Nominal voltage [VDC]	Nominal capacity [Ah]		EN 60335	cURus 60950	cULus 508	GL	ANSI/ISA 12.12.1	ATEX/IEC Ex	Battery tested to VdS	Width [mm]	Height [mm]	Length [mm]	Ambient operating temperature [°C]		
24	24	1.2				■				■	55.0	136.5	153.0	-15 ... +40	787-876	377
24	24	3.2				■				■	76.2	175.5	168.0	-15 ... +40	787-871	377
24	24	7.0				■				■	86.0	217.5	236.0	-15 ... +40	787-872	378
24	24	12.0				■				■	120.5	217.5	236.0	-15 ... +40	787-873	378

Capacitive Buffer Modules

Input/Output. Buffer			Approvals						Dimensions and Environmental Conditions				Item Number	Page
Nominal input/output voltage [VDC]	Nominal output current [ADC]	Buffer time [s]	EN 60335	cURus 60950	cULus 508	GL	ANSI/ISA 12.12.1	ATEX/IEC Ex	Width [mm]	Height [mm]	Length [mm]	Ambient operating temperature [°C]		
24	10.0	0.06 ... 7.2		■	■				57.0	179.0	163.0	-10 ... +50	787-880	381
24	20.0	0.17 ... 16.5		■	■				57.0	179.0	181.0	-10 ... +50	787-881	381

■ yes □ pending
* NEC Class 2

Redundancy Modules

Input		Output		Approvals						Dimensions and Environmental Conditions				Item Number	Page
Nominal voltage [VDC]		Nominal voltage [VDC]	Nominal current [ADC]	EN 60335	cURus 60950	cULus 508	GL	ANSI/ISA 12.12.1	ATEX/IEC Ex	Width [mm]	Height [mm]	Length [mm]	Ambient operating temperature [°C]		
12 ... 48		12 ... 48	12.5		■	■	□	□	□	50.0	92.0	130.0	-25 ... +70	787-783	383
24		24	20.0		■	■	□	□	□	40.0	163.0	181.0	-10 ... +60	787-885	385
12 ... 48		12 ... 48	40.0			■	□	□	□	83.0	153.0	130.0	-25 ... +70	787-785	383
48		48	20.0				□	□	□	40.0	163.0	181.0	-10 ... +60	787-886	385

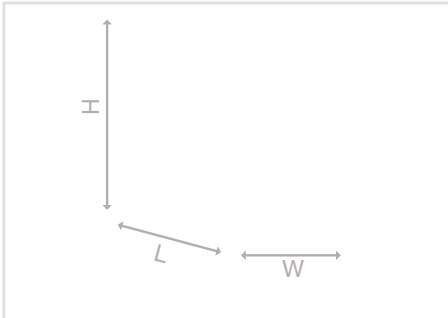
Electronic Circuit Breakers (ECBs)

Input/Output					Approvals						Dimensions and Environmental Conditions				Item Number	Page
Nominal input/output voltage [VDC]	Output Channels	Nominal output current [ADC]	Active current limitation	Potential-free signal contact	EN 60335	UR 2367	cULus 508	GL	ANSI/ISA 12.12.1	ATEX/IEC Ex	Width [mm]	Height [mm]	Length [mm]	Ambient operating temperature [°C]		
24	2	2 ... 10				■	■	■			45	115.5	90	-25 ... +70	787-1662	393
24	2	2 ... 10				■	■	■			45	115.5	90	-25 ... +70	787-1662/000-004	394
24	2	2 ... 10		■		□	□	■			45	115.5	90	-25 ... +70	787-1662/000-054	394
24	2	3.8 LPS	■			■	■	□			45	115.5	90	-25 ... +70	787-1662/004-1000*	389
24	2	0.5 ... 6	■			■	■	■			45	115.5	90	-25 ... +70	787-1662/006-1000	389
24	2	1 ... 6				■	■	■			45	115.5	90	-25 ... +70	787-1662/106-000	393
24	2	2 ... 12	■			■	■	□			45	115.5	90	-25 ... +70	787-1662/212-1000	390
24	4	2 ... 10				■	■	■			45	115.5	90	-25 ... +70	787-1664	406
24	4	2 ... 10				■	■	■			45	115.5	90	-25 ... +70	787-1664/000-004	407
24	4	2 ... 10		■		□	□	■			45	115.5	90	-25 ... +70	787-1664/000-054	407
24	4	3.8 LPS	■			■	■	□			45	115.5	90	-25 ... +70	787-1664/004-1000*	402
24	4	0.5 ... 6	■			■	■	■			45	115.5	90	-25 ... +70	787-1664/006-1000	401
24	4	1 ... 6				■	■	■			45	115.5	90	-25 ... +70	787-1664/106-000	406
24	4	2 ... 12	■			■	■	□			45	115.5	90	-25 ... +70	787-1664/212-1000	402
24	4	0.5 ... 6	■	■		■	■	□			45	115.5	90	-25 ... +70	787-1664/006-1054	403
24	4	1 ... 6				■	■	■			40	163	171	-10 ... +60	787-860	405
24	4	1 ... 8	■			■	■	■			40	163	171	-10 ... +60	787-861	401
24	4	1 ... 10				■	■	■			40	163	171	-10 ... +60	787-862	405
24	8	2 ... 10				■	■	■			42	142.5	127	-25 ... +70	787-1668	413
24	8	2 ... 10				■	■	■			42	142.5	127	-25 ... +70	787-1668/000-004	414
24	8	2 ... 10		■		□	□	■			42	142.5	127	-25 ... +70	787-1668/000-054	414
24	8	0.5 ... 6	■			■	■	■			42	142.5	127	-25 ... +70	787-1668/006-1000	411
24	8	1 ... 6				■	■	■			42	142.5	127	-25 ... +70	787-1668/106-000	413
24	8	0.5 ... 6	■	■		■	■	□			42	142.5	127	-25 ... +70	787-1668/006-1054	411
12	2	2 ... 10				□	□	■			45	115.5	90	-25 ... +70	787-1662/000-100	387
12	4	2 ... 10				□	□	■			45	115.5	90	-25 ... +70	787-1664/000-100	398
48	2	2 ... 10				□	□	□			45	115.5	90	-25 ... +70	787-1662/000-200	397
48	2	2 ... 10		■		□	□	□			45	115.5	90	-25 ... +70	787-1662/000-250	397
48	4	2 ... 10				□	□	□			45	115.5	90	-25 ... +70	787-1664/000-200	409
48	4	2 ... 10		■		□	□	□			45	115.5	90	-25 ... +70	787-1664/000-250	409
48	8	2 ... 10				□	□	□			42	142.5	127	-25 ... +70	787-1668/000-200	417
48	8	2 ... 10		■		□	□	□			42	142.5	127	-25 ... +70	787-1668/000-250	417

Switched-Mode Power Supply, 1-Phase

EPSITRON® PRO Power

787 Series

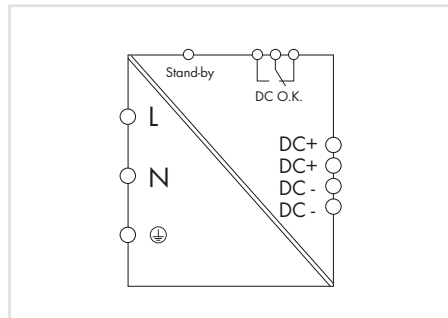
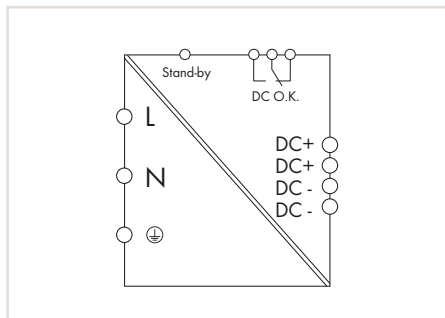


Features:

- Switched-Mode Power Supply unit with PowerBoost and TopBoost
- Stand-by input for switching off the output and minimizing power consumption
- DC OK contact for output monitoring
- Suitable for both parallel and series operation
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Electrically isolated output voltage (SELV) acc. to EN 60950-1/UL 60950-1; PELV acc. to EN 60204

Technical Data

Input	
Input voltage range	85 ... 264 VAC, 120 ... 373 VDC
Frequency	50 ... 60 Hz
Discharge current	1 mA (typ.)
Output	
Adjustment accuracy	1 %
Residual ripple	< 70 mV (peak-to-peak)
Current limitation	1.1 x I _o typ.
Operational indication	LED green (DC OK), LED red (error)
Signaling	Relay contact DC OK (changeover contact)
General Specifications	
Standards/Approvals	EN 60950, EN 61204-3, UL 60950, UL 508
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C Device start at -40 °C type-tested
Storage temperature	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Derating	-3 % / K (> +50 °C)
Degree of pollution	2 (acc. to EN 50178)
Climatic category	3K3 (acc. to EN 60721)
Safety and Protection	
Test voltage Pri.-Sec./Pri.-GND/Sec.-GND	4.2 kV DC / 2.2 kV DC / 0.7 kV DC
Protection class	I
Degree of protection	IP20 per EN 60529
Overvoltage category	II
Overvoltage protection	Via varistor at primary circuit
Short-circuit-protection	Yes
No-load proof	Yes
Parallel operation	Yes
Series connection	Yes
MTBF	> 500,000 h (acc. to IEC 61709)
Connection and Type of Mounting	
Type of mounting	DIN-rail-mounting (EN 60715) in 2 positions



EPSITRON® Switched-Mode Power Supply, PRO Power, 1-phase, output: 12 VDC / 6 A, TopBoost + PowerBoost, DC OK contact

Item No.	Pack. Unit
787-819	1

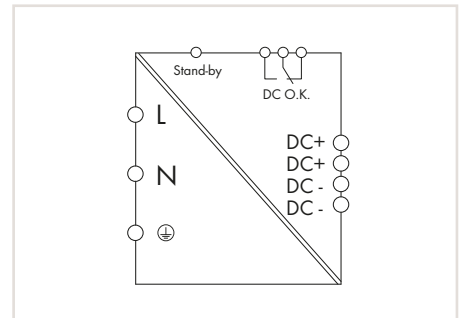
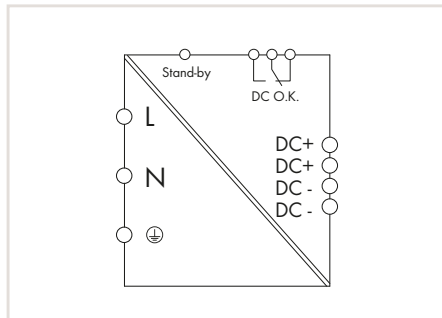
EPSITRON® Switched-Mode Power Supply, PRO Power, 1-phase, output: 12 VDC / 10 A, TopBoost + PowerBoost, DC OK contact

Item No.	Pack. Unit
787-821	1

Electrical Data

Nominal input voltage $U_{I,nom}$	100 ... 240 VAC	100 ... 240 VAC
Input voltage derating	-5 % / VAC < 95 VAC	-5 % / VAC < 95 VAC
Input current I_i	0.51 A at 240 VAC and 6 ADC	0.97 A at 240 VAC and 10 ADC
Inrush current	< 30 A (peak)	< 30 A (peak)
Mains failure hold-up time	70 ms typ. at 230 VAC	35 ms typ. at 230 VAC
Nominal output voltage $U_{O,nom}$	12 VDC (SELV)	12 VDC (SELV)
Output voltage range	11 ... 18 VDC adjustable	11 ... 18 VDC adjustable
Factory preset	12 VDC	12 VDC
Output current I_o	6 A at 12 VDC	10 A at 12 VDC
Overload behavior	TopBoost / PowerBoost / Constant current	TopBoost / PowerBoost / Constant current
PowerBoost	12 ADC (for 4 s), 9 ADC (for 8 s)	20 ADC (for 4 s), 15 ADC (for 8 s)
TopBoost	21 ADC (for 25 ms)	60 ADC (for 25 s), 40 ADC $U_{IN} < 110$ VAC (for 25 ms)
Efficiency	83 % typ.	87.8 % typ.
Power loss P_v	0.5 W (stand-by) / 3.0 W (no load) / 9.4 W (nominal load)	0.5 W (stand-by) / 5.0 W (no load) / 14.6 W (nominal load)
Internal fuse	T 2 A / 250 V	T 4 A / 250 V
External fuse	Circuit breakers 6 A, 10 A, 16 A, B, or C characteristic; an external DC fuse is required for the DC input voltage	Circuit breakers 6 A, 10 A, 16 A, B, or C characteristic; an external DC fuse is required for the DC input voltage
Feedback voltage	Max. 25 VDC	Max. 25 VDC
Mechanical Data		
Connectors	Input/Output: WAGO 231 Series Signaling: WAGO 733 Series	Input/Output: WAGO 231 Series Signaling: WAGO 733 Series
Conductor range	Input/Output: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Signaling: 0.08 ... 0.5 mm ² / 28 ... 20 AWG	Input/Output: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Signaling: 0.08 ... 0.5 mm ² / 28 ... 20 AWG
Strip length	Input/Output: 8 ... 9 mm / 0.31 ... 0.35 inch Signaling: 5 ... 6 mm / 0.2 ... 0.24 inch	Input/Output: 8 ... 9 mm / 0.31 ... 0.35 inch Signaling: 5 ... 6 mm / 0.2 ... 0.24 inch
Dimensions (mm) W x H x L	40 x 163 x 163 (incl. female connector), Length from upper-edge of DIN-35 rail	57 x 163 x 163 (incl. female connector), Length from upper-edge of DIN-35 rail
Weight	800 g	1295 g

Switched-Mode Power Supply, 1-Phase EPSITRON® PRO Power 787 Series



EPSITRON® Switched-Mode Power Supply,
PRO Power, 1-phase,
output: 12 VDC / 15 A, TopBoost + PowerBoost,
DC OK contact

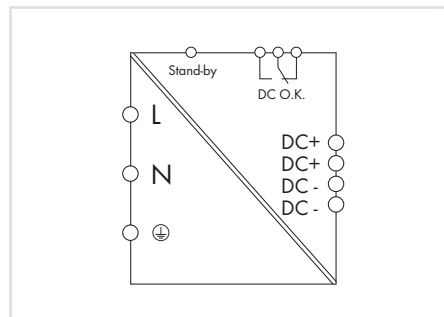
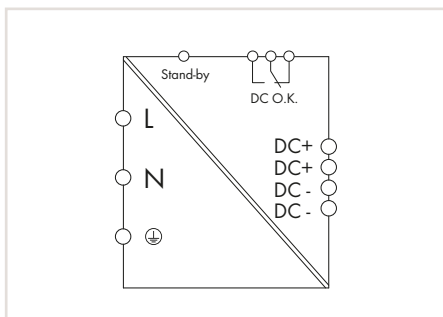
Item No.	Pack. Unit
787-831	1

EPSITRON® Switched-Mode Power Supply,
PRO Power, 1-phase,
output: 24 VDC / 3 A, TopBoost + PowerBoost,
DC OK contact

Item No.	Pack. Unit
787-818	1

Electrical Data

Nominal input voltage $U_{I,nom}$	110 ... 240 VAC	100 ... 240 VAC
Input voltage derating	-1.5 % / VAC < 110 VAC	-5 % / VAC < 95 VAC
Input current I_I	0.9 A at 240 VAC and 15 ADC	0.51 A at 240 VAC and 3 ADC
Inrush current	< 8 A (active inrush current limitation)	< 30 A (peak)
Mains failure hold-up time	30 ms typ. at 230 VAC	70 ms typ. at 230 VAC
Nominal output voltage $U_{O,nom}$	12 VDC (SELV)	24 VDC (SELV)
Output voltage range	11 ... 18 VDC adjustable	22 ... 29.5 VDC adjustable
Factory preset	12 VDC	24 VDC
Output current I_O	15 A at 12 VDC	3 A at 24 VDC
Overload behavior	TopBoost / PowerBoost / Constant current	TopBoost / PowerBoost / Constant current
PowerBoost	30 ADC (for 4 s), 22.5 ADC (for 8 s)	6 ADC (for 4 s), 4.5 ADC (for 8 s)
TopBoost	55 ADC (for 25 ms)	14 ADC (for 25 ms)
Efficiency	87 % typ.	87.8 % typ.
Power loss P_V	0.8 W (stand-by) / 4.6 W (no load) / 23.4 W (rated load)	0.5 W (stand-by) / 3.0 W (no load) / 8.8 W (rated load)
Internal fuse	T 6.3 A / 250 V	T 2 A / 250 V
External fuse	Circuit breakers 6 A, 10 A, 16 A, B or C characteristic; an external DC fuse is required for the DC input voltage.	Circuit breakers 6 A, 10 A, 16 A, B or C characteristic; an external DC fuse is required for the DC input voltage.
Feedback voltage	Max. 25 VDC	Max. 35 VDC
Mechanical Data		
Connectors	Input/Output: WAGO 231 Series Signaling: WAGO 733 Series	Input/Output: WAGO 231 Series Signaling: WAGO 733 Series
Conductor range	Input/Output: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Signaling: 0.08 ... 0.5 mm ² / 28 ... 20 AWG	Input/Output: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Signaling: 0.08 ... 0.5 mm ² / 28 ... 20 AWG
Strip length	Input/Output: 8 ... 9 mm / 0.31 ... 0.35 inch Signaling: 5 ... 6 mm / 0.2 ... 0.24 inch	Input/Output: 8 ... 9 mm / 0.31 ... 0.35 inch
Dimensions (mm) W x H x L	57 x 163 x 179 (incl. female connector), Length from upper-edge of DIN-35 rail	40 x 163 x 163 (incl. female connector), Length from upper-edge of DIN-35 rail
Weight	1480 g	960 g



EPSITRON® Switched-Mode Power Supply,
PRO Power, 1-phase,
output: 24 VDC / 5 A, TopBoost + PowerBoost,
DC OK contact

Item No.	Pack. Unit
787-822	1

EPSITRON® Switched-Mode Power Supply,
PRO Power, 1-phase,
output: 24 VDC / 10 A, TopBoost + PowerBoost,
DC OK contact

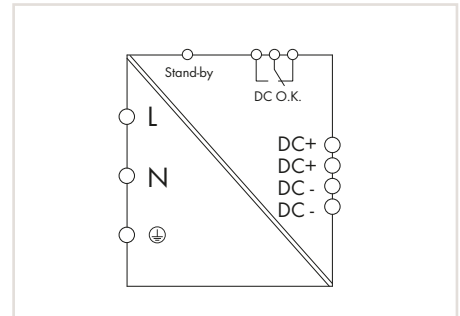
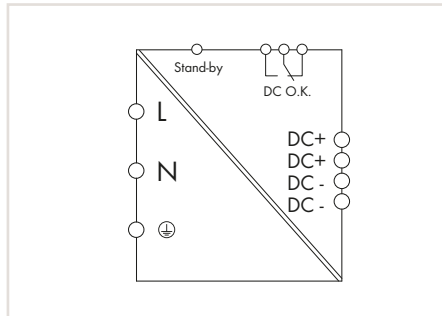
Item No.	Pack. Unit
787-832	1

Electrical Data

Nominal input voltage $U_{I,nom}$	100 ... 240 VAC
Input voltage derating	-5 % / VAC < 95 VAC
Input current I_i	0.97 A at 240 VAC and 5 VDC
Inrush current	< 30 A (peak)
Mains failure hold-up time	35 ms typ. at 230 VAC
Nominal output voltage $U_{o,nom}$	24 VDC (SELV)
Output voltage range	22 ... 29.5 VDC adjustable
Factory preset	24 VDC
Output current I_o	5 A at 24 VDC
Overload behavior	TopBoost / PowerBoost / Constant current
PowerBoost	10 ADC (for 4 s), 7.5 ADC (for another 4 s)
TopBoost	21 ADC (for 25 ms)
Efficiency	87.8 % typ.
Power loss P_V	0.5 W (stand-by) / 5.0 W (no load) / 14.6 W (nominal load)
Internal fuse	T 4 A / 250 V
External fuse	Circuit breakers 6 A, 10 A, 16 A, B or C characteristic; an external DC fuse is required for the DC input voltage.
Feedback voltage	Max. 35 VDC
Mechanical Data	
Connectors	Input/Output: WAGO 231 Series Signaling: WAGO 733 Series
Conductor range	Input/Output: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Signaling: 0.08 ... 0.5 mm ² / 28 ... 20 AWG
Strip length	Input/Output: 8 ... 9 mm / 0.31 ... 0.35 inch Signaling: 5 ... 6 mm / 0.2 ... 0.24 inch
Dimensions (mm) W x H x L	57 x 163 x 163 (incl. female connector), Length from upper-edge of DIN-35 rail
Weight	1268 g

Nominal input voltage	110 ... 240 VAC
Input voltage derating	-1.5 % / VAC < 110 VAC
Input current	1.2 A at 240 VAC and 10 VDC
Inrush current	< 8 A (active inrush current limitation)
Mains failure hold-up time	24 ms typ. at 230 VAC
Nominal output voltage	24 VDC (SELV)
Output voltage range	22 ... 29.5 VDC adjustable
Factory preset	24 VDC
Output current	10 A at 24 VDC
Overload behavior	TopBoost / PowerBoost / Constant current
PowerBoost	20 ADC (for 4 s), 15 ADC (for another 4 s)
TopBoost	60 ADC (for 25 ms)
Efficiency	90 % (typ.)
Power loss P_V	0.8 W (stand-by) / 3.8 W (no load) / 24 W (rated load)
Internal fuse	T 6.3 A / 250 V
External fuse	Circuit breakers 6 A, 10 A, 16 A, B or C characteristic; an external DC fuse is required for the DC input voltage.
Feedback voltage	Max. 35 VDC
Mechanical Data	
Connectors	Input/Output: WAGO 231 Series Signaling: WAGO 733 Series
Conductor range	Input/Output: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Signaling: 0.08 ... 0.5 mm ² / 28 ... 20 AWG
Strip length	Input/Output: 8 ... 9 mm / 0.31 ... 0.35 inch
Dimensions (mm) W x H x L	57 x 163 x 179 (incl. female connector), Length from upper-edge of DIN-35 rail
Weight	1485 g

Switched-Mode Power Supply, 1-Phase EPSITRON® PRO Power 787 Series



EPSITRON® Switched-Mode Power Supply,
PRO Power, 1-phase,
output: 24 VDC / 20 A, TopBoost + PowerBoost,
DC OK contact

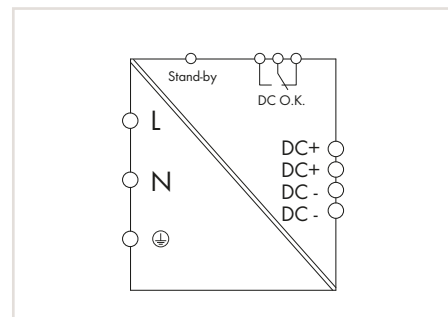
Item No.	Pack. Unit
787-834	1

EPSITRON® Switched-Mode Power Supply,
PRO Power, 1-phase,
output: 48 VDC / 5 A, TopBoost + PowerBoost,
DC OK contact

Item No.	Pack. Unit
787-833	1

Electrical Data

Nominal input voltage $U_{I,nom}$	110 ... 240 VAC	110 ... 240 VAC
Input voltage derating	-1.5 % / VAC < 110 VAC	-1.5 % / VAC < 110 VAC
Input current I_i	2.3 A at 230 VAC and 20 ADC	1.2 A at 230 VAC and 5 ADC
Inrush current	< 8 A (active inrush current limitation)	< 8 A (active inrush current limitation)
Mains failure hold-up time	25 ms typ. at 230 VAC	20 ms typ. at 230 VAC
Nominal output voltage $U_{O,nom}$	24 VDC (SELV)	48 VDC, (SELV)
Output voltage range	22 ... 29.5 VDC adjustable	33 ... 52 VDC adjustable
Factory preset	24 VDC	48 VDC
Output current I_o	20 A at 24 VDC	5 A at 48 VDC
Overload behavior	TopBoost / PowerBoost / Constant current	TopBoost / PowerBoost / Constant current
PowerBoost	30 ADC (for 4 s), 25 ADC (for 8 s)	10 ADC (for 4 s), 7.5 ADC (for 8 s)
TopBoost	80 ADC (for 25 ms)	30 ADC (for 25 ms)
Efficiency	91 % (typ.)	91 % (typ.)
Power loss P_v	0.8 W (stand-by) / 4.8 W (no load) / 43.2 W (rated load)	0.8 W (stand-by) / 7.4 W (no load) / 21.6 W (rated load)
Internal fuse	T 10 A / 250 V	T 6.3 A / 250 V
External fuse	Circuit breakers 6 A, 10 A, 16 A, B or C characteristic; an external DC fuse is required for the DC input voltage.	Circuit breakers 6 A, 10 A, 16 A, B or C characteristic; an external DC fuse is required for the DC input voltage.
Feedback voltage	Max. 35 VDC	Max. 63 VDC
Mechanical Data		
Connectors	Input: WAGO 231 Series Output: WAGO 831 Series Signaling: WAGO 733 Series	Input/Output: WAGO 231 Series Signaling: WAGO 733 Series
Conductor range	Input/Output: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Signaling: 0.08 ... 0.5 mm ² / 28 ... 20 AWG	Input/Output: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Signaling: 0.08 ... 0.5 mm ² / 28 ... 20 AWG
Strip length	Input: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Output: 0.5 ... 10 mm ² / 20 ... 8 AWG Signaling: 0.08 ... 0.5 mm ² / 28 ... 20 AWG	Input/Output: 8 ... 9 mm / 0.31 ... 0.35 inch Signaling: 5 ... 6 mm / 0.2 ... 0.24 inch
Dimensions (mm) W x H x L	97 x 171 x 187 (incl. female connector), Length from upper-edge of DIN-35 rail	57 x 163 x 179 (incl. female connector), Length from upper-edge of DIN-35 rail
Weight	2300 g	1475 g



EPSITRON® Switched-Mode Power Supply, PRO Power, 1-phase, output: 48 VDC / 10 A, TopBoost + PowerBoost, DC OK contact

Item No.	Pack. Unit
787-835	1

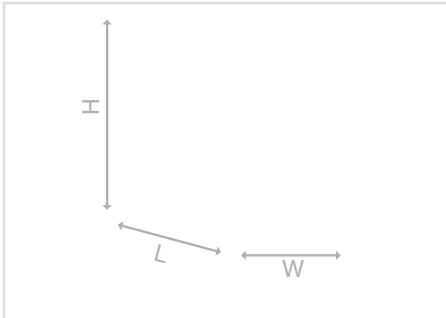
Electrical Data

Nominal input voltage $U_{i, nom}$	110 ... 240 VAC
Input voltage derating	-1.5 % / VAC < 110 VAC
Input current I_i	2.3 A at 230 VAC and 10 ADC
Inrush current	< 8 A (active inrush current limitation)
Mains failure hold-up time	20 ms typ. at 230 VAC
Nominal output voltage $U_{o, nom}$	48 VDC, (SELV)
Output voltage range	33 ... 52 VDC adjustable
Factory preset	48 VDC
Output current I_o	10 A at 48 VDC
Overload behavior	TopBoost / PowerBoost / Constant current
PowerBoost	17.5 ADC (for 4 s), 15 ADC (for 8 s)
TopBoost	60 ADC (for 25 ms)
Efficiency	91 % (typ.)
Power loss P_v	0.8 W (stand-by) / 4.8 W (no load) / 43.2 W (rated load)
Internal fuse	T 10 A / 250 V
External fuse	Circuit breakers 6 A, 10 A, 16 A, B or C characteristic; an external DC fuse is required for the DC input voltage.
Feedback voltage	Max. 63 VDC

Mechanical Data

Connectors	Input: WAGO 231 Series Output: WAGO 831 Series Signaling: WAGO 733 Series
Conductor range	Input: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Output: 0.5 ... 10 mm ² / 20 ... 8 AWG Signaling: 0.08 ... 0.5 mm ² / 28 ... 20 AWG
Strip length	Input: 8 ... 9 mm / 0.31 ... 0.35 inch Output: 13 ... 15 mm / 0.51 ... 0.59 inch Signaling: 5 ... 6 mm / 0.2 ... 0.24 inch
Dimensions (mm) W x H x L	97 x 171 x 187 (incl. female connector), Length from upper-edge of DIN-35 rail
Weight	2460 g

Switched-Mode Power Supply, 3-Phase EPSITRON® PRO Power 787 Series

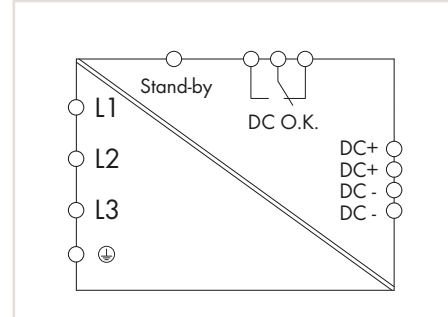
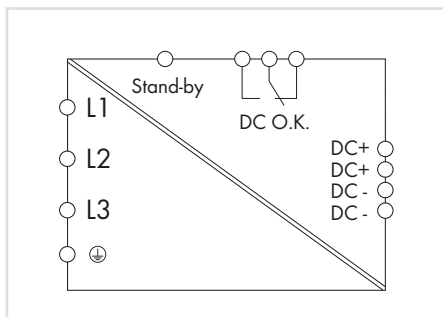


Features:

- Switched-Mode Power Supply unit with PowerBoost and TopBoost
- Stand-by input for switching off the output and minimizing power consumption (787-84x only)
- DC OK contact for output monitoring (787-84x only)
- Suitable for both parallel and series operation
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Electrically isolated output voltage (SELV) acc. to EN 60950-1/UL 60950-1; PELV acc. to EN 60204
- LineMonitor for parameter setting and monitoring (787-85x only)
- RS-232 serial interface (787-85x only)
- 4 signal outputs (787-85x only)

Technical Data

Input	
Nominal input voltage $U_{i, \text{nom}}$	3 x (2 x) 400 ... 500 VAC
Input voltage range	340 ... 550 VAC; 480 ... 780 VDC
Frequency	50 ... 60 Hz
Discharge current	1 mA (typ.)
Inrush current	< 30 A
Output	
Nominal output voltage $U_{o, \text{nom}}$	24 VDC (SELV)
Output voltage range	22.8 ... 28.8 VDC adjustable
Factory preset	24 VDC
Adjustment accuracy	1 %
Residual ripple	< 70 mV (peak-to-peak)
Current limitation	1.1 x I_o typ.
General Specifications	
Standards/Approvals	EN 60950, EN 61204-3, UL 60950, UL 508
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C Device start at -40 °C type-tested
Storage temperature	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Degree of pollution	2 (acc. to EN 50178)
Climatic category	3K3 (acc. to EN 60721)
Safety and Protection	
Test voltage Pri.-Sec./Pri.-GND/Sec.-GND	4.2 kV DC / 2.2 kV DC / 0.7 kV DC
Protection class	I
Degree of protection	IP20 per EN 60529
Overvoltage category	II
Overvoltage protection	Via varistor at primary circuit
Short-circuit-protection	Yes
No-load proof	Yes
Feedback voltage	Max. 35 VDC
Parallel operation	Yes
Series connection	Yes
MTBF	> 500,000 h (acc. to IEC 61709)
Connection and Type of Mounting	
Type of mounting	DIN-rail-mounting (EN 60715) in 2 positions



EPSITRON® Switched-Mode Power Supply, PRO Power, 3-phase, output: 24 VDC / 10 A, TopBoost + PowerBoost, DC OK contact

Item No.	Pack. Unit
787-840	1

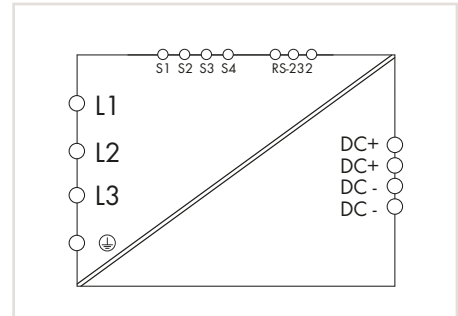
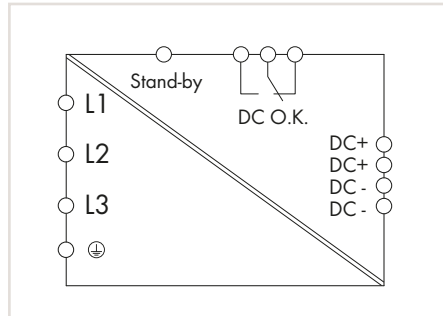
EPSITRON® Switched-Mode Power Supply, PRO Power, 3-phase, output: 24 VDC / 20 A, TopBoost + PowerBoost, DC OK contact

Item No.	Pack. Unit
787-842	1

Electrical Data

Input current I_i	3 x 0.6 A at 340 VAC and 10 ADC	3 x 1.1 A at 340 VAC and 20 ADC
Mains failure hold-up time	22 ms typ. at 3 x 400 VAC	13 ms typ. at 3 x 400 VAC
Output current I_o	10 A at 24 VDC	20 A at 24 VDC
PowerBoost	20 ADC (for 4 s), 15 ADC (for 16 s)	40 ADC (for 4 s), 30 ADC (for 16 s)
TopBoost	70 ADC (for 50 ms)	80 ADC (for 50 ms)
Overload behavior	TopBoost / PowerBoost / Constant current	TopBoost / PowerBoost / Constant current
Operational indication	LED green (DC OK), LED red (error)	LED green (DC OK), LED red (error)
Efficiency	91.7 % (typ.)	92.9 % (typ.)
Power loss P_v	7.8 W (stand-by) / 19.9 W (nominal load)	8.3 V (stand-by) / 34.1 W (nominal load)
Internal fuse	3 x T 2.5 A / 440 V	3 x T 2.5 A / 440 V
External fuse	3 x circuit breakers 6 A, 10 A, 16 A, B or C characteristic; or motor circuit breakers, setpoint 1.6 A, setting range 1.6 ... 2.5 A; ; an external DC fuse is required for the DC input voltage.	3 x circuit breakers 6 A, 10 A, 16 A, B or C characteristic; or motor circuit breaker, setpoint 2.5 A, setting range 2.5 ... 4.0 A; ; an external DC fuse is required for the DC input voltage.
Derating	-3 % / K (> +50 °C)	-3 % / K (> +50 °C)
Mechanical Data		
Connectors	Input/Output: WAGO 231 Series Signaling: WAGO 733 Series	Input: WAGO 231 Series Output: WAGO 831 Series Signaling: WAGO 733 Series
Conductor range	Input/Output: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Signaling: 0.08 ... 0.5 mm ² / 28 ... 20 AWG	Input: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Output: 0.5 ... 10 mm ² / 20 ... 8 AWG Signaling: 0.08 ... 0.5 mm ² / 28 ... 20 AWG
Strip length	Input/Output: 8 ... 9 mm / 0.31 ... 0.35 inch Signaling: 5 ... 6 mm / 0.2 ... 0.24 inch	Input: 8 ... 9 mm / 0.31 ... 0.35 inch Output: 13 ... 15 mm / 0.51 ... 0.59 inch Signaling: 5 ... 6 mm / 0.2 ... 0.24 inch
Dimensions (mm) W x H x L	57 x 163 x 179 (incl. female connector), Length from upper-edge of DIN-35 rail	77 x 171 x 179 (incl. female connector), Length from upper-edge of DIN-35 rail
Weight	1000 g	1300 g

Switched-Mode Power Supply, 3-Phase EPSITRON® PRO Power 787 Series



EPSITRON® Switched-Mode Power Supply, PRO Power, 3-phase, output: 24 VDC / 40 A, TopBoost + PowerBoost, DC OK contact

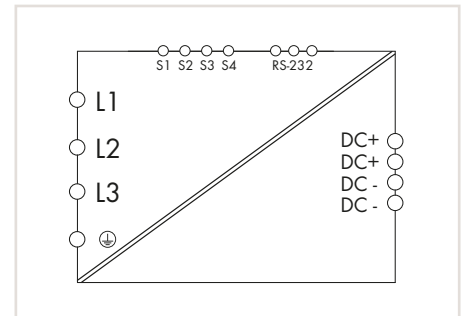
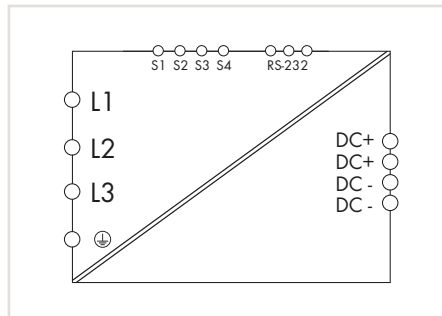
	Item No.	Pack. Unit
	787-844	1
with lateral DIN-rail support	787-844/000-002	1

EPSITRON® Switched-Mode Power Supply, PRO Power, 3-phase, output: 24 VDC / 10 A, TopBoost + PowerBoost, LineMonitor, RS-232, Signal outputs

	Item No.	Pack. Unit
	787-850	1

Electrical Data

Input current I_i	3 x 2.0 A at 340 VAC and 40 ADC	3 x 0.6 A at 340 VAC and 10 ADC
Mains failure hold-up time	15 ms typ. at 3 x 400 VAC	22 ms typ. at 3 x 400 VAC
Output current I_o	40 A at 24 VDC	10 A at 24 VDC
PowerBoost	60 ADC (for 4 s), 50 ADC (for 16 s)	20 ADC (for 4 s), 15 ADC (for 16 s)
TopBoost	100 ADC (for 50 ms)	70 ADC (for 50 ms)
Overload behavior	TopBoost / PowerBoost / Constant current	adjustable (constant current / fuse mode)
Operational indication	LED green (DC OK), LED red (error)	LED green (DC OK), LED yellow (warning), LED red (error)
Signaling	-	LED, LCD, 4 x signal output 24 VDC, 25 mA
LineMonitor, parameter setting	-	via LCD and RS-232 serial interface
Efficiency	93.6 % (typ.)	91.7 % (typ.)
Power loss P_v	7.0 W (stand-by) / 61.5 W (nominal load)	7.8 W (stand-by) / 19.9 W (nominal load)
Internal fuse	3 x T 3.2 A / 440 V	3 x T 2.5 A / 440 V
External fuse	3 x circuit breakers 6 A, 10 A, 16 A, B or C characteristic; or motor circuit breakers, setpoint 3.2 A, setting range 2.5 ... 4.0 A; an external DC fuse is required for the DC input voltage.	3 x circuit breakers 6 A, 10 A, 16 A, B or C characteristic; or motor circuit breakers, setpoint 1.6 A, setting range 1.6 ... 2.5 A; an external DC fuse is required for the DC input voltage.
Derating	-5 % / K (>45 °C)	-3 % / K (> +50 °C)
Mechanical Data		
Connectors	Input: WAGO 231 Series Output: WAGO 831 Series Signaling: WAGO 733 Series	Input/Output: WAGO 231 Series Signaling: WAGO 733 Series
Conductor range	Input: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Output: 0.5 ... 10 mm ² / 20 ... 8 AWG Signaling: 0.08 ... 0.5 mm ² / 28 ... 20 AWG	Input/Output: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Signaling: 0.08 ... 0.5 mm ² / 28 ... 20 AWG
Strip length	Input: 8 ... 9 mm / 0.31 ... 0.35 inch Output: 13 ... 15 mm / 0.51 ... 0.59 inch Signaling: 5 ... 6 mm / 0.2 ... 0.24 inch	Input/Output: 8 ... 9 mm / 0.31 ... 0.35 inch Signaling: 5 ... 6 mm / 0.2 ... 0.24 inch
Dimensions (mm) W x H x L	128 x 171 x 205 (incl. female connector), Length from upper-edge of DIN-35 rail	57 x 163 x 179 (incl. female connector), Length from upper-edge of DIN-35 rail
Weight	2500 g	1000 g



EPSITRON® Switched-Mode Power Supply, PRO Power, 3-phase, output: 24 VDC / 20 A, TopBoost + PowerBoost, LineMonitor, RS-232, Signal outputs

Item No.	Pack. Unit
787-852	1

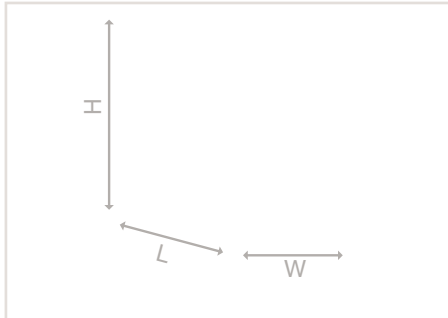
EPSITRON® Switched-Mode Power Supply, PRO Power, 3-phase, output: 24 VDC / 40 A, TopBoost + PowerBoost, LineMonitor, RS-232, Signal outputs

Item No.	Pack. Unit
787-854	1

Electrical Data

Input current I_i	3 x 1.1 A at 340 VAC and 20 ADC	3 x 2.0 A at 340 VAC
Mains failure hold-up time	13 ms typ. at 3 x 400 VAC	15 ms typ. at 3 x 400 VAC
Output current I_o	20 A at 24 VDC	40 A at 24 VDC
PowerBoost	40 ADC (for 4 s), 30 ADC (for 16 s)	60 ADC (for 4 s), 50 ADC (for 16 s)
TopBoost	80 ADC (for 50 ms)	100 ADC (for 50 ms)
Overload behavior	adjustable (constant current / fuse mode)	adjustable (constant current / fuse mode)
Operational indication	LED green (DC OK), LED yellow (warning), LED red (error)	LED green (DC OK), LED yellow (warning), LED red (error)
Signaling	LED, LCD, 4 x signal output 24 VDC, 25 mA	LED, LCD, 4 x signal output 24 VDC, 25 mA
LineMonitor, parameter setting	via LCD and RS-232 serial interface	via LCD and RS-232 serial interface
Efficiency	92.9 % (typ.)	93.6 % (typ.)
Power loss P_V	8.3 W (stand-by) / 34.1 W (nominal load)	7.0 W (stand-by) / 61.5 W (nominal load)
Internal fuse	3 x T 2.5 A / 440 V	3 x T 3.2 A / 440 V
External fuse	3 x circuit breakers 6 A, 10 A, 16 A, B or C characteristic; or motor circuit breakers, setpoint: 2.5 A, setting range 2.5 ... 4.0 A; an external DC fuse is required for the DC input voltage.	3 x circuit breakers 6 A, 10 A, 16 A, B or C characteristic; or motor circuit breakers, setpoint 3.2 A, setting range 2.5 ... 4.0 A; an external DC fuse is required for the DC input voltage.
Derating	-3 % / K (>50 °C)	-5 % / K (>45 °C)
Mechanical Data		
Connectors	Input: WAGO 231 Series Output: WAGO 831 Series Signaling: WAGO 733 Series	Input: WAGO 231 Series Output: WAGO 831 Series Signaling: WAGO 733 Series
Conductor range	Input: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Output: 0.5 ... 10 mm ² / 20 ... 8 AWG Signaling: 0.08 ... 0.5 mm ² / 28 ... 20 AWG	Input: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Output: 0.5 ... 10 mm ² / 20 ... 8 AWG Signaling: 0.08 ... 0.5 mm ² / 28 ... 20 AWG
Strip length	Input: 8 ... 9 mm / 0.31 ... 0.35 inch Output: 13 ... 15 mm / 0.51 ... 0.59 inch Signaling: 5 ... 6 mm / 0.2 ... 0.24 inch	Input: 8 ... 9 mm / 0.31 ... 0.35 inch Output: 13 ... 15 mm / 0.51 ... 0.59 inch Signaling: 5 ... 6 mm / 0.2 ... 0.24 inch
Dimensions (mm) W x H x L	77 x 171 x 179 (incl. female connector), Length from upper-edge of DIN-35 rail	128 x 171 x 205 (incl. female connector), Length from upper-edge of DIN-35 rail
Weight	1300 g	2300 g

Switched-Mode Power Supply, 3-Phase EPSITRON® PRO Power 787 Series

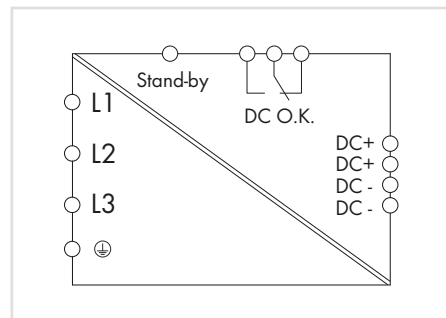
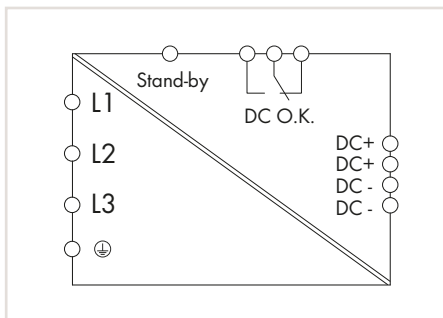


Features:

- Switched-Mode Power Supply unit with PowerBoost and TopBoost
- Stand-by input for switching off the output and minimizing power consumption
- DC OK contact for output monitoring
- Suitable for both parallel and series operation
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Electrically isolated output voltage (SELV) acc. to EN 60950-1/UL 60950-1; PELV acc. to EN 60204

Technical Data

Input	
Nominal input voltage $U_{i, \text{nom}}$	3 x (2 x) 400 ... 500 VAC
Input voltage range	340 ... 550 VAC; 480 ... 780 VDC
Frequency	50 ... 60 Hz
Discharge current	1 mA (typ.)
Inrush current	< 30 A (peak)
Output	
Nominal output voltage $U_{o, \text{nom}}$	48 VDC, (SELV)
Output voltage range	39 ... 53 VDC adjustable
Factory preset	48 VDC
Adjustment accuracy	1 %
Residual ripple	< 70 mV (peak-to-peak)
Current limitation	1.1 x I_o typ.
Overload behavior	TopBoost/PowerBoost/Constant current
Operational indication	LED green (DC OK), LED red (error)
General Specifications	
Standards/Approvals	EN 60950, EN 61204-3, UL 60950, UL 508
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C Device start at -40 °C type-tested
Storage temperature	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Degree of pollution	2 (acc. to EN 50178)
Climatic category	3K3 (acc. to EN 60721)
Safety and Protection	
Test voltage Pri.-Sec./Pri.-GND/Sec.-GND	4.2 kV DC / 2.2 kV DC / 0.7 kV DC
Protection class	I
Degree of protection	IP20 per EN 60529
Overvoltage category	II
Overvoltage protection	Via varistor at primary circuit
Short-circuit-protection	Yes
No-load proof	Yes
Feedback voltage	Max. 63 VDC
Parallel operation	Yes
Series connection	Yes
MTBF	> 500,000 h (acc. to IEC 61709)
Connection and Type of Mounting	
Connectors	Input: WAGO 231 Series Output: WAGO 831 Series Signaling: WAGO 733 Series
Conductor range	Input: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Output: 0.5 ... 10 mm ² / 20 ... 8 AWG Signaling: 0.08 ... 0.5 mm ² / 28 ... 20 AWG
Strip length	Input: 8 ... 9 mm / 0.31 ... 0.35 inch Output: 13 ... 15 mm / 0.51 ... 0.59 inch Signaling: 5 ... 6 mm / 0.2 ... 0.24 inch
Type of mounting	DIN-rail-mounting (EN 60715) in 2 positions



EPSITRON® Switched-Mode Power Supply, PRO Power, 3-phase, output: 48 VDC / 10 A, TopBoost + PowerBoost, DC OK contact

Item No.	Pack. Unit
787-845	1

EPSITRON® Switched-Mode Power Supply, PRO Power, 3-phase, output: 48 VDC / 20 A, TopBoost + PowerBoost, DC OK contact

Item No.	Pack. Unit
787-847	1

Electrical Data

Input current I_i	3 x 1.1 A at 340 VAC and 10 ADC
Mains failure hold-up time	12 ms typ. at 3 x 400 VAC
Output current I_o	10 A at 48 VDC
PowerBoost	15 ADC (for 4 s), 12.5 ADC (for 16 s)
TopBoost	55 ADC (for 50 ms)
Efficiency	93 % (typ.)
Power loss P_v	0.8 W (stand-by) / 8.2 W (no load) / 38 W (rated load)
Internal fuse	3 x T 2.5 A / 440 V
External fuse	3 x circuit breakers 6 A, 10 A, 16 A, B or C characteristic; or motor circuit breakers, setpoint: 2.5 A, setting range 2.5 ... 4.0 A; an external DC fuse is required for the DC input voltage.
Derating	-3 % / K (> +50 °C)

Mechanical Data

Dimensions (mm) W x H x L	77 x 171 x 179 (incl. female connector), Length from upper-edge of DIN-35 rail
Weight	1900 g

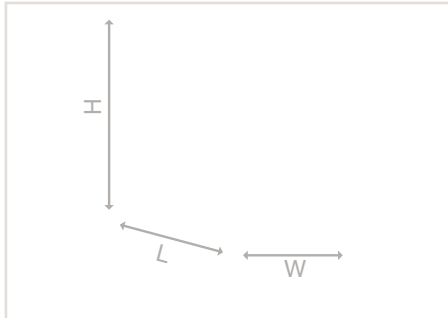
Input current I_i	3 x 2.0 A at 340 VAC and 20 ADC
Mains failure hold-up time	15 ms typ. at 3 x 400 VAC
Output current I_o	20 A at 48 VDC
PowerBoost	30 ADC (for 4 s), 25 ADC (for 16 s)
TopBoost	80 ADC (for 25 ms)
Efficiency	94.4 % (typ.)
Power loss P_v	0.8 W (stand-by) / 5.2 W (no load) / 59.2 W (rated load)
Internal fuse	3 x T 3.2 A / 440 V
External fuse	3 x circuit breakers 6 A, 10 A, 16 A, B or C characteristic; or motor circuit breakers, setpoint 3.2 A, setting range 2.5 ... 4.0 A; an external DC fuse is required for the DC input voltage.
Derating	-5 % / K (> +45 °C)

Dimensions (mm) W x H x L	128 x 171 x 205 (incl. female connector), Length from upper-edge of DIN-35 rail
Weight	3270 g

Switched-Mode Power Supply, 1-Phase

EPSITRON® CLASSIC Power

787 Series



Features:

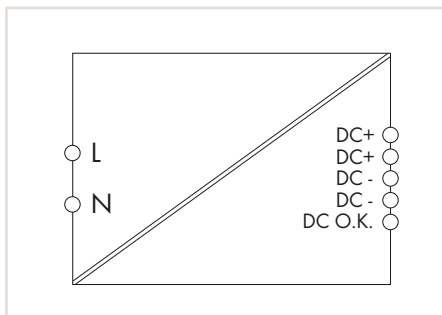
- Switched-Mode Power Supply unit
- Natural convection cooling when horizontally mounted
- Enclosed for use in switchgear cabinets
- Bounce-free switching signal (DC OK)
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) acc. to EN 60950-1/UL 60950-1; PELV acc. to EN 60204
- GL approval: also suitable for EMC 1 only in conjunction with 787-980 filter module (787-1601, -1611, -1621)

Technical Data

Input	
Nominal input voltage $U_{i,nom}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 372 VDC
Frequency	44 ... 66 Hz; 0 Hz
Inrush current	< 30 A
Output	
Nominal output voltage $U_{o,nom}$	12 VDC (SELV)
Factory preset	12 VDC
Adjustment accuracy	< 1 %
Current limitation	$1.1 \times I_o$ typ.
Overload behavior	Constant current (787-1601 ... -1635), TopBoost (787-1622, 787-1631 ... -1635)
Operational indication	LED green (U_o)
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C Device start at -40 °C type-tested
Storage temperature	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Degree of pollution	2 (acc. to EN 50178)
Climatic category	3K3 (acc. to EN 60721)
Safety and Protection	
Degree of protection	IP20 per EN 60529
Overvoltage category	II
Short-circuit-protection	Yes
No-load proof	Yes
Feedback voltage	Max. 25 VDC
Parallel operation	Yes
Series connection	Yes
MTBF	> 500,000 h (acc. to IEC 61709)
Connection and Type of Mounting	
Connectors	Input/Output/Signaling WAGO 721 Series
Conductor range	Input/Output/Signaling 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input/Output/Signaling 8 ... 9 mm / 0.31 ... 0.35 inch
Type of mounting	DIN-rail mounting (EN 60715)



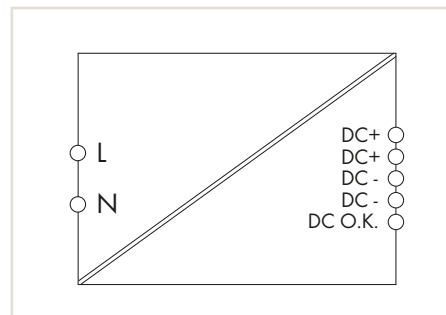
Similar to pictured device



EPSITRON® Switched-Mode Power Supply,
CLASSIC Power, 1-phase,
output: 12 VDC / 2 A, NEC Class 2,
DC OK contact

Item No.	Pack. Unit
787-1601	1

NEC Class 2 acc. to UL 60950



EPSITRON® Switched-Mode Power Supply,
CLASSIC Power, 1-phase,
output: 12 VDC / 4 A, NEC Class 2,
DC OK contact

Item No.	Pack. Unit
787-1611	1

NEC Class 2 acc. to UL 60950

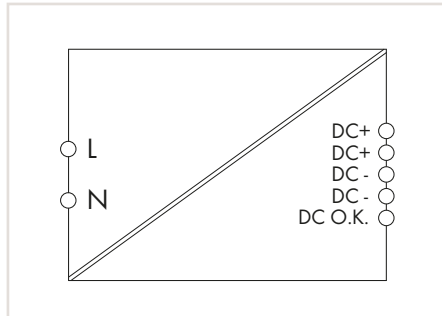
Electrical Data

Input current I_i	0.29 A (240 VAC); 0.5 A (100 VAC)	0.46 A (240 VAC); 0.86 A (100 VAC)
Input voltage derating	-2.5 % (< 95 VAC)	-2.5 % (< 95 VAC)
Discharge current		
Mains failure hold-up time	120 ms (230 VAC); 15 ms (100 VAC)	120 ms (230 VAC); 15 ms (100 VAC)
Output voltage range	11.5 ... 14.5 VDC adjustable	11.5 ... 14.5 VDC adjustable
Output current I_o	2 A at 12 VDC (2.1 A up to 40 °C)	4 A at 12 VDC (4.2 A up to 40 °C)
Residual ripple	20 mV (peak-to-peak) typ.	20 mV (peak-to-peak) typ.
Signaling	1 x active signal output 12 VDC, 40 mA	1 x active signal output 12 VDC, 40 mA
Efficiency	82 % (typ.)	86 % (typ.)
Power loss P_v	< 0.7 W (230 VAC, no load); 5.3 W (230 VAC, nominal load)	< 1 W (230 VAC, no load); 8 W (230 VAC, nominal load)
Power loss P_v (max.)	5.7 W typ. (100 VAC / 12 VDC, 2 A)	9.1 W typ. (100 VAC / 12 VDC, 4 A)
Internal fuse	T 2 A / 250 V	T 4 A / 250 V
External fuse	Circuit breakers 6 A, 10 A, 16 A; B or C characteristic; an external DC fuse is re- quired for the DC input voltage.	Circuit breakers 6 A, 10 A, 16 A; B or C characteristic; an external DC fuse is re- quired for the DC input voltage.
Derating	-3 % / K (> 50 °C)	-3 % / K (> 50 °C)
Test voltage Pri.-Sec./Pri.-GND/Sec.-GND	4.2 kV (DC)	4.2 kV (DC)
Protection class	II	II
Overvoltage protection	Varistor (input side); internal protective circuit, < 35 VDC (output side in case of an error)	Varistor (input side); internal protective circuit, < 35 VDC (output side in case of an error)
Mechanical Data		
Dimensions (mm) W x H x L	22.5 x 90 x 107.5 Length from upper-edge of DIN-35 rail	45 x 90 x 107.5 (incl. female connector), Length from upper-edge of DIN-35 rail
Weight	128 g	210 g
General Specifications		
Standards/Approvals	EN 60950-1, EN 61204-3, EN 60335-1, UL 60950-1, UL 508, GL	EN 60950-1, EN 61204-3, EN 60335-1, UL 60950-1, UL 508, GL

Switched-Mode Power Supply, 1-Phase EPSITRON® CLASSIC Power 787 Series



Similar to pictured device

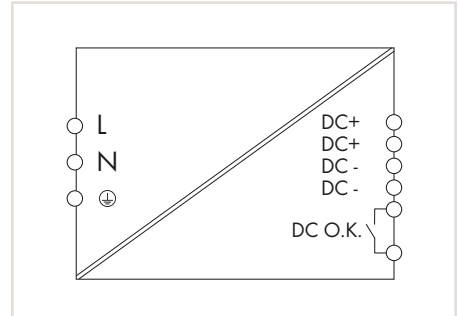


EPSITRON® Switched-Mode Power Supply,
CLASSIC Power, 1-phase,
output: 12 VDC / 7 A, DC OK contact

Item No.	Pack. Unit
787-1621	1



Similar to pictured device



EPSITRON® Switched-Mode Power Supply,
CLASSIC Power, 1-phase,
output: 12 VDC / 15 A, DC OK contact

Item No.	Pack. Unit
787-1631	1

Integrated TopBoost, enabling secondary-side protection via wire breakers

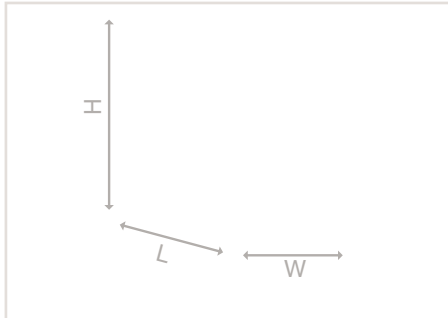
Electrical Data

Input current I_i	0.9 A (240 VAC); 1.66 A (100 VAC)	0.93 A (240 VAC); 2.05 A (100 VAC)
Input voltage derating	-2.5 % (< 95 VAC)	-2.5 % (< 100 VAC)
Discharge current		< 1 mA
Mains failure hold-up time	80 ms (230 VAC); 15 ms (100 VAC)	28 ms (230 VAC); 28 ms (100 VAC)
Output voltage range	11.5 ... 14.5 VDC adjustable	11.5 ... 15 VDC adjustable
Output current I_o	7 A at 12 VDC (7.5 A up to 40 °C)	15 A at 12 VDC
Residual ripple	20 mV (peak-to-peak) typ.	35 mV (peak-to-peak) typ.
Signaling	1 x active signal output 12 VDC, 40 mA	DC OK contact; (Make contact, max. 30 VAC/DC, 1 A)
Efficiency	86 % (typ.)	90 % (typ.)
Power loss P_V	< 1 W (230 VAC, no load); 16.2 W (230 VAC, nominal load)	4.4 W (230 VAC, no load); 21.8 W (230 VAC, nominal load)
Power loss P_V (max.)	19.8 W typ. (100 VAC / 12 VDC, 7 A)	24.7 W typ. (100 VAC / 12 VDC, 15 A)
Internal fuse	T 4 A / 250 V	T 6.3 A / 250 V
External fuse	Circuit breakers 6 A, 10 A, 16 A; B or C characteristic; an external DC fuse is required for the DC input voltage	Circuit breakers 10 A, 16 A, B or C characteristic; an external DC fuse is required for the DC input voltage
Derating	-3 % / K (> 50 °C)	-5 % / K (> 60 °C, 196 ... 264 VAC) -2.5 % / K (> 50 °C, 85 ... 195 VAC)
Test voltage Pri.-Sec./Pri.-GND/Sec.-GND	4.2 kV (DC)	4.2 kV DC / 2.2 kV DC / 0.7 kV DC
Protection class	II	I
Overvoltage protection	Varistor (input side); internal protective circuit, < 32 VDC (output side in case of an error)	Varistor (input side); internal protective circuit, < 20 VDC (output side in case of an error)
Mechanical Data		
Dimensions (mm) W x H x L	52 x 90 x 119 (incl. female connector), Length from upper-edge of DIN-35 rail	55 x 127 x 172 (incl. female connector), Length from upper-edge of DIN-35 rail
Weight	384 g	930 g
General Specifications		
Standards/Approvals	EN 60950-1, EN 61204-3, EN 60335-1, UL 60950-1, UL 508, GL	EN 60950-1, EN 61204-3, UL 60950-1, UL 508, GL

Switched-Mode Power Supply, 1-Phase

EPSITRON® CLASSIC Power

787 Series



Features:

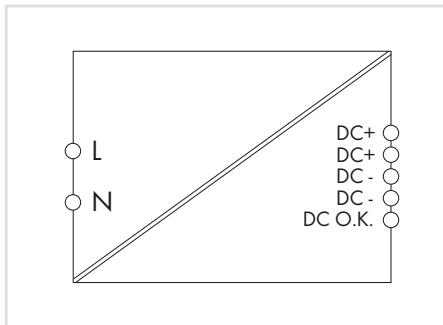
- Switched-Mode Power Supply unit
- Natural convection cooling when horizontally mounted
- Enclosed for use in switchgear cabinets
- Bounce-free switching signal (DC OK)
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) acc. to EN 60950-1/UL 60950-1; PELV acc. to EN 60204
- GL approval: also suitable for EMC 1 only in conjunction with 787-980 filter module (787-1602, 787-1606, 787-1616/000-1000, 787-1622)

Technical Data

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 372 VDC
Frequency	44 ... 66 Hz; 0 Hz
Inrush current	< 30 A
Output	
Nominal output voltage $U_{o, \text{nom}}$	24 VDC (SELV)
Output voltage range	23 ... 28.5 VDC adjustable
Factory preset	24 VDC
Adjustment accuracy	< 1 %
Overload behavior	Constant current
Operational indication	LED green (U_o)
Fuse Protection	
External fuse	Circuit breakers 6 A, 10 A, 16 A; B or C characteristic; an external DC fuse is required for the DC input voltage.
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C; Device start at -40 °C type-tested
Storage temperature	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Degree of pollution	2 (acc. to EN 50178)
Climatic category	3K3 (acc. to EN 60721)
Safety and Protection	
Degree of protection	IP20 per EN 60529
Overvoltage category	II
Short-circuit-protection	Yes
No-load proof	Yes
Feedback voltage	Max. 35 VDC
Parallel operation	Yes
Series connection	Yes
MTBF	> 500,000 h (acc. to IEC 61709)
Connection and Type of Mounting	
Type of mounting	DIN-rail mounting (EN 60715)



Similar to pictured device



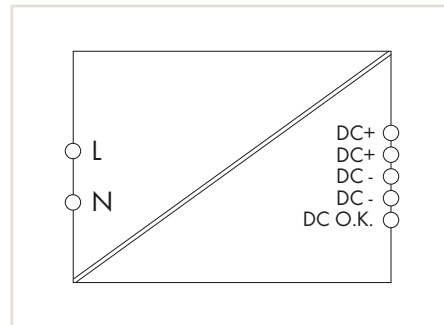
EPSITRON® Switched-Mode Power Supply, CLASSIC Power, 1-phase, output: 24 VDC / 1 A, NEC Class 2, DC OK contact

Item No.	Pack. Unit
787-1602	1

NEC Class 2 acc. to UL 60950



Similar to pictured device



EPSITRON® Switched-Mode Power Supply, CLASSIC Power, 1-phase, output: 24 VDC / 2 A, NEC Class 2, DC OK contact

Item No.	Pack. Unit
787-1606	1

NEC Class 2 acc. to UL 60950

5

Electrical Data

Input voltage derating	-2.5 % (< 95 VAC)
Input current I _i	0.28 A (240 VAC); 0.49 A (100 VAC)
Mains failure hold-up time	120 ms (230 VAC); 20 ms (100 VAC)
Output current I _o	1 A at 24 VDC (1.2 A up to 40 °C)
Residual ripple	20 mV (peak-to-peak) typ.
Current limitation	1.1 x I _o typ.
Signaling	1 x active signal output 24 VDC, 20 mA
Efficiency	86 % (typ.)
Power loss P _v	< 1 W (230 VAC, no load); 4 W (230 VAC, nominal load)
Power loss P _v (max.)	5 W typ. (100 VAC / 24 VDC, 1 A)
Internal fuse	T 2 A / 250 V
Derating	-3 % / K (> 50 °C)
Test voltage Pri.-Sec./Pri.-GND/Sec.-GND	4.2 kV (DC)
Protection class	II
Overvoltage protection	Varistor (input side); internal protective circuit, < 39 VDC (output side in case of an error)
Connectors	Input/Output/Signaling: WAGO 721 Series
Conductor range	Input/Output/Signaling 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input/Output/Signaling 8 ... 9 mm / 0.31 ... 0.35 inch
Mechanical Data	
Dimensions (mm) W x H x L	22.5 x 90 x 107.5 (incl. female connector), Length from upper-edge of DIN-35 rail
Weight	128 g
General Specifications	
Standards/Approvals	EN 60950-1, EN 61204-3, EN 60335-1, UL 60950-1, UL 508, GL

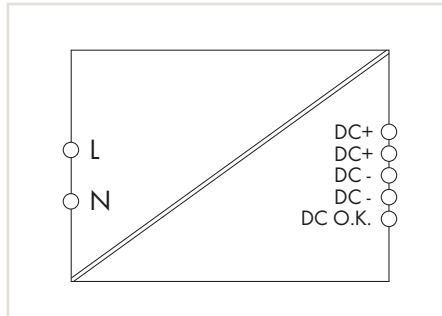
Input voltage derating	-2.5 % (< 95 VAC)
Input current I _i	0.48 A (240 VAC); 0.82 A (100 VAC)
Mains failure hold-up time	120 ms (230 VAC); 20 ms (100 VAC)
Output current I _o	2 A at 24 VDC (2.2 A up to 40 °C)
Residual ripple	20 mV (peak-to-peak) typ.
Current limitation	1.1 x I _o typ.
Signaling	1 x active signal output 24 VDC, 20 mA
Efficiency	89 % (typ.)
Power loss P _v	< 1 W (230 VAC, no load); 6 W (230 VAC, nominal load)
Power loss P _v (max.)	7 W typ. (100 VAC / 24 VDC, 2 A)
Internal fuse	T 4 A / 250 V
Derating	-3 % / K (> 50 °C)
Test voltage Pri.-Sec./Pri.-GND/Sec.-GND	4.2 kV (DC)
Protection class	II
Overvoltage protection	Varistor (input side); internal protective circuit, < 37 VDC (output side in case of an error)
Connectors	Input/Output/Signaling: WAGO 721 Series
Conductor range	Input/Output/Signaling 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input/Output/Signaling 8 ... 9 mm / 0.31 ... 0.35 inch
Mechanical Data	
Dimensions (mm) W x H x L	45 x 90 x 107.5 (incl. female connector), Length from upper-edge of DIN-35 rail
Weight	210 g
General Specifications	
Standards/Approvals	EN 60950-1, EN 61204-3, EN 60335-1, UL 60950-1, UL 508, GL

Input voltage derating	-2.5 % (< 95 VAC)
Input current I _i	0.48 A (240 VAC); 0.82 A (100 VAC)
Mains failure hold-up time	120 ms (230 VAC); 20 ms (100 VAC)
Output current I _o	2 A at 24 VDC (2.2 A up to 40 °C)
Residual ripple	20 mV (peak-to-peak) typ.
Current limitation	1.1 x I _o typ.
Signaling	1 x active signal output 24 VDC, 20 mA
Efficiency	89 % (typ.)
Power loss P _v	< 1 W (230 VAC, no load); 6 W (230 VAC, nominal load)
Power loss P _v (max.)	7 W typ. (100 VAC / 24 VDC, 2 A)
Internal fuse	T 4 A / 250 V
Derating	-3 % / K (> 50 °C)
Test voltage Pri.-Sec./Pri.-GND/Sec.-GND	4.2 kV (DC)
Protection class	II
Overvoltage protection	Varistor (input side); internal protective circuit, < 37 VDC (output side in case of an error)
Connectors	Input/Output/Signaling: WAGO 721 Series
Conductor range	Input/Output/Signaling 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input/Output/Signaling 8 ... 9 mm / 0.31 ... 0.35 inch
Mechanical Data	
Dimensions (mm) W x H x L	45 x 90 x 107.5 (incl. female connector), Length from upper-edge of DIN-35 rail
Weight	210 g
General Specifications	
Standards/Approvals	EN 60950-1, EN 61204-3, EN 60335-1, UL 60950-1, UL 508, GL

Switched-Mode Power Supply, 1-Phase EPSITRON® CLASSIC Power 787 Series



Similar to pictured device

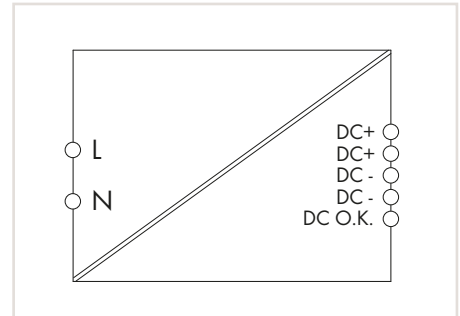


EPSITRON® Switched-Mode Power Supply,
CLASSIC Power, 1-phase,
output: 24 VDC / 4 A, DC OK contact

Item No.	Pack. Unit
787-1616	1



Similar to pictured device



EPSITRON® Switched-Mode Power Supply,
CLASSIC Power, 1-phase,
output: 24 VDC / 3.8 A, NEC Class 2,
DC OK contact

Item No.	Pack. Unit
787-1616/000-1000	1

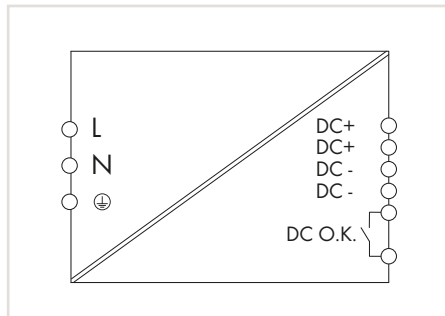
Limited Power Source (LPS) NEC Class 2 acc. to
UL 1310 and UL 60950

Electrical Data

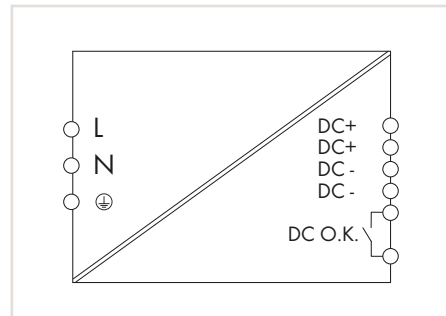
Input voltage derating	-2.5 % (< 95 VAC)	-2.5 % (< 95 VAC)
Input current I _i	0.98 A (240 VAC); 1.82 A (100 VAC)	0.95 A (240 VAC); 1.73 A (100 VAC)
Mains failure hold-up time	80 ms (230 VAC); 15 ms (100 VAC)	80 ms (230 VAC); 15 ms (100 VAC)
Output current I _o	4 A at 24 VDC (4.2 A up to 40 °C)	3.8 A at 24 VDC
Residual ripple	20 mV (peak-to-peak) typ.	20 mV (peak-to-peak) typ.
Current limitation	1.1 x I _o typ.	3.8 A (3.2 A at U _o > 25 VDC), LPS acc. to NEC Class 2
Signaling	1 x active signal output 24 VDC, 20 mA	1 x active signal output 24 VDC, 20 mA
Efficiency	89 % (typ.)	87 % typ.
Power loss P _v	< 1 W (230 VAC, no load); 12.4 W (230 VAC, nominal load)	< 2.8 W (230 VAC, no load); 14 W (230 VAC, nominal load)
Power loss P _v (max.)	15 W typ. (100 VAC / 24 VDC, 4 A)	< 20 W typ. (100 VAC / 91 W)
Internal fuse	T 4 A / 250 V	T 4 A / 250 V
Derating	-3 % / K (> 50 °C)	-3 % / K (> 50 °C)
Test voltage Pri.-Sec./Pri.-GND/Sec.-GND	4.2 kV (DC)	4.2 kV (DC)
Protection class	II	II
Overvoltage protection	Varistor (input side); internal protective circuit, < 40 VDC (output side in case of an error)	Varistor (input side); internal protective circuit, < 40 VDC (output side in case of an error)
Connectors	Input/Output/Signaling: WAGO 721 Series	Input/Output/Signaling: WAGO 721 Series
Conductor range	Input/Output/Signaling 0.08 ... 2.5 mm ² / 28 ... 12 AWG	Input/Output/Signaling 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input/Output/Signaling 8 ... 9 mm / 0.31 ... 0.35 inch	Input/Output/Signaling 8 ... 9 mm / 0.31 ... 0.35 inch
Mechanical Data		
Dimensions (mm) W x H x L	52 x 90 x 119 (incl. female connector), Length from upper-edge of DIN-35 rail	52 x 90 x 119 (incl. female connector), Length from upper-edge of DIN-35 rail
Weight	384 g	384 g
General Specifications		
Standards/Approvals	EN 60950-1, EN 61204-3, EN 60335-1, UL 60950-1, UL 508, GL	EN 60950-1, EN 61204-3, EN 60335-1, UL 60950-1, UL 508, UL 1310, GL



Similar to pictured device



Similar to pictured device



EPSITRON® Switched-Mode Power Supply,
CLASSIC Power, 1-phase,
output: 24 VDC / 5 A, TopBoost, DC OK contact

	Item No.	Pack. Unit
	787-1622	1

Integrated TopBoost, enabling secondary-side protection via wire breakers

EPSITRON® Switched-Mode Power Supply,
CLASSIC Power, 1-phase,
output: 24 VDC / 10 A, TopBoost, DC OK contact

	Item No.	Pack. Unit
	787-1632	1

Integrated TopBoost, enabling secondary-side protection via wire breakers,
input voltage 90 ... 372 VDC possible at operating temperatures of 0 ... +70 °C!

Electrical Data

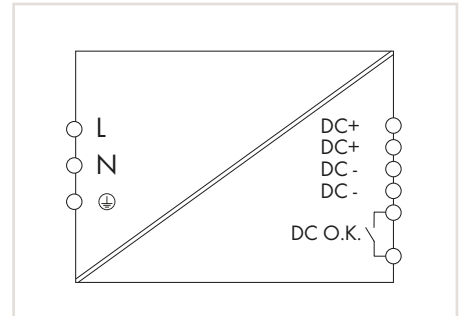
Input voltage derating	-2.5 % (< 97 VAC)
Input current I _i	1.24 A (230 VAC); 2.3 A (100 VAC)
Mains failure hold-up time	80 ms (230 VAC); 10 ms (100 VAC)
Output current I _o	5 A at 24 VDC
Residual ripple	30 mV (peak-to-peak) typ.
Current limitation	1.1 x I _o typ.
Signaling	DC OK contact; (Make contact, max. 30 VAC/DC, 1 A)
Efficiency	89 % (typ.)
Power loss P _v	1.2 W (230 VAC, no load); 14.6 W (230 VAC, nominal load)
Power loss P _v (max.)	19.4 W typ. (100 VAC / 24 VDC, 5 A)
Internal fuse	T 4 A / 250 V
Derating	-5 % / K (> 60 °C, 196 ... 264 VAC); -2.5 % / K (> 50 °C, 85 ... 195 VAC)
Test voltage Pri.-Sec./Pri.-GND/Sec.-GND	4.2 kV DC / 2.2 kV DC / 0.7 kV DC
Protection class	I
Overvoltage protection	Varistor (input side); internal protective circuit, < 41 VDC (output side in case of an error)
Connectors	Input/Output/Signaling: WAGO 721 Series
Conductor range	Input/Output/Signaling 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input/Output/Signaling 8 ... 9 mm / 0.31 ... 0.35 inch
Mechanical Data	
Dimensions (mm) W x H x L	42 x 127 x 137.5 (incl. female connector), Length from upper-edge of DIN-35 rail
Weight	590 g
General Specifications	
Standards/Approvals	EN 60950-1, EN 61204-3, EN 60335-1, UL 60950-1, UL 508, GL

Input voltage derating	-2.5 % (< 100 VAC)
Input current I _i	1.25 A (230 VAC); 2.74 A (100 VAC)
Mains failure hold-up time	17 ms (230 VAC); 15 ms (100 VAC)
Output current I _o	10 A at 24 VDC
Residual ripple	50 mV (peak-to-peak) typ.
Current limitation	1.1 x I _o typ.
Signaling	DC OK contact; (Make contact, max. 30 VAC/DC, 1 A)
Efficiency	91 % (typ.)
Power loss P _v	6.6 W (230 VAC, no load); 24.4 W (230 VAC, nominal load)
Power loss P _v (max.)	31.3 W typ. (100 VAC / 24 VDC, 10 A)
Internal fuse	T 6.3 A / 250 V
Derating	-5 % / K (> 60 °C, 196 ... 264 VAC); -2.5 % / K (> 50 °C, 85 ... 195 VAC)
Test voltage Pri.-Sec./Pri.-GND/Sec.-GND	4.2 kV DC / 2.2 kV DC / 0.7 kV DC
Protection class	I
Overvoltage protection	Varistor (input side); internal protective circuit, < 40 VDC (output side in case of an error)
Connectors	Input/Output/Signaling: WAGO 721 Series
Conductor range	Input/Output/Signaling 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input/Output/Signaling 8 ... 9 mm / 0.31 ... 0.35 inch
Mechanical Data	
Dimensions (mm) W x H x L	55 x 127 x 172 (incl. female connector), Length from upper-edge of DIN-35 rail
Weight	930 g
General Specifications	
Standards/Approvals	EN 60950-1, EN 61204-3, UL 60950-1, UL 508, GL

Switched-Mode Power Supply, 1-Phase EPSITRON® CLASSIC Power 787 Series



Similar to pictured device



EPSITRON® Switched-Mode Power Supply,
CLASSIC Power, 1-phase,
output: 24 VDC / 20 A, TopBoost,
DC OK contact

Item No.	Pack. Unit
787-1634	1

Integrated TopBoost, enabling secondary-side protection via wire breakers

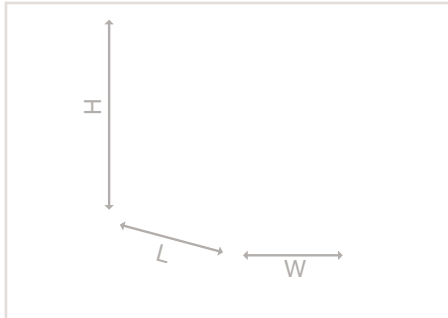
Electrical Data

Input voltage derating	-1.8 % (< 105 VAC)
Input current I_i	2.23 A (230 VAC); 5.56 A (100 VAC)
Mains failure hold-up time	20 ms (230 VAC); 8 ms (100 VAC)
Output current I_o	20 A at 24 VDC
Residual ripple	70 mV (peak-to-peak) typ.
Current limitation	1.1 x I_o typ.
Signaling	DC OK contact; (Make contact, max. 30 VAC/DC, 1 A)
Efficiency	92 % (typ.)
Power loss P_v	7.2 W (230 VAC, no load); 42.4 W (230 VAC, nominal load)
Power loss P_v (max.)	68.3 W typ. (100 VAC / 24 VDC, 20 A)
Internal fuse	T 10 A / 250 V
Derating	-5 % / K (> 60 °C, 196 ... 264 VAC); -2.5 % / K (> 50 °C, 85 ... 195 VAC)
Test voltage Pri.-Sec./Pri.-GND/Sec.-GND	4.2 kV DC / 2.2 kV DC / 0.7 kV DC
Protection class	I
Overvoltage protection	Varistor (input side); internal protective circuit, < 40 VDC (output side in case of an error)
Connectors	Input/Signaling: WAGO 721 Series Output: WAGO 831 Series
Conductor range	Input/Signaling: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Output: 0.5 ... 10 mm ² / 20 ... 8 AWG
Strip length	Input/Signaling: 8 ... 9 mm / 0.31 ... 0.35 inch Output: 13 ... 15 mm / 0.51 ... 0.59 inch
Mechanical Data	
Dimensions (mm) W x H x L	95 x 127 x 170 (incl. female connector), Length from upper-edge of DIN-35 rail
Weight	1600 g
General Specifications	
Standards/Approvals	EN 60950-1, EN 61204-3, UL 60950-1, UL 508, GL

Switched-Mode Power Supply, 1-Phase

EPSITRON® CLASSIC Power

787 Series



Features:

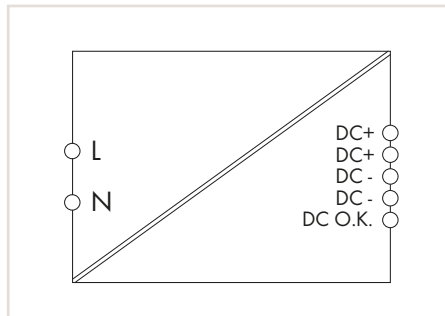
- Switched-Mode Power Supply unit
- Natural convection cooling when horizontally mounted
- Enclosed for use in switchgear cabinets
- Bounce-free switching signal (DC OK)
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) acc. to EN 60950-1/UL 60950-1; PELV acc. to EN 60204
- GL approval: also suitable for EMC 1 only in conjunction with 787-980 filter module (787-1633)

Technical Data

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 372 VDC
Frequency	44 ... 66 Hz; 0 Hz
Inrush current	< 30 A
Output	
Nominal output voltage $U_{o, \text{nom}}$	48 VDC, (SELV)
Output voltage range	40 ... 56 VDC adjustable
Factory preset	48 VDC
Adjustment accuracy	< 1 %
Current limitation	1.1 x I_o typ.
Overload behavior	Constant current
Operational indication	LED green (U_o)
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C; Device start at -40 °C type-tested
Storage temperature	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Degree of pollution	2 (acc. to EN 50178)
Climatic category	3K3 (acc. to EN 60721)
Safety and Protection	
Degree of protection	IP20 per EN 60529
Overvoltage category	II
Overvoltage protection	Varistor (input side); internal protective circuit, < 60 VDC (output side in case of an error)
Short-circuit-protection	Yes
No-load proof	Yes
Feedback voltage	Max. 63 VDC
Parallel operation	Yes
Series connection	Yes
MTBF	> 500,000 h (acc. to IEC 61709)
Connection and Type of Mounting	
Type of mounting	DIN-rail mounting (EN 60715)



Similar to pictured device

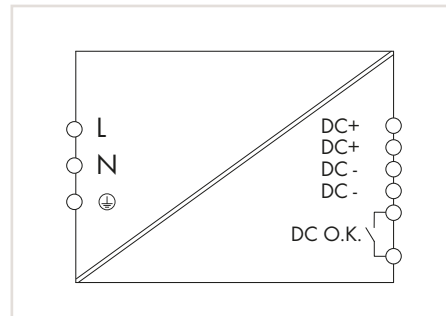


EPSITRON® Switched-Mode Power Supply,
CLASSIC Power, 1-phase,
output: 48 VDC / 2 A, DC OK contact

	Item No.	Pack. Unit
	787-1623	1



Similar to pictured device



EPSITRON® Switched-Mode Power Supply,
CLASSIC Power, 1-phase,
output: 48 VDC / 5 A, TopBoost, DC OK contact

	Item No.	Pack. Unit
	787-1633	1

Integrated TopBoost, enabling secondary-side protection via wire breakers,
Input voltage 100 ... 372 VDC possible!

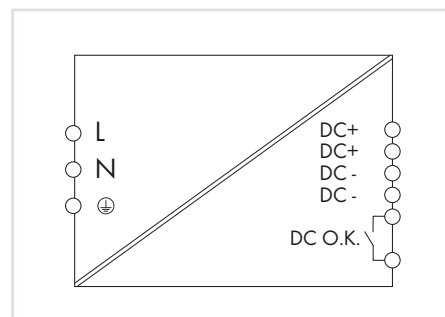
Electrical Data

Input voltage derating	-2.5 % (< 95 VAC)	-2.5 % (< 100 VAC)
Input current I _i	0.97 A (240 VAC); 1.84 A (100 VAC)	1.25 A (230 VAC); 2.74 A (100 VAC)
Discharge current		< 1 mA
Mains failure hold-up time	80 ms (230 VAC); 15 ms (100 VAC)	21 ms (230 VAC); 21 ms (100 VAC)
Output current I _o	2 A at 48 VDC (2.1 A up to 40 °C)	5 A at 48 VDC
Residual ripple	20 mV (peak-to-peak) typ.	30 mV (peak-to-peak) typ.
Signaling	1 x active signal output 48 VDC, 10 mA	DC OK contact; (Make contact, max. 30 VAC/DC, 1 A)
Efficiency	86 % (typ.)	92 % (typ.)
Power loss P _v	< 1 W (230 VAC, no load); 16.2 W (230 VAC, nominal load)	7 W (230 VAC, no load); 40.8 W (230 VAC, nominal load)
Power loss P _v (max.)	19.8 W typ. (100 VAC / 48 VDC, 2 A)	26.5 W typ. (100 VAC / 48 VDC, 5 A)
Internal fuse	T 4 A / 250 V	T 6.3 A / 250 V
External fuse	Circuit breakers 6 A, 10 A, 16 A, B or C characteristic; an external DC fuse is required for the DC input voltage.	Circuit breakers 10 A, 16 A, B or C characteristic; ; an external DC fuse is required for the DC input voltage.
Derating	-3 % / K (> 50 °C)	-5 % / K (>60 °C, 196 ... 264 VAC) -2.5 % / K (>50 °C, 85 ... 195 VAC)
Test voltage Pri.-Sec./Pri.-GND/Sec.-GND	4.2 kV (DC)	4.2 kV DC / 2.2 kV DC / 0.7 kV DC
Protection class	II	I
Connectors	Input/Output/Signaling: WAGO 721 Series	Input/Output/Signaling: WAGO 721 Series
Conductor range	Input/Output/Signaling 0.08 ... 2.5 mm ² / 28 ... 12 AWG	Input/Output/Signaling 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input/Output/Signaling 8 ... 9 mm / 0.31 ... 0.35 inch	Input/Output/Signaling 8 ... 9 mm / 0.31 ... 0.35 inch
Mechanical Data		
Dimensions (mm) W x H x L	52 x 90 x 119, Length from upper-edge of DIN-35 rail	55 x 127 x 172, Length from upper-edge of DIN-35 rail
Weight	385 g	930 g
General Specifications		
Standards/Approvals	EN 60950-1, EN 61204-3, EN 60335-1, UL 60950-1, UL 508, GL	EN 60950-1, EN 61204-3, UL 60950-1, UL 508, GL

Switched-Mode Power Supply, 1-Phase EPSITRON® CLASSIC Power 787 Series



Similar to pictured device



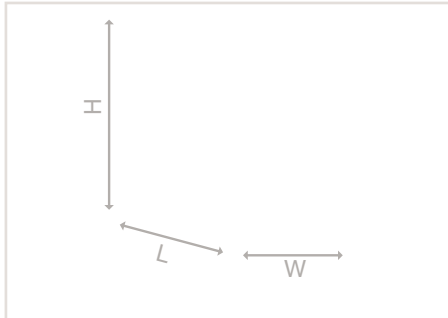
EPSITRON® Switched-Mode Power Supply,
CLASSIC Power, 1-phase,
output: 48 VDC / 10 A, TopBoost, DC OK contact

Item No.	Pack. Unit
787-1635	1

Integrated TopBoost, enabling secondary-side protection via wire breakers

Electrical Data	
Input voltage derating	-2.5 % (< 100 VAC)
Input current I_i	2.23 A (230 VAC); 5.56 A (100 VAC)
Discharge current	< 1 mA
Mains failure hold-up time	20 ms (230 VAC); 20 ms (100 VAC)
Output current I_o	10 A at 48 VDC
Residual ripple	80 mV (peak-to-peak) typ.
Signaling	DC OK contact; (Make contact, max. 30 VAC/DC, 1 A)
Efficiency	93 % (typ.)
Power loss P_V	11.7 W (230 VAC, no load); 36.3 W (230 VAC, nominal load)
Power loss P_V (max.)	64.9 W typ. (100 VAC / 48 VDC, 10 A)
Internal fuse	T 10 A / 250 V
External fuse	Circuit breakers 10 A, 16 A, B or C characteristic; an external DC fuse is required for the DC input voltage.
Derating	-5 % / K (>60 °C, 196 ... 264 VAC) -2.5 % / K (>50 °C, 85 ... 195 VAC)
Test voltage Pri.-Sec./Pri.-GND/Sec.-GND	4.2 kV DC / 2.2 kV DC / 0.7 kV DC
Protection class	I
Connectors	Input/Signaling: WAGO 721 Series Output: WAGO 831 Series
Conductor range	Input/Signaling: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Output: 0.5 ... 10 mm ² / 20 ... 8 AWG
Strip length	Input/Signaling: 8 ... 9 mm / 0.31 ... 0.35 inch Output: 13 ... 15 mm / 0.51 ... 0.59 inch
Mechanical Data	
Dimensions (mm) W x H x L	95 x 127 x 170, Length from upper-edge of DIN-35 rail
Weight	1600 g
General Specifications	
Standards/Approvals	EN 60950-1, EN 61204-3, UL 60950-1, UL 508, GL

Switched-Mode Power Supply, 1-/2-Phase EPSITRON® CLASSIC Power 787 Series

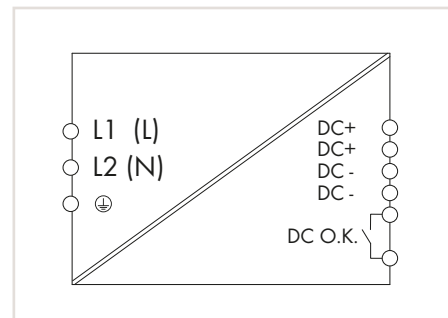
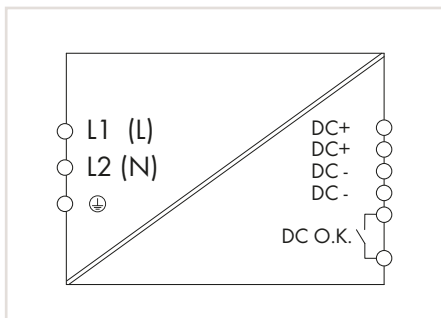


5 Features:

- Switched-mode power supply with TopBoost, enabling secondary-side protection via circuit breakers
- Natural convection cooling when horizontally mounted
- Enclosed for use in switchgear cabinets
- DC OK contact
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) acc. to EN 60950-1/UL 60950-1; PELV acc. to EN 60204

Technical Data

Input	
Nominal input voltage $U_{i, \text{nom}}$	1 x (2 x) 200 ... 500 VAC
Input voltage range	180 ... 550 VAC; 254 ... 780 VDC
Frequency	44 ... 66 Hz; 0 Hz
Inrush current	< 30 A, NTC
Output	
Nominal output voltage $U_{o, \text{nom}}$	24 VDC (SELV)
Output voltage range	23 ... 28.5 VDC adjustable
Factory preset	24 VDC
Adjustment accuracy	< 1 %
Residual ripple	30 mV (peak-to-peak) typ.
Current limitation	1.1 x I_o typ.
Overload behavior	Constant current
Operational indication	LED green (U_o)
Signaling	DC OK contact, make contact (max. 30 V / 1 A)
Fuse Protection	
External fuse	Circuit breakers 6 A, 10 A, 16 A, B or C characteristic an external DC fuse is required for the DC input voltage
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C Device start at -40 °C type-tested
Storage temperature	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Derating	-2.5 % / K (> 55 °C)
Safety and Protection	
Test voltage Pri.-Sec./Pri.-GND/Sec.-GND	4.2 kV DC / 2.2 kV DC / 0.7 kV DC
Protection class	I
Degree of protection	IP20 per EN 60529
Overvoltage protection	Varistor (input side); internal protective circuit, < 40 VDC (output side in case of an error)
Short-circuit-protection	Yes
No-load proof	Yes
Feedback voltage	Max. 35 VDC
Parallel operation	Yes
Series connection	Yes
MTBF	> 500,000 h (acc. to IEC 61709)
Connection and Type of Mounting	
Connectors	Input/Output/Signaling WAGO 721 Series
Conductor range	Input/Output/Signaling 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input/Output/Signaling 8 ... 9 mm / 0.31 ... 0.35 inch
Type of mounting	DIN-rail mounting (EN 60715)



EPSITRON® Switched-Mode Power Supply, CLASSIC Power, 2-phase, output: 24 VDC / 5 A, TopBoost, DC OK contact

Item No.	Pack. Unit
787-1628	1

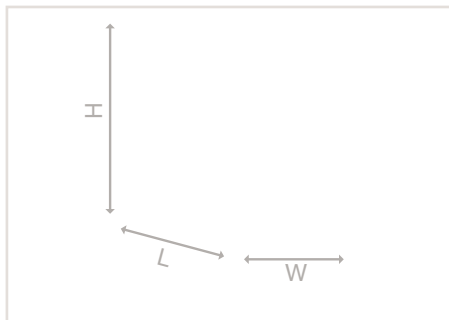
EPSITRON® Switched-Mode Power Supply, CLASSIC Power, 2-phase, output: 24 VDC / 10 A, TopBoost, DC OK contact

Item No.	Pack. Unit
787-1638	1

Electrical Data

Input voltage derating	-0.5 % (< 200 VAC); -0.4 % (< 280 VDC)	-0.5 % (< 200 VAC), -0.4 % (< 280 VDC)
Input current I _i	1.25 A (200 VAC); 0.67 A (500 VAC)	1.975 A (230 VAC); 1.36 A (400 VAC)
Mains failure hold-up time	126 ms (500 VAC); 15 ms (200 VAC)	78 ms (400 VAC); 20 ms (200 VAC)
Output current I _o	5 A at 24 VDC	10 A at 24 VDC
Efficiency	89 % (typ.)	89 % typ. (230 VAC); 92.5 % typ. (400 VAC)
Power loss P _v	0.94 W (no load); 16.36 W (230 VAC, nominal load) 14.55 W (400 VAC, nominal load)	1.3 W (no load) 27.8 W (230 VAC, nominal load) 20.3 W (400 VAC, nominal load)
Power loss P _v (max.)	18.2 W (200 VAC / 24 VDC, 5 A)	27.8 W (230 VAC / 24 VDC, 10 A)
Internal fuse	T 3.15 A / 500 V	T 6.3 A / 500 V
Mechanical Data		
Dimensions (mm) W x H x L	42 x 127 x 137, Length from upper-edge of DIN-35 rail	55 x 127 x 146.5, Length from upper-edge of DIN-35 rail
Weight	600 g	830 g
General Specifications		
Standards/Approvals	EN 60950-1, EN 61204-3, UL 60950-1, UL 508, GL * (* pending)	EN 60950-1, EN 61204-3, UL 60950-1*, UL 508*, GL * (* pending)

Switched-Mode Power Supply, 3-Phase EPSITRON® CLASSIC Power 787 Series

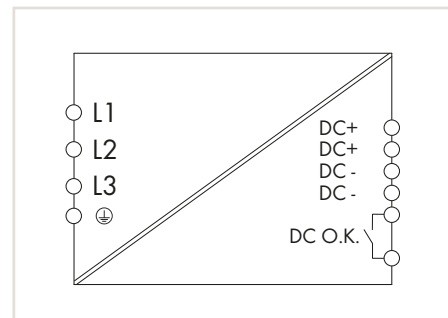
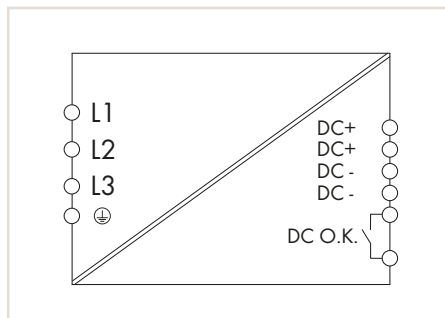


Features:

- Switched-mode power supply with TopBoost, enabling secondary-side protection via circuit breakers
- Natural convection cooling when horizontally mounted
- Enclosed for use in switchgear cabinets
- DC OK contact
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) acc. to EN 60950-1/UL 60950-1; PELV acc. to EN 60204

Technical Data

Input	
Nominal input voltage $U_{i, \text{nom}}$	3 x (2 x) 400 ... 500 VAC
Input voltage range	320 ... 575 VAC; 450 ... 800 VDC
Frequency	47 ... 63 Hz, 0 Hz
Inrush current	< 30 A, NTC
Output	
Nominal output voltage $U_{o, \text{nom}}$	24 VDC (SELV)
Output voltage range	23 ... 28.5 VDC adjustable
Factory preset	24 VDC
Adjustment accuracy	< 1 %
Current limitation	1.1 x I_o typ.
Overload behavior	Constant current
Operational indication	LED green (U_o)
Signaling	DC OK contact, Make contact (max. 30 V / 1 A)
Fuse Protection	
Internal fuse	None
External fuse	3 x circuit breakers 10 A, 16 A, characteristic B or C; or motor circuit breakers; an external DC fuse is required for the DC input voltage
General Specifications	
Standards/Approvals	EN 60950-1, EN 61204-3, UL 60950-1, UL 508, GL * (* pending)
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C Device start at -40 °C type-tested
Storage temperature	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Derating	-2.5 % / K (> 55 °C)
Safety and Protection	
Test voltage Pri.-Sec./Pri.-GND/Sec.-GND	4.2 kV DC / 2.2 kV DC / 0.7 kV DC
Protection class	I
Degree of protection	IP20 per EN 60529
Short-circuit-protection	Yes
No-load proof	Yes
Feedback voltage	Max. 35 VDC
Parallel operation	Yes
Series connection	Yes
MTBF	> 500,000 h (acc. to IEC 61709)
Connection and Type of Mounting	
Type of mounting	DIN-rail mounting (EN 60715)



EPSITRON® Switched-Mode Power Supply,
CLASSIC Power, 3-phase,
output: 24 VDC / 10 A, TopBoost,
DC OK contact

Item No.	Pack. Unit
787-1640	1

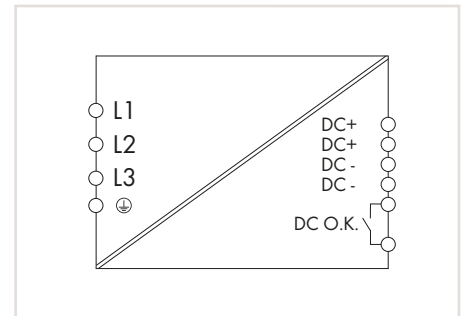
EPSITRON® Switched-Mode Power Supply,
CLASSIC Power, 3-phase,
output: 24 VDC / 20 A, TopBoost,
DC OK contact

Item No.	Pack. Unit
787-1642	1

Electrical Data

Input current I_i	3 x 0.73 A (400 VAC); 3 x 0.66 A (500 VAC)	3 x 1.21 A (400 VAC); 3 x 1.03 A (500 VAC)
Mains failure hold-up time	50 ms (500 VAC); 21 ms (400 VAC)	25 ms (500 VAC); 15 ms (400 VAC)
Output current I_o	10 A at 24 VDC	20 A at 24 VDC
Residual ripple	50 mV (peak-to-peak) typ.	15 mV (peak-to-peak) typ.
Efficiency	90 % (typ.)	92 % (typ.)
Power loss P_v	2.1 W (no load); 27.9 W (400 VAC, nominal load)	5.8 W (no load); 42.8 W (400 VAC, nominal load)
Power loss P_v (max.)	28.3 W (500 VAC / 24 VDC, 10 A)	47.6 W (500 VAC / 24 VDC, 20 A)
Overvoltage protection	Varistor (input side); internal protective circuit, < 41 VDC (output side in case of an error)	Varistor (input side); internal protective circuit, < 40 VDC (output side in case of an error)
Connectors	Input/Output/Signaling WAGO 721 Series	Input/Signaling: WAGO 721 Series Output: WAGO 831 Series
Conductor range	Input/Output/Signaling 0.08 ... 2.5 mm ² / 28 ... 12 AWG	Input/Signaling: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Output: 0.5 ... 10 mm ² / 20 ... 8 AWG
Strip length	Input/Output/Signaling 8 ... 9 mm / 0.31 ... 0.35 inch	Input/Signaling: 8 ... 9 mm / 0.31 ... 0.35 inch Output: 13 ... 15 mm / 0.51 ... 0.59 inch
Mechanical Data		
Dimensions (mm) W x H x L	55 x 127 x 171, Length from upper-edge of DIN-35 rail	80 x 127 x 180, Length from upper-edge of DIN-35 rail
Weight	1000 g	1500 g

Switched-Mode Power Supply, 3-Phase EPSITRON® CLASSIC Power 787 Series



EPSITRON® Switched-Mode Power Supply,
CLASSIC Power, 3-phase,
output: 24 VDC / 40 A, TopBoost,
DC OK contact

Item No.	Pack. Unit
787-1644	1

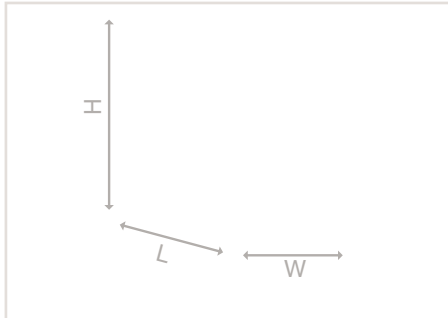
Electrical Data

Input current I_i	3 x 2.15 A (400 VAC); 3 x 1.82 A (500 VAC)
Mains failure hold-up time	25 ms (500 VAC); 15 ms (400 VAC)
Output current I_o	40 A at 24 VDC
Residual ripple	30 mV (peak-to-peak) typ.
Efficiency	92 % (typ.)
Power loss P_V	4.2 W (no load); 83.9 W (400 VAC, nominal load)
Power loss P_V (max.)	83.9 W (500 VAC / 24 VDC, 40 A)
Overvoltage protection	Varistor (input side); internal protective circuit, < 40 VDC (output side in case of an error)
Connectors	Input/Signaling: WAGO 721 Series Output: WAGO 831 Series
Conductor range	Input/Signaling: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Output: 0.5 ... 10 mm ² / 20 ... 8 AWG
Strip length	Input/Signaling: 8 ... 9 mm / 0.31 ... 0.35 inch Output: 13 ... 15 mm / 0.51 ... 0.59 inch
Mechanical Data	
Dimensions (mm) W x H x L	126 x 127 x 198, Length from upper-edge of DIN-35 rail
Weight	2800 g

Switched-Mode Power Supply, 1-Phase

EPSITRON® ECO Power

787 Series

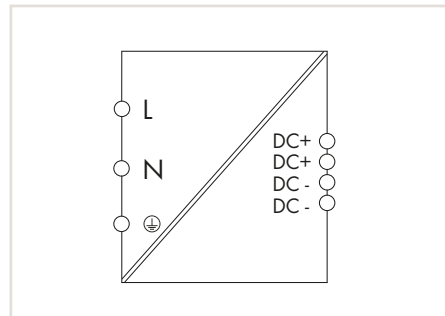
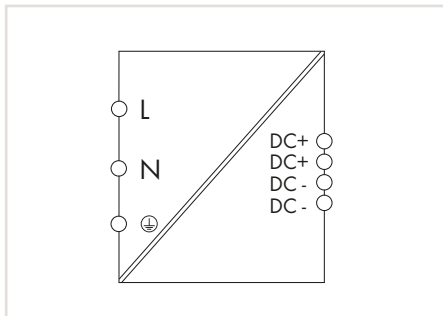


Features:

- Switched-Mode Power Supply unit
- Natural convection cooling when horizontally mounted
- Enclosed for use in switchgear cabinets
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) acc. to EN 60950-1/UL 60950-1; PELV acc. to EN 60204

Technical Data

Input	
Nominal input voltage $U_{i, \text{nom}}$	110 ... 240 VAC
Frequency	47 ... 63 Hz
Output	
Nominal output voltage $U_{o, \text{nom}}$	24 VDC (SELV)
Output voltage range	22 ... 28 VDC adjustable
Factory preset	24 VDC
Adjustment accuracy	1 %
Overload behavior	Constant power (in overload range: 1.15 ... 1.4 x I_o), shutdown and automatic restart in the event of a short circuit
Operational indication	LED green (24 VDC OK) LED red (overload)
Environmental Requirements	
Relative humidity	95 % (no condensation permissible)
Degree of pollution	2 (acc. to EN 50178)
Climatic category	3K3 (acc. to EN 60721)
Safety and Protection	
Test voltage Pri.-Sec./Pri.-GND/Sec.-GND	3 kV AC / 1.5 kV AC / 0.5 kV AC
Protection class	I
Degree of protection	IP20 per EN 60529
Overvoltage category	II
Overvoltage protection	Via varistor at primary circuit
Short-circuit-protection	Yes
No-load proof	Yes
Parallel operation	Yes
Series connection	Yes



EPSITRON® Switched-Mode Power Supply, ECO Power, 1-phase, output: 24 VDC / 2.5 A

Item No.	Pack. Unit
787-712	1

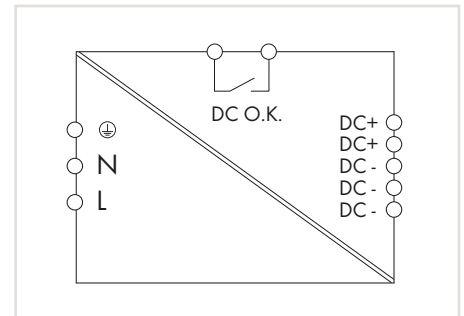
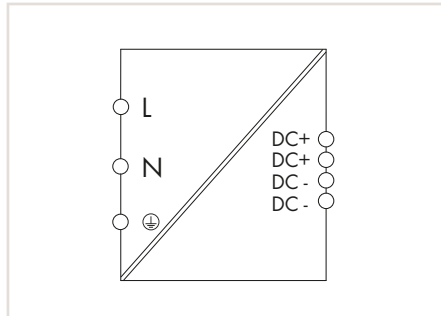
EPSITRON® Switched-Mode Power Supply, ECO Power, 1-phase, output: 24 VDC / 5 A, active power factor correction

Item No.	Pack. Unit
787-722	1

Electrical Data

Input voltage range	85 ... 264 VAC; 130 ... 373 VDC	85 ... 264 VAC; 130 ... 373 VDC
Input current I _i	0.7 A at 230 VAC; 1.2 A at 115 A AC	1.0 A at 230 VAC; 2.0 A at 115 VAC
Discharge current	< 1 mA	< 3.5 mA
Inrush current	< 30 A at 230 VAC; < 15 A at 115 VAC	< 30 A at 230 VAC; < 25 A at 115 VAC
Mains failure hold-up time	> 20 ms at 230 VAC	> 20 ms at 230 VAC
Power factor	> 0.5 at 230 VAC	> 0.94 at 230 VAC; > 0.98 at 115 VAC
Output current I _o	2.5 A at 24 VDC	5 A at 24 VDC
Residual ripple	< 100 mV (peak-to-peak)	< 100 mV (peak-to-peak)
Efficiency	86 % typ. at 230 VAC	86 % typ. at 230 VAC
Power loss P _v	8.3 W (at 230 VAC and 2.5 ADC)	19.5 W (at 230 VAC and 5 ADC)
Power loss P _v (max.)	11.5 W (at 110 VAC and 2.75 ADC)	23.5 W (at 110 VAC and 5.5 ADC)
Internal fuse	F 2.5 A / 250 V	F 3.15 A / 250 V
External fuse	Circuit breakers 10 A, 16 A, B or C characteristic;; an external DC fuse is required for the DC input voltage.	Circuit breakers 10 A, 16 A, B or C characteristic;; an external DC fuse is required for the DC input voltage.
Ambient operating temperature	-10 ... +70 °C	-10 ... +60 °C
Storage temperature	-25 ... +85 °C	-25 ... +85 °C
Derating	-3.3 % / K (>50 °C at 230 VAC)	-5.33 % / K (>45 °C at 230 VAC)
Feedback voltage	28 VDC	28 VDC
MTBF	480,000 h (acc. IEC 61709)	480,000 h (acc. IEC 61709)
Connectors	CAGE CLAMP® (WAGO 745 Series)	CAGE CLAMP® (WAGO 745 Series)
Conductor range	0.08 ... 4 mm ² / 28 ... 12 AWG (12 AWG: THHN, THWN)	0.08 ... 4 mm ² / 28 ... 12 AWG (12 AWG: THHN, THWN)
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch	8 ... 9 mm / 0.31 ... 0.35 inch
Type of mounting	DIN-rail mounting (EN 60715)	DIN-rail mounting (EN 60715)
Mechanical Data		
Dimensions (mm) W x H x L	50 x 92 x 136, Length from upper-edge of DIN-35 rail	75 x 92 x 136, Length from upper-edge of DIN-35 rail
Weight	596 g	850 g
General Specifications:		
Standards/Approvals	EN 60950, EN 61000-6-2, EN 61000-6-3, UL 60950, UL 508, ANSI/ISA 12.12.01 (Class I Division 2), ATEX, IEC Ex	EN 60950, EN 61000-6-2, EN 61000-6-3, UL 60950, UL 508, ANSI/ISA 12.12.01 (Class I Division 2), ATEX, IEC Ex

Switched-Mode Power Supply, 1-Phase EPSITRON® ECO Power 787 Series



EPSITRON® Switched-Mode Power Supply,
ECO Power, 1-phase, output: 24 VDC / 10 A,
active power factor correction

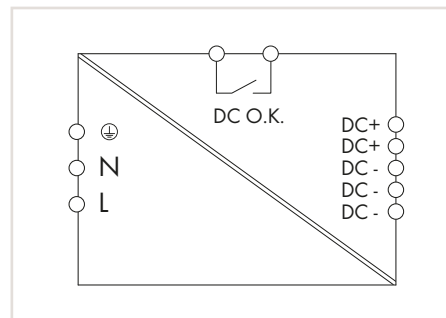
	Item No.	Pack. Unit
	787-732	1

EPSITRON® Switched-Mode Power Supply,
ECO Power, 1-phase, output: 24 VDC / 20 A,
active power factor correction

	Item No.	Pack. Unit
	787-734	1

Electrical Data

Input voltage range	85 ... 264 VAC; 130 ... 373 VDC	85 ... 264 VAC; 130 ... 373 VDC
Input current I _i	1.5 A typ. at 230 VAC; 3.0 A at 115 VAC	3 A typ. at 230 VAC; 6.3 A at 115 VAC
Discharge current	< 3.5 mA	< 2 mA
Inrush current	< 30 A at 230 VAC; < 25 A at 115 VAC	< 30 A at 230 VAC; < 25 A at 115 VAC
Mains failure hold-up time	> 20 ms at 230 VAC	> 20 ms at 230 VAC
Power factor	> 0.94 at 230 VAC > 0.98 at 115 VAC	> 0.94 at 230 VAC > 0.98 at 115 VAC
Output current I _o	10 A at 24 VDC	20 A at 24 VDC
Residual ripple	< 100 mV (peak-to-peak)	< 100 mV (peak-to-peak)
Signaling	–	DC OK contact; Make contact (max. 31.2 V / 20 mA)
Efficiency	86 % typ. at 230 VAC	90 % (typ.)
Power loss P _v	37.5 W (at 230 VAC and 10 ADC)	65 W (230 VAC, nominal load)
Power loss P _v (max.)	53 W (at 110 VAC and 11 ADC)	107 W typ. (110 VAC / 24 VDC, 23 A)
Internal fuse	F 5 A / 250 V	T 10 A / 250 V
External fuse	Circuit breakers 10 A, 16 A, B or C characteristic;; an external DC fuse is required for the DC input voltage.	Circuit breakers 10 A, 16 A, B or C characteristic;; an external DC fuse is required for the DC input voltage.
Ambient operating temperature	-10 ... +70 °C	-25 ... +70 °C
Storage temperature	-25 ... +85 °C	-25 ... +85 °C
Derating	-2.33 % / K (>55 °C at 230 VAC)	see instruction manual
Feedback voltage	28 VDC	29 VDC
MTBF	480,000 h (acc. IEC 61709)	> 250,000 h (per IEC 61709)
Connectors	CAGE CLAMP® (WAGO 745 Series)	Input/Signaling: WAGO 2706 Series Output: WAGO 2716 Series
Conductor range	0.08 ... 4 mm ² / 28 ... 12 AWG (12 AWG: THHN, THWN)	Input/Signaling: 0.5 ... 6 mm ² / 20 ... 10 AWG Output: 1.5 ... 16 mm ² / 16 ... 6 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch	Input/Signaling: 11 ... 12 mm / 0.43 ... 0.47 inch Output: 12 ... 13 mm / 0.47 ... 0.51 inch
Type of mounting	DIN-rail mounting (EN 60715)	DIN-rail-mount (DIN EN 50022)
Mechanical Data		
Dimensions (mm) W x H x L	110 x 92 x 136 (incl. female connector), Length from upper-edge of DIN-35 rail	115 x 136 x 144, Length from upper-edge of DIN- 35 rail
Weight	1200 g	2400 g
General Specifications		
Standards/Approvals	EN 60950, EN 61000-6-2, EN 61000-6-3, UL 60950, UL 508, ANSI/ISA 12.12.01 (Class I Division 2), ATEX, IEC Ex	EN 60950, EN 61000-6-2, EN 61000-6-3, UL 60950, UL 508



EPSITRON® Switched-Mode Power Supply, ECO Power, 1-phase, output: 24 VDC / 40 A, active power factor correction

Item No.	Pack. Unit
787-736	1

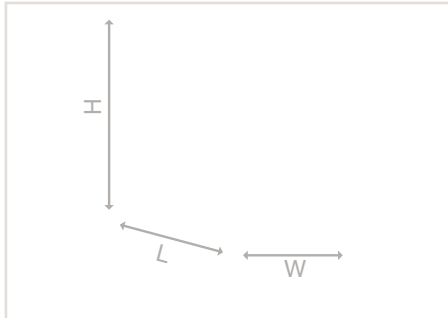
Electrical Data

Input voltage range	90 ... 264 VAC; 130 ... 373 VDC
Input current I_i	< 6 A at 230 VAC; < 12 A at 115 VAC
Discharge current	< 2 mA
Inrush current	< 30 A at 230 VAC; < 25 A at 115 VAC
Mains failure hold-up time	> 17 ms at 230 VAC
Power factor	> 0.94 at 230 VAC > 0.98 at 115 VAC
Output current I_o	40 A at 24 VDC
Residual ripple	< 100 mV (peak-to-peak)
Signaling	DC OK contact; Make contact (max. 31.2 V / 20 mA)
Efficiency	90 % (typ.)
Power loss P_v	107 W at 230 VAC / nominal load
Internal fuse	T 20 A / 250 V
External fuse	Circuit breakers 13 A, 16 A, 20 A; B or C characteristic;; an external DC fuse is re- quired for the DC input voltage.
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-40 ... +85 °C
Derating	-2.66 % / K (> 55 °C); -2 % / V ($U_i < 100$ VAC)
Feedback voltage	29 VDC
MTBF	> 250,000 h (per IEC 61709)
Connectors	Input/Signaling: WAGO 2706 Series Output: WAGO 2716 Series
Conductor range	Input/Signaling: 0.5 ... 6 mm ² / 20 ... 10 AWG Output: 1.5 ... 16 mm ² / 16 ... 6 AWG
Strip length	Input/Signaling: 11 ... 12 mm / 0.43 ... 0.47 inch Output: 12 ... 13 mm / 0.47 ... 0.51 inch
Type of mounting	DIN-rail-mount (DIN EN 50022)
Mechanical Data	
Dimensions (mm) W x H x L	170 x 136 x 150, Length from upper-edge of DIN- 35 rail
Weight	3500 g
General Specifications	
Standards/Approvals	EN 60950, EN 61000-6-2, EN 61000-6-4, UL 60950, UL 508

Switched-Mode Power Supply, 1-Phase

EPSITRON® ECO Power

787 Series

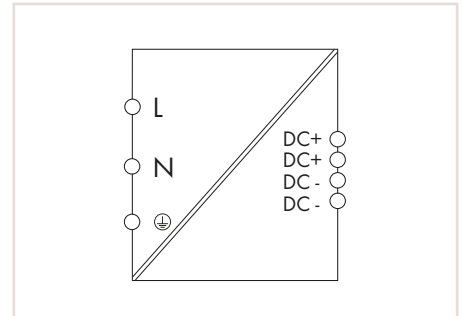
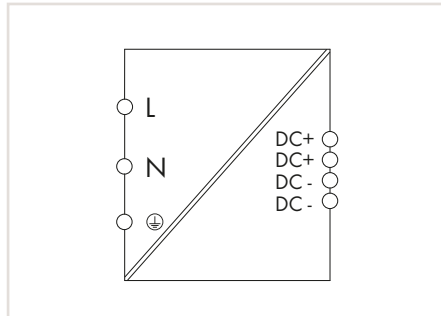


Features:

- Switched-Mode Power Supply unit
- Natural convection cooling when horizontally mounted
- Enclosed for use in switchgear cabinets
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) acc. to EN 60950-1/UL 60950-1 and EN 60335-1; PELV acc. to EN 60204
- DIN-35 rail mountable in different positions
- Direct installation on mounting plate via cable grip

Technical Data

Input	
Nominal input voltage $U_{i, \text{nom}}$	(100) 110 ... 240 VAC
Input voltage range	90 ... 264 VAC; 125 ... 375 VDC
Frequency	47 ... 63 Hz
Discharge current	< 3.5 mA
Inrush current	< 18 A
Mains failure hold-up time	> 10 ms at 230 VAC
Output	
Nominal output voltage $U_{o, \text{nom}}$	24 VDC (SELV)
Output voltage range	22 ... 26 VDC adjustable
Factory preset	24 VDC
Adjustment accuracy	< 1 %
Residual ripple	< 200 mV (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.05 ... 1.4 x I_o), shutdown and automatic restart in the event of a short circuit
Operational indication	LED green (24 VDC OK)
Fuse Protection	
External fuse	Circuit breaker B6, B10; an external DC fuse is required for the DC input voltage.
General Specifications	
Standards/Approvals	EN 60950, EN 61204-3, EN 60335, UL 60950 *, UL 508 *, (*pending)
Environmental Requirements	
Ambient operating temperature	-20 ... +60 °C
Storage temperature	-25 ... +70 °C
Relative humidity	10 ... 95 % (no condensation permissible)
Overvoltage category	II
Degree of pollution	2 (acc. to EN 50178)
Climatic category	3K3 (acc. to EN 60721)
Safety and Protection	
Test voltage Pri.-Sec./Pri.-GND/Sec.-GND	3 kV AC / 1.5 kV AC / 0.5 kV AC
Protection class	I
Degree of protection	IP20 per EN 60529
Overvoltage protection	Via varistor at primary circuit
Short-circuit-protection	Yes
No-load proof	Yes
Feedback voltage	30 VDC
Parallel operation	Yes
Series connection	Yes
MTBF	> 300,000 h (acc. IEC 61709)
Connection and Type of Mounting	
Connectors	CAGE CLAMP® (WAGO 236 Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG (12 AWG: THHN, THWN)
Strip length	6 ... 7 mm / 0.24 ... 0.28 inch
Type of mounting	DIN-rail mounting (EN 60715)



EPSITRON® Switched-Mode Power Supply, ECO Power, 1-phase, output: 24 VDC / 1.25 A

Item No.	Pack. Unit
787-1702	1

EPSITRON® Switched-Mode Power Supply, ECO Power, 1-phase, output: 24 VDC / 2.5 A

Item No.	Pack. Unit
787-1712	1

5

Electrical Data

Input current I_i	0.3 ms typ. at 230 VAC; 0.6 A typ. at 115 VAC
Output current I_o	1.25 A at 24 VDC and 110 ... 240 VAC 1 A at 24 VDC and 100 ... 240 VAC
Efficiency	> 87 % (at 230 VAC and 1.25 ADC)
Derating	-4 % / K (> 45 °C)
Internal fuse	F 1 A / 250 V

Mechanical Data

Dimensions (mm) W x H x L	30 x 90 x 99, Length from upper-edge of DIN-35 rail
Weight	250 g
Installation width (as delivered)	30 mm

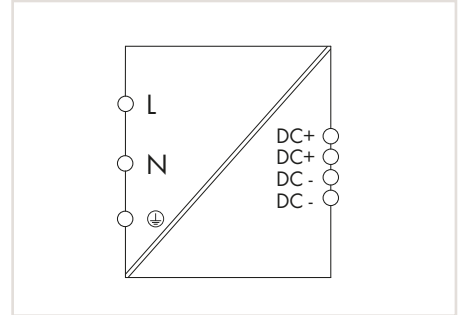
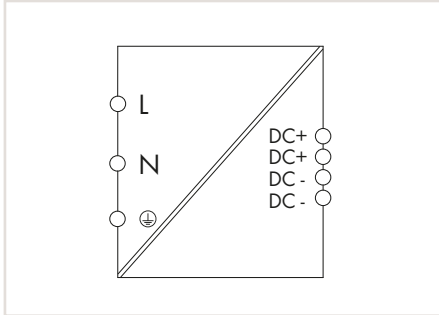
Input current I_i	0.6 ms typ. at 230 VAC; 1.2 A typ. at 115 VAC
Output current I_o	2.5 A at 24 VDC and 110 ... 240 VAC 2 A at 24 VDC and 100 ... 240 VAC
Efficiency	> 88 % (at 230 VAC and 2.5 ADC)
Derating	-4 % / K (> 45 °C)
Internal fuse	F 2 A / 250 V

Dimensions (mm) W x H x L	40 x 90 x 99, Length from upper-edge of DIN-35 rail
Weight	300 g
Installation width (as delivered)	40 mm

Switched-Mode Power Supply, 1-Phase

EPSITRON® ECO Power

787 Series



EPSITRON® Switched-Mode Power Supply, ECO Power, 1-phase, output: 24 VDC / 5 A

Item No.	Pack. Unit
787-1722	1

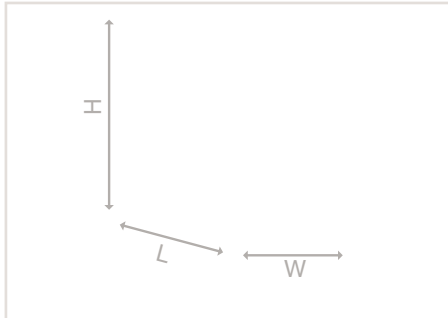
EPSITRON® Switched-Mode Power Supply, ECO Power, 1-phase, output: 24 VDC / 10 A

Item No.	Pack. Unit
787-1732	1

Electrical Data

Input current I_i	1.0 ms typ. at 230 VAC; 2.0 A typ. at 115 VAC	2.0 ms typ. at 230 VAC; 4.0 A typ. at 115 VAC
Output current I_o	5 A at 24 VDC and 110 ... 240 VAC 4 A at 24 VDC and 100 ... 240 VAC	10 A at 24 VDC and 110 ... 240 VAC 8 A at 24 VDC and 100 ... 240 VAC
Efficiency	> 88 % (at 230 VAC and 5 ADC)	> 91 % (at 230 VAC and 10 ADC)
Derating	-3 % / K (> 45 °C)	-4 % / K (> 45 °C)
Internal fuse	F 3.15 A / 250 V	F 5 A / 250 V
Mechanical Data		
Dimensions (mm) W x H x L	60 x 130 x 90, Length from upper-edge of DIN-35 rail	70 x 165 x 99, Length from upper-edge of DIN-35 rail
Weight	550 g	840 g
Installation width (as delivered):	60 mm	70 mm

Switched-Mode Power Supply, 3-Phase EPSITRON® ECO Power 787 Series

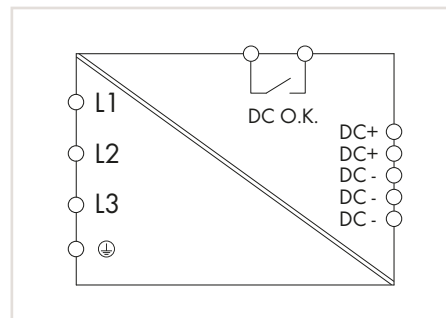
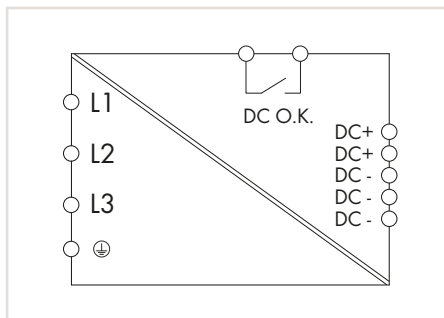


Features:

- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Fast and tool-free termination via lever-actuated terminal blocks
- DC OK contact
- Parallel operation
- Electrically isolated output voltage (SELV) acc. to EN 60950-1/UL 60950-1; PELV acc. to EN 60204

Technical Data

Input	
Nominal input voltage $U_{i, \text{nom}}$	3 x (2 x) AC 400 V
Input voltage range	360 ... 460 VAC; 500 ... 650 VDC (no damage up to 575 VAC/800 VDC under normal conditions)
Frequency	47 ... 63 Hz
Power factor	≥ 0.5
Discharge current	< 3.5 mA
Mains failure hold-up time	> 17 ms at 3 x 400 VAC
Output	
Nominal output voltage $U_{o, \text{nom}}$	24 VDC (SELV)
Output voltage range	22 ... 28 VDC adjustable
Factory preset	24 VDC
Adjustment accuracy	< 1 %
Residual ripple	< 100 mV (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.15 ... 1.4 x I_o); shutdown and automatic restart in the event of a short circuit
Operational indication	LED green (U_o); LED red (overload)
Signaling	DC OK contact; Make contact (max. 31.2 V / 20 mA)
Fuse Protection	
External fuse	3 x circuit breakers ≥ 6 A, B or C characteristic; or motor circuit breakers; an external DC fuse is required for the DC input voltage.
General Specifications	
Standards/Approvals	EN 60950, EN 61204-3 (Class A), UL 60950, UL 508
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-40 ... +85 °C
Relative humidity	10 ... 95 % (no condensation permissible)
Degree of pollution	2 (acc. to EN 50178)
Climatic category	3K3 (acc. to EN 60721)
Safety and Protection	
Test voltage PRI.-SEC./PRI.-GND./SEC.-GND./SEC. DC OK	3 kV AC / 1.5 kV AC / 0.5 kV AC / 0.5 kV AC
Protection class	I
Degree of protection	IP20 per EN 60529
Overvoltage category	II
Overvoltage protection	Yes
Short-circuit-protection	Yes
No-load proof	Yes
Feedback voltage	30 V
Parallel operation	Yes
Series connection	Yes
MTBF	> 250,000 h (per IEC 61709)
Connection and Type of Mounting	
Connectors	Input/Output: WAGO 2706 Series Signaling: WAGO 2091 Series
Conductor range	Input/Output: 0.5 ... 6 mm ² / 20 ... 10 AWG Signaling: 0.2 ... 1.5 mm ² / 24 ... 14 AWG
Strip length	Input/Output: 11 ... 12 mm / 0.43 ... 0.47 inch Signaling: 8 ... 9 mm / 0.31 ... 0.35 inch
Type of mounting	DIN-rail mounting (EN 60715)



EPSITRON® Switched-Mode Power Supply, ECO Power, 3-phase, output: 24 VDC / 6.25 A, DC OK contact

	Item No.	Pack. Unit
	787-738	1

EPSITRON® Switched-Mode Power Supply, ECO Power, 3-phase, output: 24 VDC / 10 A, DC OK contact

	Item No.	Pack. Unit
	787-740	1

Electrical Data

Input current I_i	3 x 0.6 A at 400 VAC and 6.25 ADC
Inrush current	< 25 A
Output current I_o	6.25 A at 24 VDC
Efficiency	87 % typ.
Power loss P_v	18.5 W
Power loss P_v (max.)	20 W
Internal fuse	3 x T 2 A / 250 V
Derating	-2.5 % / K (> +50 °C; 400 VAC)

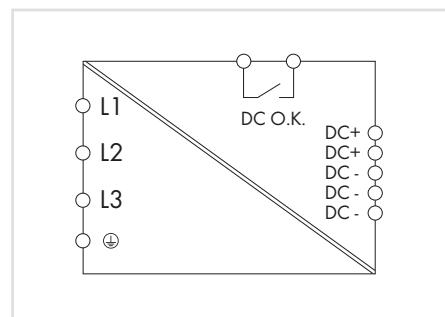
Mechanical Data

Dimensions (mm) W x H x L	50 x 130 x 92, Length from upper-edge of DIN-35 rail
Weight	730 g

Input current I_i	3 x 1.2 A at 400 VAC and 10 ADC
Inrush current	< 25 A
Output current I_o	10 A at 24 VDC
Efficiency	89 % (typ.)
Power loss P_v	32.5 W
Power loss P_v (max.)	36 W
Internal fuse	3 x T 2 A / 250 V
Derating	-1.25 % / K (> +50 °C; 400 VAC)

Dimensions (mm) W x H x L	65 x 130 x 130, Length from upper-edge of DIN-35 rail
Weight	1130 g

Switched-Mode Power Supply, 3-Phase EPSITRON® ECO Power 787 Series



EPSITRON® Switched-Mode Power Supply,
ECO Power, 3-phase, output: 24 VDC / 20 A,
DC OK contact

Item No.	Pack. Unit
787-742	1

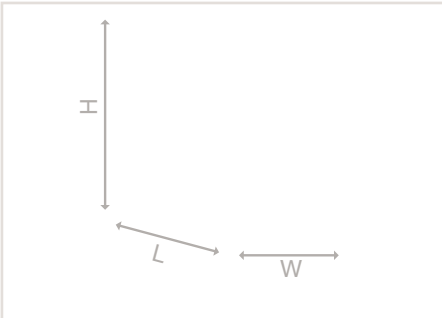
Electrical Data

Input current I_i	3 x 2.0 A at 400 VAC and 20 ADC
Inrush current	< 30 A
Output current I_o	20 A at 24 VDC
Efficiency	90 % (typ.)
Power loss P_v	50 W
Power loss P_v (max.)	55 W
Internal fuse	3 x T 5 A / 250 V
Derating	-2 % / K (> +50 °C; 400 VAC)

Mechanical Data

Dimensions (mm) W x H x L	110 x 130 x 151, Length from upper-edge of DIN-35 rail
Weight	1930 g

Switched-Mode Power Supply, 1-Phase EPSITRON® COMPACT Power 787 Series

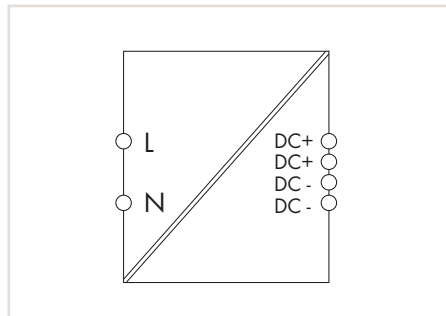
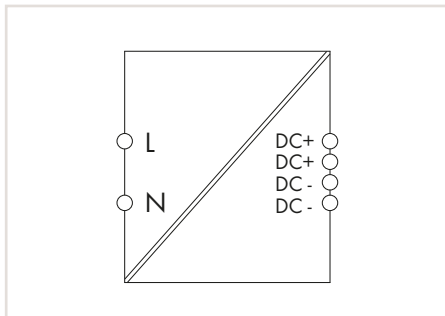


Features:

- Switched-Mode Power Supply unit
- Stepped profile for installation in standard distribution boards
- Pluggable *picoMAX*® connection technology (tool-free)
- Electrically isolated output voltage (SELV) acc. to EN 60950-1/UL 60950-1; PELV acc. to EN 60204
- Suitable for both parallel and series operation

Technical Data

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC, 120 ... 373 VDC
Frequency	44 ... 66 Hz; 0 Hz
Inrush current	< 30 A, NTC
Output	
Nominal output voltage $U_{o, \text{nom}}$	24 VDC (SELV)
Output voltage range	22.8 ... 26.4 VDC adjustable
Factory preset	24 VDC
Adjustment accuracy	< 2 %
Residual ripple	< 100 mV (peak-to-peak)
Current limitation	1.1 x I_o , typ.
Overload behavior	Constant current
Operational indication	LED green (U_o)
Fuse Protection	
Internal fuse	T 2 A / 250 V
External fuse	Circuit breakers 6 A, 10 A, 16 A, B or C characteristic; an external DC fuse is required for the DC input voltage.
General Specifications	
Standards/Approvals	EN 60950-1, EN 61204-3, UL 60950-1, UL 508, GL* (* pending)
Environmental Requirements	
Ambient operating temperature	-25 ... +60 °C (UL: -25 ... +55 °C); Device start at -40 °C type-tested
Storage temperature	-25 ... +80 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Derating	-3 % / K (> 45 °C)
Degree of pollution	2 (acc. to EN 50178)
Climatic category	3K3 (acc. to EN 60721)
Safety and Protection	
Enclosure	Plastic, light gray, Flammability class V0 acc. to UL94
Test voltage PRI-SEC	4.2 kV (DC)
Protection class	II
Degree of protection	IP20 per EN 60529
Overvoltage category	II
Overvoltage protection	< 40 VDC (in the event of a fault)
Short-circuit-protection	Yes
No-load proof	Yes
Feedback voltage	Max. 30 VDC
Parallel operation	Yes
Series connection	Yes
MTBF	> 500,000 h
Connection and Type of Mounting	
Connectors	Input/Output: <i>picoMAX</i> ® (WAGO 2092 Series)
Conductor range	Input/Output: 0.2 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input/Output: 9 ... 10 mm / 0.35 ... 0.39 inch
Type of mounting	DIN-rail mounting (EN 60715)



EPSITRON® Switched-Mode Power Supply, COMPACT Power, 1-phase, output: 24 VDC / 1.3 A

Item No.	Pack. Unit
787-1102	1

EPSITRON® Switched-Mode Power Supply, COMPACT Power, 1-phase, output: 24 VDC / 2.5 A

Item No.	Pack. Unit
787-1112	1

Electrical Data

Input voltage derating	I_o max. 1 A (< 100 VAC)
Input current I_i	0.7 A at 110 VAC / 0.5 A at 230 VAC
Mains failure hold-up time	> 10 ms at 110 VAC; > 80 ms at 230 VAC
Output current I_o	1.3 A at 24 VDC; Max. 0.9 A in any mounting position
Efficiency	82 % (typ.)
Power loss P_v	2.6 W (230 VAC, no load); 7.0 W (230 VAC, nominal load)
Power loss P_v (max.)	7.3 W typ. (100 VAC / 24 VDC, 1.3 A)

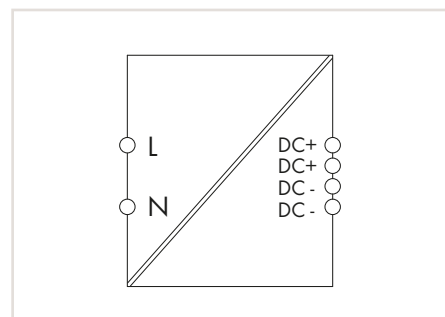
Mechanical Data

Dimensions (mm) W x H x L	54 x 89 x 59, Length: 55 mm from upper-edge of DIN-35 rail
Weight	170 g

I_o max. 2 A (< 100 VAC); I_o max. 1.8 A (< 90 VAC)
1.4 A at 110 VAC / 0.6 A at 230 VAC
> 10 ms at 110 VAC; > 80 ms at 230 VAC
2.5 A at 12 VDC Max. 1.6 A in any mounting position
88 % (typ.)
2.2 W (230 VAC, no load); 8.5 W (230 VAC, nominal load)
10.5 W typ. (100 VAC / 12 VDC, 2.5 A)

72 x 89 x 59, Length: 55 mm from upper-edge of DIN-35 rail
240 g

Switched-Mode Power Supply, 1-Phase EPSITRON® COMPACT Power 787 Series



EPSITRON® Switched-Mode Power Supply,
COMPACT Power, 1-phase,
output: 24 VDC / 4 A

Item No.	Pack. Unit
787-1122	1

Electrical Data

Input voltage derating	I_o max. 3.5 A (< 100 VAC); I_o max. 3 A (< 90 VAC)
Input current I_i	1.6 A at 110 VAC / 0.9 A at 230 VAC
Mains failure hold-up time	> 15 ms at 110 VAC / > 100 ms at 230 VAC
Output current I_o	4 A at 24 VDC; Max. 2.4 A in any mounting position
Efficiency	88 % (typ.)
Power loss P_v	0.8 W (230 VAC, no load); 13.1 W (230 VAC, nominal load)
Power loss P_v (max.)	14.8 W typ. (100 VAC / 24 VDC, 4 A)

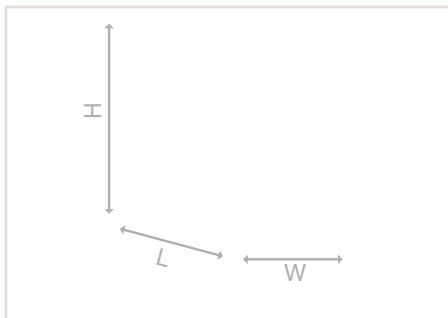
Mechanical Data

Dimensions (mm) W x H x L	90 x 89 x 59, Length: 55 mm from upper-edge of DIN-35 rail
Weight	300 g

Switched-Mode Power Supply, 1-Phase

EPSITRON® COMPACT Power

787 Series

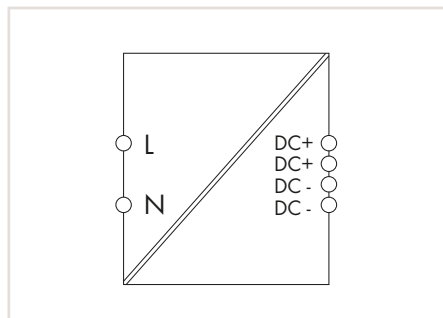
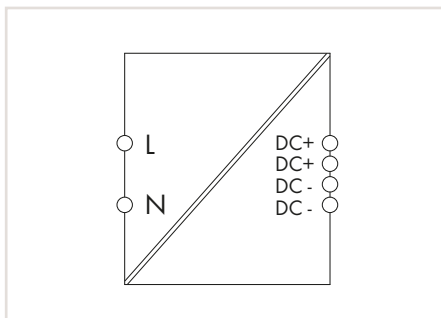


Features:

- Switched-Mode Power Supply unit
- Stepped profile, ideal for distribution boards or distribution boxes
- Removable front panel and screw mounts provide an ideal installation alternative in distribution boxes or devices
- Pluggable *picoMAX*® connection technology (tool-free)
- Electrically isolated output voltage (SELV) acc. to EN 60950-1/UL 60950-1 and EN 60335-1; PELV acc. to EN 60204
- Suitable for both parallel and series operation

Technical Data

Input	
Frequency	47 ... 63 Hz
Power factor	> 0.5
Discharge current	< 0.25 mA
Inrush current	< 20 A
Output	
Nominal output voltage $U_{o, nom}$	24 VDC (SELV)
Output voltage range	22 ... 26 VDC adjustable
Factory preset	24 VDC
Adjustment accuracy	< 1 %
Deviation, dynamic load change 10 ... 90 %	< 1 %
Residual ripple	< 100 mV (peak-to-peak)
Overload behavior	Constant power (in overload range: 1.05 ... 1.35 x I_o); shutdown and automatic restart in the event of a short circuit or permanent overload
Operational indication	LED green (U_o)
Fuse Protection	
External fuse	Circuit breakers 6 A (C characteristic) 10 A (B characteristic) or higher;; an external DC fuse is required for the DC input voltage.
General Specifications	
Conformity marking	CE
Standards/Approvals	EN 61204-3, EN 60335-1, EN 60950-1, UL 60950, UL 508* (* pending)
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-40 ... +85 °C
Relative humidity	95 % (no condensation permissible)
Derating	-2.66 % / K (> 55 °C)
Degree of pollution	2 (acc. to EN 50178)
Climatic category	3K3 (acc. to EN 60721, except for low air pressure)
Safety and Protection	
Enclosure	PC Plastic, light gray, Flammability class V2 acc. to UL94
Test voltage PRI-SEC	3 kV AC
Protection class	I
Degree of protection	IP20 per EN 60529
Overvoltage protection	< 31 VDC (in the event of a fault)
Short-circuit-protection	Yes
No-load proof	Yes
Feedback voltage	Max. 35 VDC
Parallel operation	Yes
Series connection	Yes
Connection and Type of Mounting	
Connectors	Input/Output: <i>picoMAX</i> ® (WAGO 2092 Series)
Conductor range	Input/Output: 0.2 ... 2.5 mm ² / 24 ... 12 AWG
Strip length	Input/Output: 9 ... 10 mm / 0.35 ... 0.39 inch
Type of mounting	DIN-rail-mount (EN 60715) or screw mount (back/side)



EPSITRON® Switched-Mode Power Supply, COMPACT Power, 1-phase, output: 24 VDC / 1.3 A

Item No.	Pack. Unit
787-1202	1

EPSITRON® Switched-Mode Power Supply, COMPACT Power, 1-phase, output: 24 VDC / 2.5 A

Item No.	Pack. Unit
787-1212	1

5

Electrical Data

Nominal input voltage $U_{I,nom}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC, 125 ... 375 VDC
Input voltage derating	-2 % / V (<100 VAC); -1.33 % / V (< 140 VDC)
Input current I_i	< 0.6 A
Mains failure hold-up time	≥ 70 ms
Output current I_o	1.3 A
Efficiency	> 87 % (230 VAC); > 82 % (110 VAC)
Power loss P_v	0.43 W (230 VAC, no load)
Power loss P_v (max.)	5.5 W (100 VAC; 1.3 ADC)
Internal fuse	T 1 A / 250 V
MTBF	> 700,000 h (per IEC 61709)

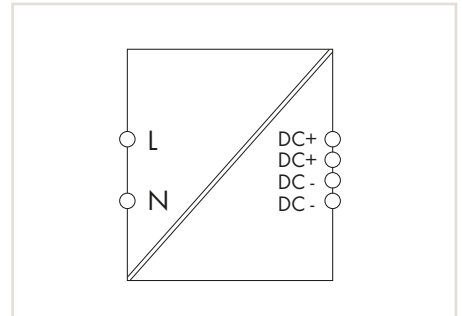
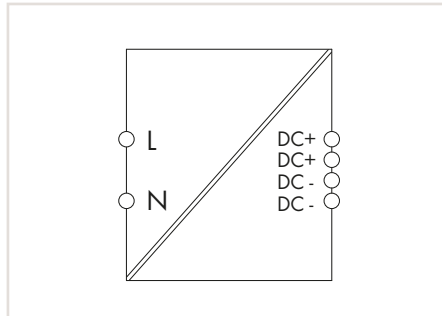
Mechanical Data

Dimensions (mm) W x H x L	54 x 90 x 56, Length: 52.5 mm from upper-edge of DIN-35 rail, 48 mm without front panel
Weight	210 g

Nominal input voltage $U_{I,nom}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC, 125 ... 375 VDC
Input voltage derating	-2 % / V (<100 VAC); -1.33 % / V (< 140 VDC)
Input current I_i	< 1.5 A
Mains failure hold-up time	≥ 60 ms
Output current I_o	2.5 A (2.0 A at U_i < 110 VAC)
Efficiency	> 89 % (230 VAC); > 87 % (110 VAC)
Power loss P_v	0.6 W (230 VAC, no load)
Power loss P_v (max.)	9 W (100 VAC; 2.5 ADC)
Internal fuse	T 2 A / 250 V
MTBF	> 500,000 h (acc. to IEC 61709)

Dimensions (mm) W x H x L	72 x 90 x 56, Length: 52.5 mm from upper-edge of DIN-35 rail 48 mm without front panel
Weight	270 g

Switched-Mode Power Supply, 1-Phase EPSITRON® COMPACT Power 787 Series



EPSITRON® Switched-Mode Power Supply,
COMPACT Power, 1-phase,
output: 24 VDC / 4.2 A

	Item No.	Pack. Unit
	787-1216	1

EPSITRON® Switched-Mode Power Supply,
COMPACT Power, 1-phase,
output: 24 VDC / 6 A

	Item No.	Pack. Unit
	787-1226	1

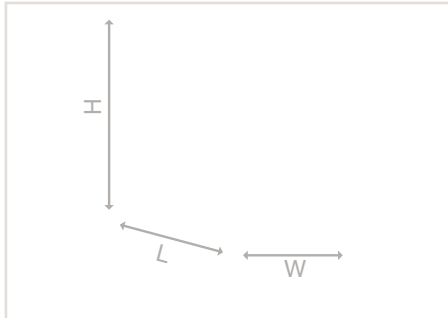
Electrical Data

Nominal input voltage U_{1nom}	100 ... 240 VAC	100 ... 120 VAC; 220 ... 240 VAC
Input voltage range	85 ... 264 VAC, 125 ... 375 VDC	90 ... 132 VAC; 180 ... 264 VDC
Input voltage derating	-2 % / V (<100 VAC); -1.33 % / V (< 140 VDC)	-2 % / (< 100 VAC)
Input current I_i	< 2.5 A	< 3.8 A
Mains failure hold-up time	≥ 50 ms	≥ 30 ms
Output current I_o	4.2 A (3.3 A at U_i < 110 VAC)	6 A (4.8 A at U_i < 110 VAC)
Efficiency	> 90 % (230 VAC); > 87 % (110 VAC)	> 90 % (230 VAC); > 89 % (110 VAC)
Power loss P_v	0.7 W (230 VAC, no load)	0.4 W (230 VAC, no load)
Power loss P_v (max.)	15 W (100 VAC; 4.2 ADC)	16.5 W (100 VAC; 6 ADC)
Internal fuse	T 3.15 A / 250 V	T 3.15 A / 250 V
MTBF	> 500,000 h	> 500,000 h
Mechanical Data		
Dimensions (mm) W x H x L	108 x 90 x 56, Length: 52.5 mm from upper-edge of DIN-35 rail	144 x 90 x 56, Length: 52.5 mm from upper-edge of DIN-35 rail
Weight	415 g	510 g

Switched-Mode Power Supply, 1-Phase

EPSITRON® COMPACT Power

787 Series

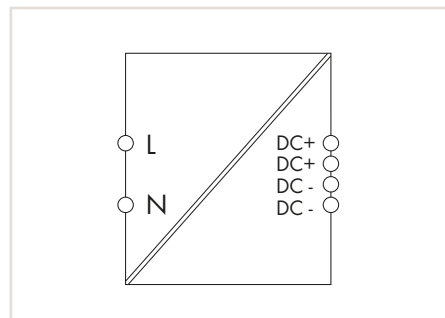
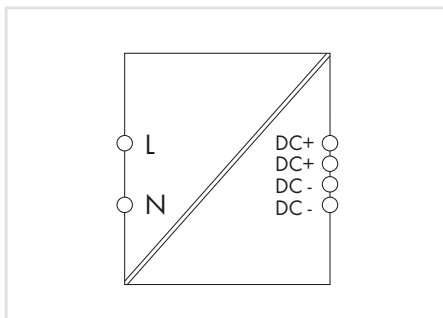


Features:

- Switched-Mode Power Supply unit
- Natural convection cooling when horizontally mounted
- Stepped profile, ideal for distribution boards or distribution boxes
- Overhead mounting is possible with derating
- Suitable for both parallel and series operation
- Electrically isolated output voltage (SELV) acc. to EN 60950-1/UL 60950-1; PELV acc. to EN 60204

Technical Data

Input	
Nominal input voltage $U_{i, \text{nom}}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC, 120 ... 373 VDC
Frequency	44 ... 66 Hz; 0 Hz
Discharge current	1 mA (typ.)
Inrush current	< 30 A, NTC
Output	
Adjustment accuracy	< 2 %
Current limitation	1.1 x I_o typ.
Overload behavior	Constant current
Operational indication	LED green (U_o)
Environmental Requirements	
Ambient operating temperature	-25 ... +60 °C (UL: -25 ... +55 °C); Device start at -40 °C type-tested
Relative humidity	5 % ... 96 % (no condensation permissible)
Derating	-3 % / K (> 45 °C)
Climatic category	3K3 (acc. to EN 60721)
Safety and Protection	
Enclosure	Plastic, light gray, Flammability class V0 acc. to UL94
Test voltage PRI-SEC	4.2 kV (DC)
Protection class	II
Degree of protection	IP20 per EN 60529
Overvoltage category	II
Short-circuit-protection	Yes
No-load proof	Yes
Parallel operation	Yes
Series connection	Yes
MTBF	> 500,000 h (acc. to IEC 61709)
Connection and Type of Mounting	
Connectors	Input/Output: WAGO 740 Series
Conductor range	Input/Output: 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input/Output: 6 ... 7 mm / 0.24 ... 0.28 inch
Type of mounting	DIN-rail mounting (EN 60715)



EPSITRON® Switched-Mode Power Supply,
COMPACT Power, 1-phase,
output: 5 VDC / 5.5 A

Item No.	Pack. Unit
787-1020	1

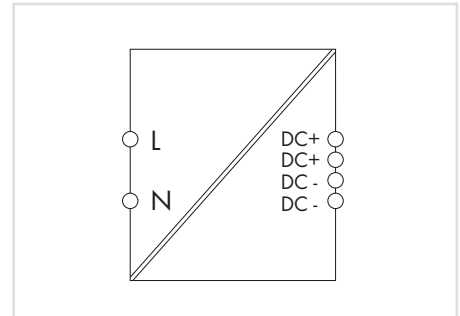
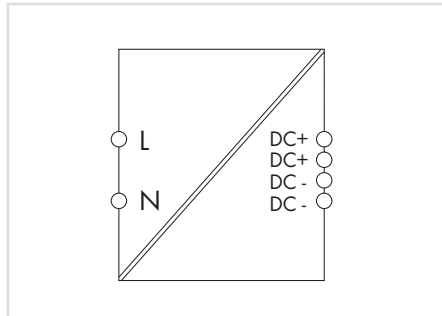
EPSITRON® Switched-Mode Power Supply,
COMPACT Power, 1-phase,
output: 12 VDC / 2 A

Item No.	Pack. Unit
787-1001	1

Electrical Data

Input voltage derating		< 100 VAC; I _o max. 1.5 A
Input current I _i	0.56 A at 110 VAC; 0.29 at 230 VAC	0.6 A at 110 VAC; 0.4 at 230 VAC
Mains failure hold-up time	> 10 ms at 110 VAC; > 80 ms at 230 VAC	> 10 ms at 110 VAC; > 80 ms at 230 VAC
Nominal output voltage U _{o,nom}	5 VDC, SELV	12 VDC (SELV)
Output voltage range	4.5 ... 8.5 VDC adjustable	10.8 ... 18 VDC adjustable
Factory preset	5 VDC	12 VDC
Output current I _o	5.5 A at 5 VDC; Max. 3.5 A in any mounting position	2 A at 12 VDC; 0.75 A at 18 VDC; Max. 1.4 A and 12 VDC in any mounting position
Residual ripple	< 100 mV (peak-to-peak) up to 20 MHz	< 100 mV (peak-to-peak) up to 20 MHz
Efficiency	75 % (typ.)	80 % (typ.)
Power loss P _v	2.4 W (230 VAC, no load) 9.4 W (230 VAC, nominal load)	2.6 W (230 VAC, no load) 6.0 W (230 VAC, nominal load)
Power loss P _v (max.)	9.9 W typ. (264 VAC / 5 VDC, 5.5 A)	6 W typ. (100 VAC / 12 VDC, 2 A)
Internal fuse	T 2 A / 250 V	T 2 A / 250 V
External fuse	Circuit breakers ≥ 6 A, B, C characteristic; ; an external DC fuse is required for the DC input voltage.	Circuit breakers ≥ 6 A, B, C characteristic; ; an external DC fuse is required for the DC input voltage.
Storage temperature	-25 ... +80 °C	-25 ... +80 °C
Degree of pollution	2 (acc. to EN 50178)	2 (acc. to EN 50178)
Overvoltage protection	< 16 VDC (in the event of a fault)	< 30 VDC (in the event of a fault)
Feedback voltage	Max. 10 VDC	Max. 25 VDC
Mechanical Data		
Dimensions (mm) W x H x L	72 x 89 x 59, Length: 55 mm from upper-edge of DIN-35 rail	54 x 89 x 59, Length: 55 mm from upper-edge of DIN-35 rail
Weight	240 g	180 g
General Specifications		
Standards/Approvals	EN 60950-1, EN 61204-3, UL 60950-1, UL 508 GL* (*pending)	EN 60950, EN 61204-3, UL 60950, UL 508, GL

Switched-Mode Power Supply, 1-Phase EPSITRON® COMPACT Power 787 Series



EPSITRON® Switched-Mode Power Supply,
COMPACT Power, 1-phase,
output: 12 VDC / 4 A

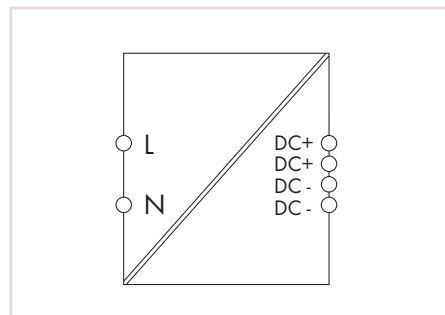
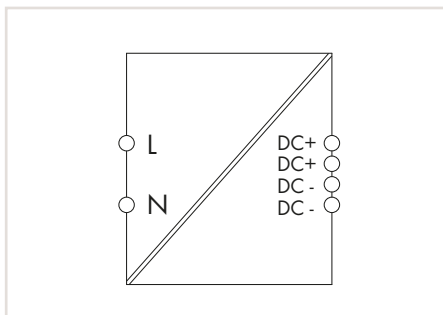
Item No.	Pack. Unit
787-1011	1

EPSITRON® Switched-Mode Power Supply,
COMPACT Power, 1-phase,
output: 12 VDC / 6.5 A

Item No.	Pack. Unit
787-1021	1

Electrical Data

Input voltage derating	< 100 VAC: I _o max. 3.5 A	Max. 6 A (< 100 VAC); 5.5 A (< 90 VAC)
Input current I _i	0.9 A at 110 VAC; 0.5 at 230 VAC	0.9 A at 110 VAC; 0.5 at 230 VAC
Mains failure hold-up time	> 10 ms at 110 VAC; > 80 ms at 230 VAC	> 15 ms at 110 VAC / > 100 ms at 230 VAC
Nominal output voltage U _{o,nom}	12 VDC (SELV)	12 VDC (SELV)
Output voltage range	10.5 ... 15.5 VDC adjustable	10.5 ... 15.5 VDC adjustable
Factory preset	12 VDC	12 VDC
Output current I _o	4 A at 12 VDC Max. 2.4 A in any mounting position	6.5 A at 12 VDC Max. 3.9 A (12 VDC) in any mounting position
Residual ripple	< 100 mV (peak-to-peak) up to 20 MHz	< 100 mV (peak-to-peak) up to 20 MHz
Efficiency	85 % (typ.)	87 % typ.
Power loss P _v	2.2 W (230 VAC, no load); 8.5 W (230 VAC, nominal load)	< 1 W (no load) 15 W (nominal load)
Power loss P _v (max.)	9 W typ. (100 VAC / 12 VDC, 4 A)	15 W typ. (100 VAC / 12 VDC, 6.5 A)
Internal fuse	T 2 A / 250 V	T 4 A / 250 V
External fuse	Circuit breakers ≥ 6 A, B, C characteristic; ; an external DC fuse is required for the DC input voltage.	Circuit breakers ≥ 6 A, B, C characteristic; ; an external DC fuse is required for the DC input voltage.
Storage temperature	-25 ... +80 °C	-25 ... +80 °C
Degree of pollution	2 (acc. to EN 50178)	2 (acc. to EN 50178)
Overvoltage protection	< 30 VDC (in the event of a fault)	< 30 VDC (in the event of a fault)
Feedback voltage	Max. 25 VDC	Max. 25 VDC
Mechanical Data		
Dimensions (mm) W x H x L	72 x 89 x 59, Length: 55 mm from upper-edge of DIN-35 rail	90 x 89 x 59, Length: 55 mm from upper-edge of DIN-35 rail
Weight	255 g	300 g
General Specifications		
Standards/Approvals	EN 60950, EN 61204-3, UL 60950, UL 508, GL	EN 60950, EN 61204-3, UL 60950, UL 508, GL



EPSITRON® Switched-Mode Power Supply,
COMPACT Power, 1-phase,
output: 18 VDC / 2.5 A

Item No.	Pack. Unit
787-1017	1

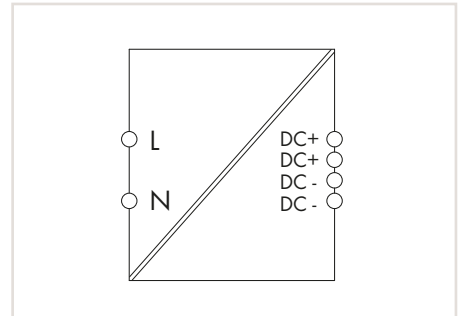
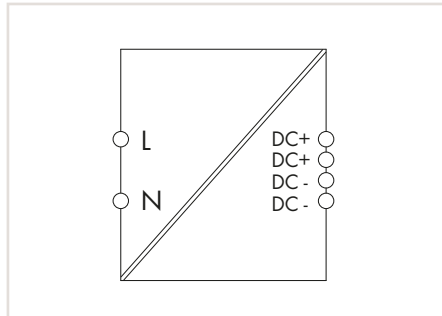
EPSITRON® Switched-Mode Power Supply,
COMPACT Power, 1-phase,
output: 24 VDC / 1.3 A

Item No.	Pack. Unit
787-1002	1

Electrical Data

Input voltage derating	Max. 2 A (< 100 VAC)	< 100 V; I _o max. 1 A
Input current I _i	0.9 A at 110 VAC; 0.5 at 230 VAC	0.7 A at 110 VAC; 0.5 at 230 VAC
Mains failure hold-up time	> 10 ms at 110 VAC; > 130 ms at 230 VAC	> 10 ms at 110 VAC; > 80 ms at 230 VAC
Nominal output voltage U _{o,nom}	18 VDC	24 VDC (SELV)
Output voltage range	15 ... 28 VDC adjustable	22.8 ... 26.4 VDC adjustable
Factory preset	18 VDC	24 VDC
Output current I _o	2.4 at 18 VDC; 2.0 A at 24 VDC in any mounting position	1.3 A at 24 VDC Max. 0.9 A in any mounting position
Residual ripple	< 100 mV (peak-to-peak) up to 20 MHz	< 100 mV (peak-to-peak) up to 20 MHz
Efficiency	84 % (typ.)	82 % (typ.)
Power loss P _v	2.6 W (230 VAC, no load), 8.1 W (230 VAC, nominal load)	2.6 W (230 VAC, no load) 7.0 W (230 VAC, nominal load)
Power loss P _v (max.)	8.2 W typ. (100 VAC / 18 VDC, 2.4 A)	7.3 W typ. (100 VAC / 24 VDC, 1.3 A)
Internal fuse	T 2 A / 250 V	T 2 A / 250 V
External fuse	Circuit breakers ≥ 6 A, B, C characteristic; ; an external DC fuse is required for the DC input voltage.	Circuit breakers ≥ 6 A, B, C characteristic; ; an external DC fuse is required for the DC input voltage.
Storage temperature	-25 ... +80 °C	-25 ... +80 °C
Degree of pollution	2 (acc. to EN 50178)	2 (acc. to EN 50178)
Overvoltage protection	< 40 VDC (in the event of a fault)	< 40 VDC (in the event of a fault)
Feedback voltage	Max. 35 VDC	Max. 30 VDC
Mechanical Data		
Dimensions (mm) W x H x L	72 x 89 x 59, Length: 55 mm from upper-edge of DIN-35 rail	54 x 89 x 59, Length: 55 mm from upper-edge of DIN-35 rail
Weight	250 g	180 g
General Specifications		
Standards/Approvals	EN 60950, EN 61204-3, UL 60950-1, UL 508, GL * (* pending)	EN 60950, EN 61204-3, UL 60950, UL 508, GL

Switched-Mode Power Supply, 1-Phase EPSITRON® COMPACT Power 787 Series



EPSITRON® Switched-Mode Power Supply,
COMPACT Power, 1-phase,
output: 24 VDC / 2.5 A

Item No.	Pack. Unit
787-1012	1

EPSITRON® Switched-Mode Power Supply,
COMPACT Power, 1-phase,
output: 24 VDC / 4 A

Item No.	Pack. Unit
787-1022	1

Electrical Data

Input voltage derating	< 100 V: I _o max. 2.0 A; < 90 V: I _o max. 1.8 A	upon request
Input current I _i	1.4 A at 110 VAC; 0.6 at 230 VAC	1.6 A at 110 VAC; 0.9 at 230 VAC
Mains failure hold-up time	> 10 ms at 110 VAC; > 80 ms at 230 VAC	> 15 ms at 110 VAC / > 100 ms at 230 VAC
Nominal output voltage U _{o,nom}	24 VDC (SELV)	24 VDC (SELV)
Output voltage range	22.8 ... 26.4 VDC adjustable	22.8 ... 26.4 VDC adjustable
Factory preset	24 VDC	24 VDC
Output current I _o	2.5 A at 24 VDC Max. 1.6 A in any mounting position	4 A at 24 VDC Max. 2.4 A in any mounting position
Residual ripple	< 100 mV (peak-to-peak) up to 20 MHz	< 100 mV (peak-to-peak) up to 20 MHz
Efficiency	88 % (typ.)	88 % (typ.)
Power loss P _v	2.2 W (230 VAC, no load); 8.5 W (230 VAC, nominal load)	0.8 W (230 VAC, no load); 13.1 W (230 VAC, nominal load)
Power loss P _v (max.)	10.5 W typ. (100 VAC / 24 VDC, 2.5 A)	14.8 W typ. 264 VAC / 24 VDC, 6 A)
Internal fuse	T 2 A / 250 V	T 4 A / 250 V
External fuse	Circuit breakers ≥ 6 A, B, C characteristic; ; an external DC fuse is required for the DC input voltage.	Circuit breakers ≥ 6 A, B, C characteristic; ; an external DC fuse is required for the DC input voltage.
Storage temperature	-25 ... +80 °C	-25 ... +80 °C
Degree of pollution	2 (acc. to EN 50178)	2 (acc. to EN 50178)
Overvoltage protection	< 40 VDC (in the event of a fault)	< 40 VDC (in the event of a fault)
Feedback voltage	Max. 30 VDC	Max. 30 VDC
Mechanical Data		
Dimensions (mm) W x H x L	72 x 89 x 59, Length: 55 mm from upper-edge of DIN-35 rail	90 x 89 x 59, Length: 55 mm from upper-edge of DIN-35 rail
Weight	255 g	310 g
General Specifications		
Standards/Approvals	EN 60950, EN 61204-3, UL 60950, UL 508, GL	EN 60950, EN 61204-3, UL 60950, UL 508, GL

Switched-Mode Power Supply with Integrated UPS Charger and Controller

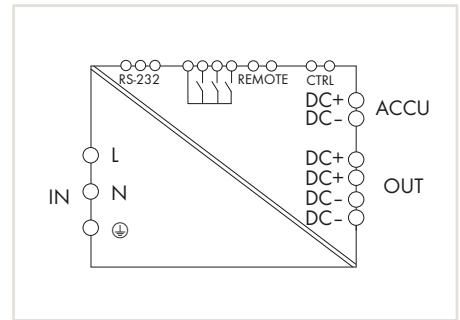
EPSITRON®

787 Series



Features:

- Switched-Mode Power Supply with integrated charger and controller for uninterruptible power supply (UPS)
- Battery control technology for smooth charging and predictive maintenance applications
- Potential-free contacts provide function monitoring
- Buffer time can be set on site via rotary switch
- Parameter setting and monitoring via RS-232 interface
- Natural convection cooling when horizontally mounted
- Enclosed for use in control cabinets
- Electrically isolated output voltage (SELV) acc. to EN 60950-1/UL 60950-1; PELV acc. to EN 60204



EPSITRON® Switched-Mode Power Supply, with integrated UPS charger and controller, COMPACT Power, 1-phase, output: 24 VDC / 5 A

Item No.	Pack. Unit
787-1675	1

Technical Data

Input	
Nominal input voltage $U_{i, nom}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 120 ... 372 VDC
Frequency	44 ... 66 Hz; 0 Hz
Input current I_i	1.1 A at 230 VAC and 5 VDC
Discharge current	1 mA (typ.)
Inrush current	< 30 A
Output	
Nominal output voltage $U_{o, nom}$	24 VDC (SELV)
Output voltage range	23.0 ... 28.5 VDC (mains operation) 18.5 ... 27.5 VDC (battery operation)
Output current I_o	5 A
Adjustment accuracy	1 % (mains operation)
Residual ripple	< 50 mV (peak-to-peak)
Current limitation	1.1 x I_o ; TopBoost
Buffer time	1 ... 20 min, IPC mode or constant (adjustable)
Switch-on threshold (adjustable)	22 VDC (pre-configured) 20 ... 25.5 VDC (configurable via software)
Final load voltage	26 ... 29.5 V temperature-controlled (fixed or adjustable)
Charging current	0.3 ... 1 A
Recommended battery modules	787-876, 787-871, 787-872, 787-873, 787-1671
Operational indication	LED green (DC OK), LED yellow (battery mode), LED red (warning/fault)
Signaling	3 x 24 VDC signal output, 25 mA and 1 x 30 VDC isolated relay contact, 1 A
Remote input	To switch off buffer operation
LineMonitor, parameter setting	Via RS-232 serial interface
Efficiency/Power Losses	
Efficiency	88 % (typ.)
Power loss P_V	5.2 W (battery operation, 24 VDC, 5 A); 17 W (mains operation, 230 VAC / 24 VDC, 5 A)
Fuse Protection	
Internal fuse	T 4 A / 250 V (input side)
External fuse	Circuit breakers 6 A, 10 A, 16 A, B, C characteristic; an external DC fuse is required for the DC input voltage.

General Specifications

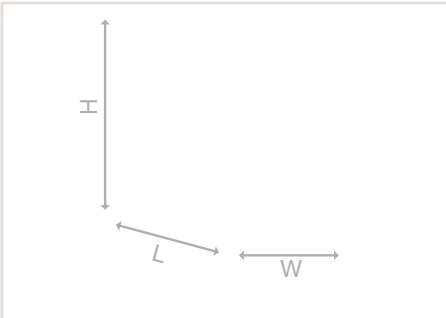
Standards/Approvals	EN 60950, UL 60950, UL 508, EN 61204-3, GL
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C Device start at -40 °C type-tested
Storage temperature	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Derating	-3 % / K (> +50 °C)
Degree of pollution	2 (acc. to EN 50178)
Climatic category	3K3 (acc. to EN 60721)
Safety and Protection	
Test voltage PRI.-SEC./PRI.-GR./SEC.-GR.	4.2 kV DC / 2.2 kV DC / 0.7 kV DC
Protection class	I
Reverse voltage protection	Yes
Degree of protection	IP20 per EN 60529
Overvoltage category	II
Feedback voltage	Max. 35 VDC
Parallel operation	Yes, max. 3 battery modules for buffer time extension
Connection and Type of Mounting	
Connectors	Input/Output/Signaling: WAGO 721 Series Interface: WAGO 734 Series
Conductor range	Input/Output/Signaling 0.08 ... 2.5 mm ² / 28 ... 12 AWG Interface: 0.08 ... 1.5 mm ² / 28 ... 14 AWG
Strip length	Input/Output/Signaling 8 ... 9 mm / 0.31 ... 0.35 inch Interface: 6 ... 7 mm / 0.24 ... 0.28 inch
Cable length	≤ 3 m (Output, Battery Control)
Type of mounting	DIN-rail mounting (EN 60715)
Dimensions and Weight	
Dimensions (mm) W x H x L	60 x 127 x 135.5, Length from upper-edge of DIN-35 rail
Weight	885 g

Communication cable, see page 430

UPS Charger and Controller

EPSITRON®

787 Series

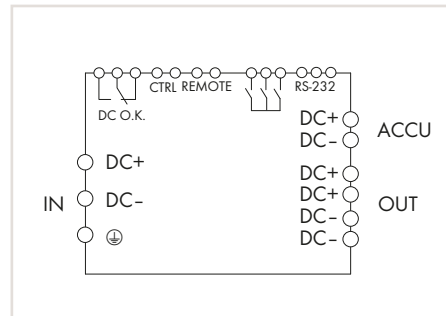
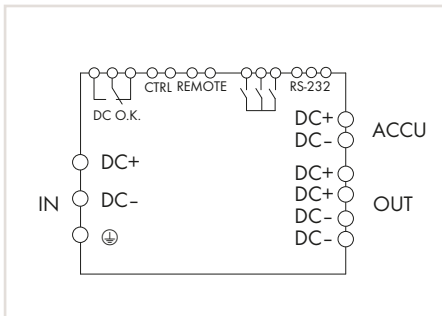


Features:

- Charger and controller for uninterruptible power supply (UPS)
- Current and voltage monitoring, as well as parameter setting via RS-232 interface and LCD
- Active signal outputs for watchdog functions
- Remote input for switching off buffered output
- Input for temperature control of connected battery
- Battery control (from manufacturing no. 215563) detects both battery life and battery type

Technical Data

Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	22 ... 29 VDC
Inrush current	< 4 A (no load)
Switch-on threshold (adjustable)	20 ... 25.5 VDC
Output	
Nominal output voltage $U_{o, \text{nom}}$	24 VDC
Buffer time	10 ... 600 s or constant (adjustable)
Final load voltage	26 ... 29.5 VDC or temperature controlled (adjustable)
Operational indication	LED green (Uo), LED yellow (warning), LED red (error)
Signaling	LCD, 3 x signal output 24 VDC, 25 mA, and 1 x floating relay contact 30 VDC, 1 A
Remote input	To switch off buffer operation
LineMonitor, parameter setting	via LCD and RS-232 serial interface
Efficiency/Power Losses	
Efficiency	95 % (typ.)
General Specifications	
Standards/Approvals	EN 60950, UL 60950, UL 508, EN 61000-6-2, EN 61000-6-3
Environmental Requirements	
Ambient operating temperature	-10 ... +60 °C
Storage temperature	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Safety and Protection	
Test voltage	500 VDC (terminals to enclosure)
Protection class	III
Reverse voltage protection	Yes
Degree of protection	IP20 per EN 60529
Feedback voltage	Max. 35 VDC
Parallel operation	Yes, 3 battery modules for buffer time extension (temperature measurement evaluation is only possible via one battery module)
Connection and Type of Mounting	
Cable length	≤ 3 m (Input, Output, Battery Control)
Type of mounting	DIN-rail-mounting (EN 60715) in 2 positions



EPSITRON® UPS Charger and Controller, input voltage: 24 VDC, output: 24 VDC / 10 A, LineMonitor, communication capability

Item No.	Pack. Unit
787-870	1

EPSITRON® UPS Charger and Controller, input voltage: 24 VDC, output: 24 VDC / 20 A, LineMonitor, communication capability

Item No.	Pack. Unit
787-875	1

Electrical Data

Input current I_i	0.1 A (no load running); 0.8 A (charging); 10.8 A (max.)	0.1 A (no load running); 1.5 A (charging); 21.5 A (max.)
Output voltage range	$U_i - 1$ VDC (below switch-on threshold); 20 ... 25.5 VDC (buffer mode)	$U_i - 1$ VDC (below switch-on threshold); 20 ... 25.5 VDC (buffer mode)
Output current I_o	10 A	20 A
Current limitation	Typ. 11 ... 14 A	Typ. 22 ... 26 A
Charging current	Max. 0.6 A	Max. 1.0 A
Recommended battery modules	787-871, 787-872, 787-873, 787-876, 787-1671	787-871, 787-872, 787-873
Power loss P_v	15 W (stand-by) / 20 W (rated load)	15 W (stand-by) / 30 W (rated load)
Internal fuse	15 AT	25 AT
Connectors	Input/Output: WAGO 231 Series Signaling: WAGO 733 Series	Input/Output: WAGO 831 Series Signaling: WAGO 733 Series
Conductor range	Input/Output: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Signaling: 0.08 ... 0.5 mm ² / 28 ... 20 AWG	Input/Output: 0.5 ... 10 mm ² / 20 ... 8 AWG Signaling: 0.08 ... 0.5 mm ² / 28 ... 20 AWG
Strip length	Input/Output: 8 ... 9 mm / 0.31 ... 0.35 inch Signaling: 5 ... 6 mm / 0.2 ... 0.24 inch	Input/Output: 13 ... 15 mm / 0.51 ... 0.59 inch Signaling: 5 ... 6 mm / 0.2 ... 0.24 inch

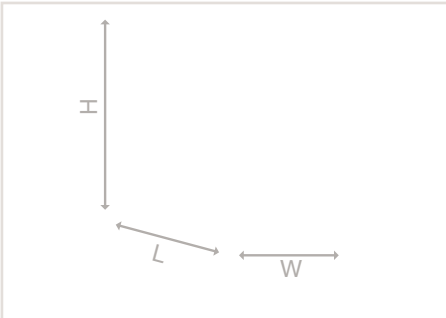
Mechanical Data

Dimensions (mm) W x H x L	40 x 163 x 163, Length from upper-edge of DIN-35 rail	57 x 171 x 163, Length from upper-edge of DIN-35 rail
Weight	800 g	1200 g

Lead-Acid (AGM) Battery Modules

EPSITRON®

787 Series



Technical Data

Input	
Nominal input voltage $U_{i,nom}$	24 VDC
Output	
Nominal output voltage $U_{o,nom}$	24 VDC
Final load voltage	27 VDC (at 25 °C)
Environmental Requirements	
Storage temperature	-20 ... +40 °C
Service Life	Typ. 5 / 4 / 2 years at 20 °C / 30 °C / 40 °C
Safety and Protection	
Protection class	III
Degree of protection	IP20 per EN 60529
Connection and Type of Mounting	
Cable length	≤ 3 m (Input, Output, Battery Control)

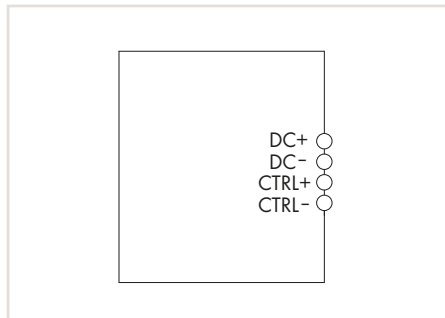
Features:

- Lead-acid Absorbed Glass Mat (AGM) battery module for uninterruptible power supply (UPS)
- Can be connected to both 787-870 or 787-875 UPS Charger and Controller, and to 787-1675 Power Supply with integrated UPS charger and controller
- Parallel operation provides higher buffer time *
- With built-in temperature sensor
- Mounting on DIN 35 carrier rail (only 787-876 and 787-1617) or on mounting plate via continuous carrier rail (787-871, -872, -873)
- Battery control (from manufacturing no. 216570) detects both battery life and battery type

5



Similar to pictured device

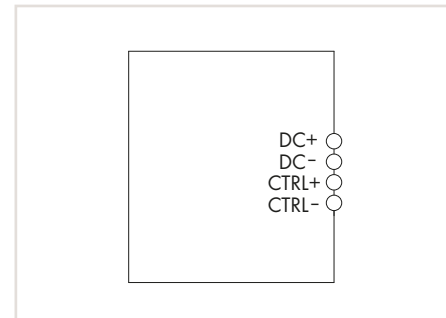


EPSITRON® Lead-Acid (AGM) Battery Module,
input voltage: 24 VDC,
output current: 7.5 A,
capacity: 1.2 Ah, with battery control

Item No.	Pack. Unit
787-876	1



Similar to pictured device



EPSITRON® Lead-Acid (AGM) Battery Module,
input voltage: 24 VDC,
output current: 20 A,
capacity: 3.2 Ah, with battery control

Item No.	Pack. Unit
787-871	1

5

Electrical Data

Output current I _o	Max. 7.5 A	20 A
Charging current	Max. 0.3 A	Max. 0.8 A
Capacity	1.2 Ah	3.2 Ah
Internal fuse	15 AT	25 AT
Ambient operating temperature	-15 ... +40 °C	-15 ... +40 °C
Connectors	Input/Output: WAGO 231 Series Battery control: WAGO 231 Series	Input/Output: WAGO 231 Series Battery control: WAGO 231 Series
Conductor range	Input/Output: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Battery Control: 0.08 ... 2.5 mm ² / 28 ... 12 AWG	Input/Output: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Battery Control: 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input/Output: 8 ... 9 mm / 0.31 ... 0.35 inch Battery control: 8 ... 9 mm / 0.31 ... 0.35 inch	Input/Output: 8 ... 9 mm / 0.31 ... 0.35 inch Battery control: 8 ... 9 mm / 0.31 ... 0.35 inch
Type of mounting	DIN-rail mounting (EN 60715)	Screw mounting
Mechanical Data		
Dimensions (mm) W x H x L	55 x 153 x 136.5, Height, incl. female connector, Length from upper-edge of DIN-35 rail	76.2 x 168 x 175.5, Length from upper-edge of DIN-35 rail
Weight	1800 g	3975 g
General Specifications		
Standards/Approvals	Battery is tested to UL 508	Battery is tested to UL 508

* for parallel connection, please switch battery capacity setting to "OFF" in the UPS charger and controller.

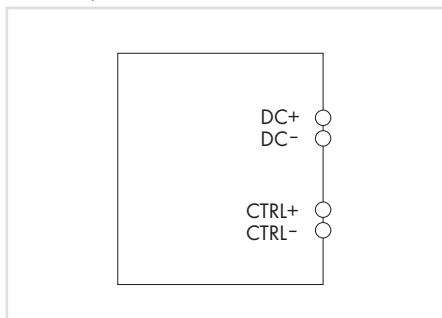
Lead-Acid (AGM) Battery Modules

EPSITRON®

787 Series



Similar to pictured device

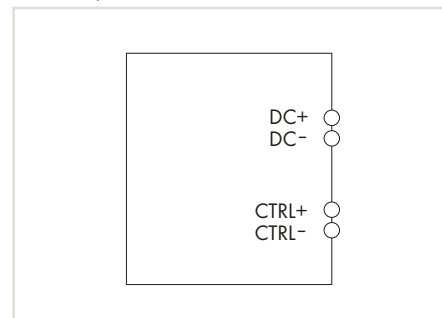


EPSITRON® Lead-Acid (AGM) Battery Module,
input voltage: 24 VDC,
output current: 40 A,
capacity: 7 Ah, with battery control

Item No.	Pack. Unit
787-872	1



Similar to pictured device

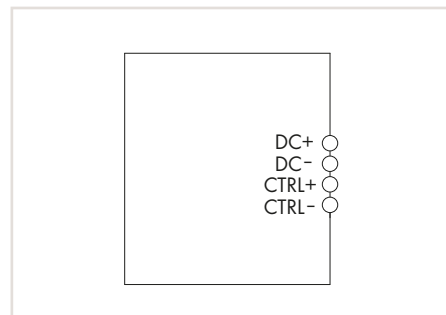


EPSITRON® Lead-Acid (AGM) Battery Module,
input voltage: 24 VDC,
output current: 40 A,
capacity: 12 Ah, with battery control

Item No.	Pack. Unit
787-873	1

Electrical Data

Output current I _o	40 A	40 A
Charging current	Max. 1.8 A	Max. 3 A
Capacity	7 Ah	12 Ah
Internal fuse	2 x 25 AT	2 x 25 AT
Ambient operating temperature	-15 ... +40 °C	-15 ... +40 °C
Connectors	Input/Output: WAGO 831 Series Battery control: WAGO 231 Series	Input/Output: WAGO 831 Series Battery control: WAGO 231 Series
Conductor range	Input/Output: 0.5 ... 10 mm ² / 20 ... 8 AWG Battery Control: 0.08 ... 2.5 mm ² / 28 ... 12 AWG	Input/Output: 0.5 ... 10 mm ² / 20 ... 8 AWG Battery Control: 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input/Output: 13 ... 15 mm / 0.51 ... 0.59 inch Battery control: 8 ... 9 mm / 0.31 ... 0.35 inch	Input/Output: 13 ... 15 mm / 0.51 ... 0.59 inch Battery control: 8 ... 9 mm / 0.31 ... 0.35 inch
Type of mounting	Screw mounting	Screw mounting
Mechanical Data		
Dimensions (mm) W x H x L	86 x 239 x 217.5	120.5 x 239 x 217.5
Weight	7100 g	10830 g
General Specifications		
Standards/Approvals	Battery is tested to UL 508	Battery is tested to UL 508



EPSITRON® Lead-Acid (AGM) Battery Module,
input voltage: 24 VDC,
output current: 5 A,
capacity: 0.8 Ah, with battery control

Item No.	Pack. Unit
787-1671	1

Electrical Data

Output current I_o	5 A
Charging current	0.2 A (recommended)
Capacity	0.8 Ah
Internal fuse	10 AT
Ambient operating temperature	-15 ... +40 °C -20 ... +40 °C (during discharging)
Connectors	Input/Output: WAGO 721 Series Battery control: WAGO 721 Series
Conductor range	Input/Output: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Battery Control: 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input/Output: 8 ... 9 mm / 0.31 ... 0.35 inch Battery control: 8 ... 9 mm / 0.31 ... 0.35 inch
Type of mounting	DIN-rail mounting (EN 60715)

Mechanical Data

Dimensions (mm) W x H x L	72 x 97 x 124
Weight	1000 g

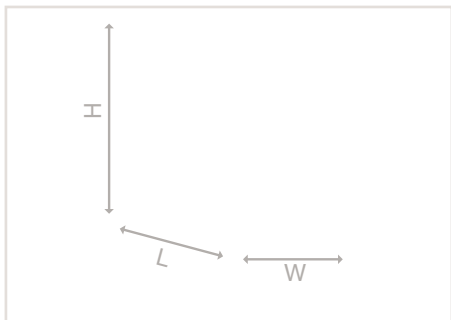
General Specifications

Standards/Approvals	UL 508 * (* pending)
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Capacitive Buffer Modules

EPSITRON®

787 Series



Features:

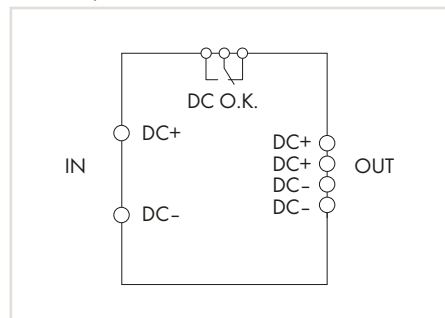
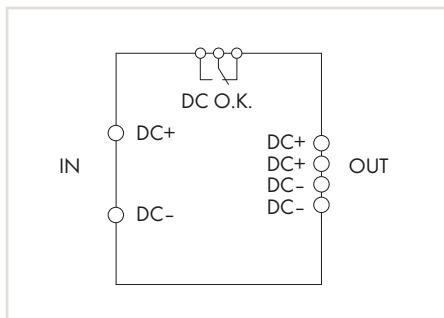
- Capacitive buffer module bridges short duration voltage drops or load fluctuations
- For uninterrupted power supply
- Internal diode between input and output enables operation with decoupled output
- Easy parallel connection of modules to extend buffer time of increase the buffer current
- Potential-free contact for charge condition monitoring

Technical Data

Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	20 ... 30 VDC
Switch-on threshold (adjustable)	20 ... 24 VDC
Output	
Nominal output voltage $U_{o, \text{nom}}$	24 VDC
Charging time	Typ. 5 min
Operational indication	LED green ($U_o > 20 \text{ V}$), LED yellow (charging), LED red ($U_o < 20 \text{ V}$)
Signaling	1 x floating relay contact 30 VDC, 1 A
General Specifications	
Standards/Approvals	EN 60950, UL 508, EN 61000-6-2, EN 61000-6-3
Environmental Requirements	
Ambient operating temperature	-10 ... +50 °C
Storage temperature	-10 ... +60 °C
Service Life	typ. 87,600 h (at 25 °C ambient operating temperature); typ. 30,500 h (at 40 °C ambient operating temperature)
Relative humidity	5 % ... 96 % (no condensation permissible)
Safety and Protection	
Test voltage	500 VDC (terminals to enclosure)
Protection class	III
Reverse voltage protection	Yes
Degree of protection	IP20 per EN 60529
Feedback voltage	Max. 35 VDC
Parallel operation	Yes
Connection and Type of Mounting	
Type of mounting	DIN-rail-mounting (EN 60715) in 2 positions
Dimensions and Weight	
Weight	1000 g



Similar to pictured device



EPSITRON® Capacitive Buffer Module,
input voltage: 24 VDC,
output: 24 VDC / 10 A,
buffer time: 0.06 ... 7.2 s, signal contact

Item No.	Pack. Unit
787-880	1

EPSITRON® Capacitive Buffer Module,
input voltage: 24 VDC,
output: 24 VDC / 20 A,
buffer time: 0.17 ... 16.5 s, signal contact

Item No.	Pack. Unit
787-881	1

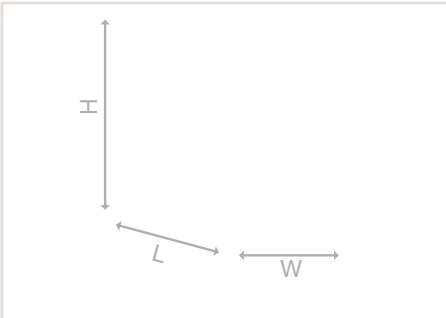
Electrical Data

Input current I_i	60 mA (no load running); 1 A (charging); 11 A (max.)	60 mA (no load running); 1 A (charging); 22 A (max.)
Output voltage range	U_i - 0.5 VDC (below switch-on threshold) 20.4 ... 24 VDC (during buffer mode)	U_i - 1 VDC (below switch-on threshold) 20.4 ... 24 VDC (during buffer mode)
Output current I_o	10 A	20 A
Current limitation	Electronic, typ. 11 A	Electronic, typ. 22 A
Buffer time	0.06 ... 7.2 s (depends on load current and switch-on threshold)	0.17 ... 16.5 s (depends on load current and switch-on threshold)
Power loss P_v	1.5 W open circuit 6.5 W nominal load	1.5 W open circuit 15 W (nominal load)
Connectors	Input/Output: WAGO 231 Series Relay: WAGO 231 Series	Input/Output: WAGO 831 Series Relay: WAGO 231 Series
Conductor range	Input/Output: 0.08 ... 2.5 mm ² / 28 ... 12 AWG Relay: 0.08 ... 2.5 mm ² / 28 ... 12 AWG	Input/Output: 0.5 ... 10 mm ² / 20 ... 8 AWG Relay: 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input/Output: 8 ... 9 mm / 0.31 ... 0.35 inch Relay: 8 ... 9 mm / 0.31 ... 0.35 inch	Input/Output: 13 ... 15 mm / 0.51 ... 0.59 inch Relay: 8 ... 9 mm / 0.31 ... 0.35 inch
Mechanical Data		
Dimensions (mm) W x H x L	57 x 163 x 179, Length from upper-edge of DIN-35 rail	57 x 181 x 179, Length from upper-edge of DIN-35 rail

Redundancy Modules

EPSITRON®

787 Series

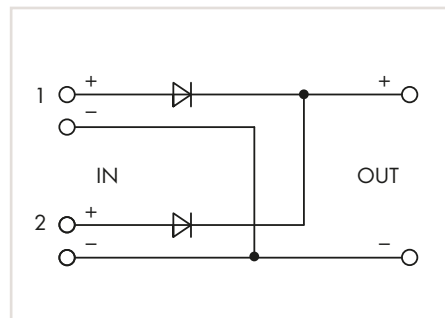
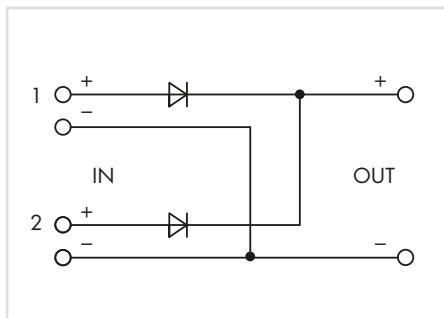


Features:

- Redundancy module with 2 inputs for decoupling 2 power supplies
- For redundant and fail-safe power supply
- With LED for input voltage monitoring on site

Technical Data

Input	
Nominal input voltage $U_{i, \text{nom}}$	2 x 24 VDC
Input voltage range	2 x 9 ... 54 VDC
Output	
Nominal output voltage $U_{o, \text{nom}}$	24 VDC ($U_i - 0.6 \text{ V}$)
Output voltage range	9 ... 54 VDC
Voltage drop	0.6 V (Input/Output)
Operational indication	2 x LED green ($U_i > 7.5 \text{ VDC}$), 1 x LED green ($U_o > 7.5 \text{ VDC}$)
General Specifications	
Standards/Approvals	UL 508
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-40 ... +85 °C
Relative humidity	≤ 95 % (no condensation permissible)
Derating	-2.66 % / K ($55 \text{ °C} < T_{\text{amb}} \leq 70 \text{ °C}$)
Degree of pollution	2 (acc. to EN 50178)
Climatic category	3K3 (acc. to EN 60721, except for low air pressure)
Vibration resistance	0.7 g (acc. to EN 60068-2-6)
Shock resistance	15 g (acc. to EN 60068-2-27)
Safety and Protection	
Test voltage	0.5 kV (input – housing); 0.5 kV (output – housing)
Protection class	III
Degree of protection	IP20 per EN 60529
Overvoltage protection	No
Short-circuit-protection	No
No-load proof	Yes
Feedback voltage	60 V
Parallel operation	Yes
MTBF	> 10 Mio. h (acc. to IEC 61709)
Connection and Type of Mounting	
Type of mounting	DIN-rail mounting (EN 60715)



EPSITRON® Diode Redundancy Module,
input voltage: 2 x 9 ... 54 VDC,
max. input current: 12.5 A per path,
output: 9 ... 54 VDC / 25 A

Item No.	Pack. Unit
787-783	1

EPSITRON® Diode Redundancy Module,
input voltage: 2 x 9 ... 54 VDC,
max. input current: 40 A per path,
output: 9 ... 54 VDC / 76 A

Item No.	Pack. Unit
787-785	1

Electrical Data

Input current I_i	Max. 12.5 ADC per path
Output current I_o	25 ADC (max.)
Output power	≤ 1350 W
Efficiency	≥ 96 %
Power loss P_v	12.5 W (nominal load)
Connection technology	CAGE CLAMP® (2706 Series)
Conductor range	solid/fine-stranded: 0.5 ... 6 mm ² / 20 ... 10 AWG
Strip length	11 ... 12 mm / 0.43 ... 0.47 inch

Mechanical Data

Dimensions (mm) W x H x L	50 x 130 x 92, Length from upper-edge of DIN-35 rail
Weight	340 g

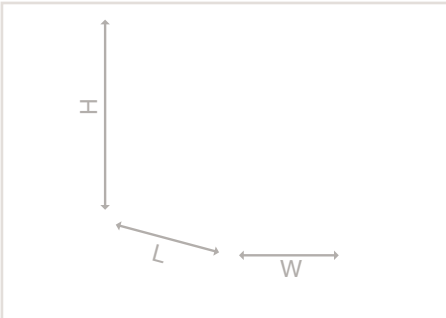
Max. 40 ADC per path (in total max. 76 ADC)	Max. 76 ADC (UL max. 65 ADC)
Max. 76 ADC (UL max. 65 ADC)	≤ 4104 W
≤ 4104 W	≥ 97 %
≥ 97 %	29.7 W (nominal load)
29.7 W (nominal load)	CAGE CLAMP® (2716 Series)
CAGE CLAMP® (2716 Series)	solid/fine-stranded: 1.5 ... 16 mm ² / 16 ... 6 AWG
solid/fine-stranded: 1.5 ... 16 mm ² / 16 ... 6 AWG	12 ... 13 mm / 0.47 ... 0.51 inch

83 x 130 x 153, Length from upper-edge of DIN-35 rail	83 x 130 x 153, Length from upper-edge of DIN-35 rail
83 x 130 x 153, Length from upper-edge of DIN-35 rail	960 g

Redundancy Modules

EPSITRON®

787 Series

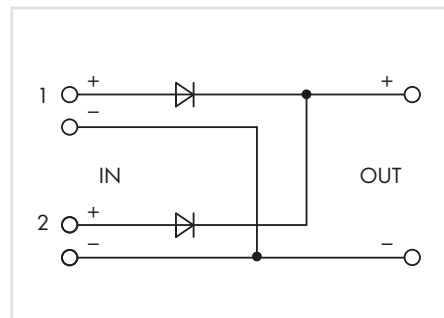
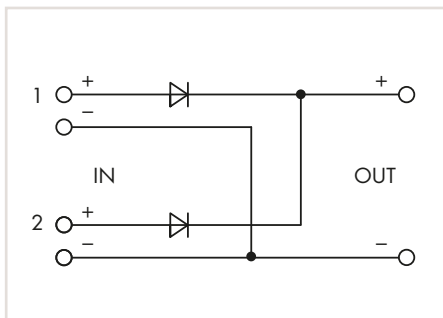


Features:

- Redundancy module with 2 inputs for decoupling 2 power supplies
- For redundant and fail-safe power supply
- With LED and potential-free contact for input voltage monitoring on site and remotely

Technical Data

Output	
Output voltage range	Ui - 0.6 VDC
Output current I _o	20 A, max. 40 A
Operational indication	LED green (U _o), 2x LED yellow (U _i)
Signaling	1 x isolated relay contact 30 VDC, 1 A
Fuse Protection	
Internal fuse	No
Environmental Requirements	
Ambient operating temperature	-10 ... +60 °C
Storage temperature	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Safety and Protection	
Test voltage	500 VDC (terminals to enclosure)
Protection class	III
Reverse voltage protection	Yes
Degree of protection	IP20 per EN 60529
Parallel operation	Yes
Connection and Type of Mounting	
Connectors	Input/Output: WAGO 831 Series Relay: WAGO 231 Series
Conductor range	Input/Output: 0.5 ... 10 mm ² / 20 ... 8 AWG Relay: 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input/Output: 13 ... 15 mm / 0.51 ... 0.59 inch Relay: 8 ... 9 mm / 0.31 ... 0.35 inch
Type of mounting	DIN-rail mounting (EN 60715) in 2 positions
Dimensions and Weight	
Dimensions (mm) W x H x L	40 x 181 x 163, Length from upper-edge of DIN-35 rail



EPSITRON® Diode Redundancy Module,
input voltage: 2 x 24 VDC,
max. input current: 20 A per path,
output: 24 VDC / 40, A, signal contact

Item No.	Pack. Unit
787-885	1

EPSITRON® Diode Redundancy Module,
input voltage: 2 x 48 VDC,
max. input current: 20 A per path,
output: 48 VDC / 40, A, signal contact

Item No.	Pack. Unit
787-886	1

Electrical Data

Nominal input voltage $U_{i,nom}$	2 x 24 VDC
Input voltage range	18 ... 30 VDC
Input current I_i	Max. 20 A per path
Nominal output voltage $U_{o,nom}$	24 VDC
Efficiency	97 % (typ.)
Power loss P_v	1.5 W open circuit; 14 W nominal load (20 A); 26 W nominal load (40 A)
Feedback voltage	Max. 33 VDC
MTBF	> 500,000 h (acc. to IEC 61709)
Mechanical Data	
Weight	870 g
General Specifications	
Standards/Approvals	EN 60950, UL 60950, UL 508, EN 61000-6-2, EN 61000-6-3

Nominal input voltage $U_{i,nom}$	2 x 48 VDC
Input voltage range	36 ... 54 VDC
Input current I_i	Max. 20 A per path
Nominal output voltage $U_{o,nom}$	48 VDC
Efficiency	96 % (typ.)
Power loss P_v	1.7 W (48 VDC / no load); 20 W (48 VDC, rated load) (20 A); 40 W (48 VDC, rated load) (40 A);
Feedback voltage	Max. 60 VDC
MTBF	> 500,000 h (acc. to IEC 61709)
Mechanical Data	
Weight	860 g
General Specifications	
Standards/Approvals	EN 60950, UL 60950*, UL 508*, EN 61000-6-2, EN 61000-6-3 (* pending)

Nominal input voltage $U_{i,nom}$	2 x 48 VDC
Input voltage range	36 ... 54 VDC
Input current I_i	Max. 20 A per path
Nominal output voltage $U_{o,nom}$	48 VDC
Efficiency	96 % (typ.)
Power loss P_v	1.7 W (48 VDC / no load); 20 W (48 VDC, rated load) (20 A); 40 W (48 VDC, rated load) (40 A);
Feedback voltage	Max. 60 VDC
MTBF	> 500,000 h (acc. to IEC 61709)
Mechanical Data	
Weight	860 g
General Specifications	
Standards/Approvals	EN 60950, UL 60950*, UL 508*, EN 61000-6-2, EN 61000-6-3 (* pending)

Redundancy Modules

EPSITRON®

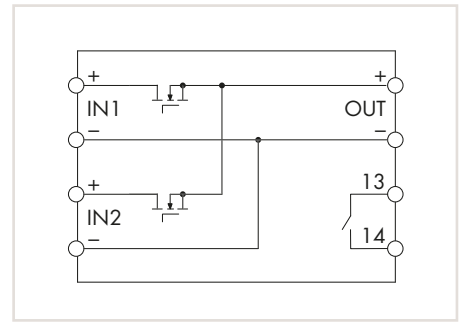
787 Series



Similar to pictured device

Features:

- Redundancy module with low-loss MOSFET decouples two power supplies
- For redundant and fail-safe power supply
- Continuous output current: 40 ADC, in any ratio of both inputs (e.g., 20 A/20 A or 0 A/40 A)
- Suitable for EPSITRON® Power Supplies with PowerBoost and TopBoost
- Same profile as EPSITRON® CLASSIC Power Supplies
- Connects to power supplies with electrically isolated output voltage (SELV) acc. to EN 60950-1/UL 60950-1; PELV acc. to EN 60204



EPSITRON® MOSFET Redundancy Module,
input voltage: 2 x 24 VDC,
max. input current: 40 A per path
output: 24 VDC / 40 A, signal contact

Item No.	Pack. Unit
787-1685	1

Technical Data

Input		
Nominal input voltage $U_{i, nom}$	2 x 24 VDC	
Input voltage range	2 x 10 ... 36 VDC	
Input current I_i	Max. 40 ADC (from one input path) or 20 ADC (via both input paths) PowerBoost: 60 ADC (for 4 s), 50 ADC (for 8 s) TopBoost: 100 ADC (for 50 ms)	
Output		
Nominal output voltage $U_{o, nom}$	24 VDC	
Output voltage range	10 ... 36 VDC	
Voltage drop	Max. 100 mV (Input/Output) Max. 40 ADC PowerBoost: 120 ADC (for 4 s); 100 ADC (for 8 s) TopBoost: 200 ADC (for 50 ms)	
Output Current	5 kHz	
Switching frequency	No	
Output current limitation	2 x LED green ($U_i > 10$ VDC)	
Operational indication	1 x isolated relay contact (DC OK)	
Signaling	Efficiency/Power Losses	
Efficiency	99.5 % (typ.)	
Power loss P_V	1.5 W (no load), < 9.5 W (nominal load)	
Fuse Protection		
Internal fuse	No	
General Specifications		
Standards/Approvals	EN 61204-3, EN 60950-1, UL 60950, UL 508, GL * (* pending)	
Environmental Requirements		
Ambient operating temperature	-40 ... +70 °C	
Storage temperature	-40 ... +85 °C	
Relative humidity	5 % ... 96 % (no condensation permissible)	
Derating	-1.5 % / K (> 65 °C)	
Degree of pollution	2 (acc. to EN 50178)	
Climatic category	3K3 (acc. to EN 60721)	

Safety and Protection

Test voltage	500 VDC (terminals to enclosure)
Protection class	III
Degree of protection	IP20 per EN 60529
Reverse voltage protection	Yes
Feedback voltage	Max. 37 VDC
Parallel operation	Yes
MTBF	> 500,000 h
Fire load	4.4 MJ
Connection and Type of Mounting	
Connectors	Input/Output: WAGO 831 Series Signaling: WAGO 721 Series
Conductor range	Input/Output: 0.5 ... 10 mm ² / 20 ... 8 AWG Signaling: 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input/Output: 13 ... 15 mm / 0.51 ... 0.59 inch Signaling: 8 ... 9 mm / 0.31 ... 0.35 inch
Type of mounting	DIN-rail mounting (EN 60715)
Dimensions and Weight	
Dimensions (mm) W x H x L	42 x 127 x 139.5, Length from upper-edge of DIN-35 rail
Weight	370 g

Electronic Circuit Breakers (ECB)

EPSITRON®

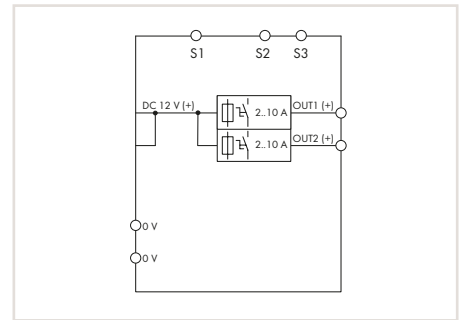
787 Series



Similar to pictured device

Features:

- Space-saving electronic circuit breaker with 2 channels
- 2 ... 10 A nominal current, adjustable for each channel via sealable selector switch
- Switch-on capacity > 50000 µF per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Status message for each channel via pulse sequence
- Remote input resets all tripped channels or switches on/off any number of channels via pulse sequence



EPSITRON® Electronic Circuit Breaker,
2-channel, input voltage: 12 VDC,
2 ... 10 A adjustable, communication capability

Item No.	Pack. Unit
787-1662/000-100	1

Technical Data

Input	
Nominal input voltage $U_{i, nom}$	12 VDC
Input voltage range	10 ... 16 VDC
Output	
Nominal output voltage $U_{o, nom}$	2 x 12 VDC
Nominal current	Max. 2 x 10 ADC 2, 3, 4, 6, 8, 10 A adjustable for each channel via selector switch)
Voltage drop	200 mV at 10 A
Trip time	Load-dependent (16 ms ... 100 s)
Switch-on capacity	> 50,000 µF per channel
Switch-on behavior	Time-delayed channel switching (load-dependent min. 50 ms to 5 s)
Active current limitation	No
Operational indication	LED green (OK channel) LED red (tripped channel)
Signaling	2 x LED (green/red/orange)
Remote input	Reactivation of all tripped channels via 9 ... 30 VDC pulse for min. 500 ms. Switching on/off any number of channels via pulse sequence.
Efficiency/Power Losses	
Efficiency	99 % (typ.)
Power loss P_V	0.53 W (stand-by) / 5.5 W (at 2 x 10 A)
Fuse Protection	
Internal fuse	15 AT per channel
General Specifications	
Standards/Approvals	UL 508 *, UL 2367 *, GL, EN 60950, EN 61000-6-2, EN 61000-6-3 (* pending)
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Derating	No derating
Degree of pollution	2 (acc. to EN 50178)

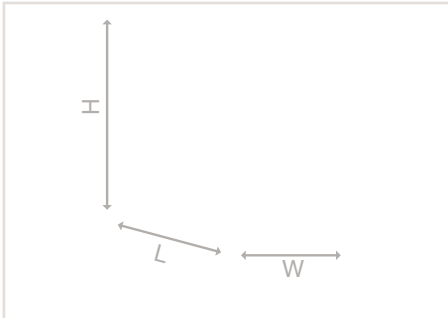
Safety and Protection

Test voltage	500 VDC (terminals to enclosure)
Protection class	III
Reverse voltage protection	No
Degree of protection	IP20 per EN 60529
Overvoltage protection	Via 33 V suppressor diode at input
Feedback voltage	Max. 35 VDC
Series connection of several devices	Not permitted
Parallel operation of single channels	Not permitted
Connection and Type of Mounting	
Connectors	Input (+): WAGO 831 Series Input (-), output, signaling: WAGO 721 Series
Conductor range	Input (+): 0.5 ... 10 mm ² / 20 ... 8 AWG Input (-), output, signaling: 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input (+): 13 ... 15 mm / 0.51 ... 0.59 inch Input (-), output, signaling: 8 ... 9 mm / 0.31 ... 0.35 inch
Type of mounting	DIN-rail mounting (EN 60715)
Dimensions and Weight	
Dimensions (mm) W x H x L	45 x 90 x 115.5, Length from upper-edge of DIN-35 rail
Weight	170 g

Electronic Circuit Breakers with Active Current Limitation

EPSITRON®

787 Series



Features:

- Space-saving electronic circuit breaker with 2 channels
- 0.5 ... 6 A nominal current, adjustable for each channel via sealable selector switch
- Active current limitation
- Switch-on capacity > 65000 µF per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Status message for each channel via pulse sequence
- Remote input resets all tripped channels or switches on/off any number of channels via pulse sequence

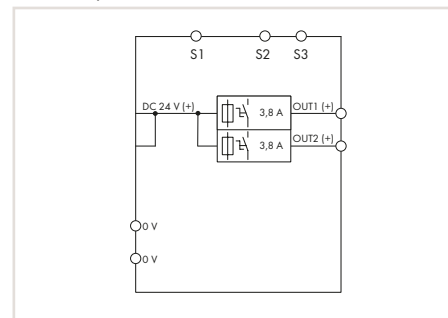
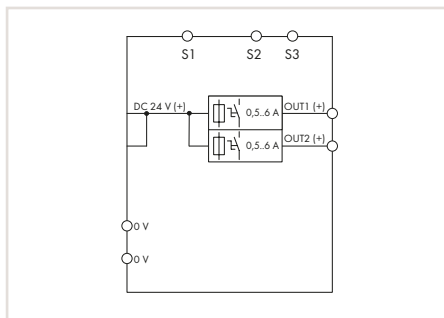
Technical Data

Input	
Nominal input voltage $U_{i,nom}$	24 VDC
Output	
Nominal output voltage $U_{o,nom}$	2 x 24 VDC
Trip time	Load-dependent (16 ms ... 5 s)
Switch-on capacity	> 65000 µF per channel
Switch-on behavior	Time-delayed switching of channels (load-dependent min. 50 ms to 5 s)
Active current limitation	Yes
Operational indication	LED green (OK channel) LED red (tripped channel)
Signaling	2 x LED (green/red/orange)
Remote input	Reactivation of all tripped channels via pulse sequence, 15 ... 30 VDC for min. 500 ms Switching on/off any number of channels via pulse sequence
Efficiency/Power Losses	
Efficiency	99 % (typ.)
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Derating	No derating
Safety and Protection	
Test voltage	500 VDC (terminals to enclosure)
Protection class	III
Reverse voltage protection	No
Degree of protection	IP20 per EN 60529
Overvoltage protection	Via 33 V suppressor diode at input
Series connection of several devices	Not permitted
Parallel operation of single channels	Not permitted
Connection and Type of Mounting	
Connectors	Input (+): WAGO 831 Series Input (-), output, signaling: WAGO 721 Series
Conductor range	Input (+): 0.5 ... 10 mm ² / 20 ... 8 AWG Input (-), output, signaling: 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input (+): 13 ... 15 mm ² / 0.51 ... 0.59 inch Input (-), output, signaling: 8 ... 9 mm / 0.31 ... 0.35 inch
Type of mounting	DIN-rail mounting (EN 60715)
Dimensions and Weight	
Dimensions (mm) W x H x L	45 x 90 x 115.5, Length from upper-edge of DIN-35 rail
Weight	170 g

5



Similar to pictured device



EPSITRON® Electronic Circuit Breaker, 2-channel, input voltage: 24 VDC, 0.5 ... 6 A adjustable, active current limitation, communication capability

Item No.	Pack. Unit
787-1662/006-1000	1

EPSITRON® Electronic Circuit Breaker, 2-channel, input voltage: 24 VDC, 3.8 A, active current limitation, NEC Class 2, communication capability

Item No.	Pack. Unit
787-1662/004-1000	1

Electrical Data

Input voltage range	18 ... 30 VDC
Nominal current	Max. 2 x 6 ADC, (0.5, 1, 2, 3, 4, 6 A adjustable for each channel via selector switch)
Voltage drop	Voltage drop 145 mV at 6 A
Power loss P_v	0.55 W (stand-by) / 2.5 W (nominal load)
Internal fuse	15 AT per channel
Degree of pollution	2 (acc. to EN 50178)
Feedback voltage	Max. 35 VDC

General Specifications

Standards/Approvals	UL 508, UL 2367, GL, EN 60950, EN 61000-6-2, EN 61000-6-3
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Input voltage range	20 ... 28.8 VDC
Nominal current	2 x 3.8 ADC, NEC Class 2 (at 20 ... 24 VDC); 2 x 3.2 ADC, NEC Class 2 (at 28 VDC) fixed nominal current
Voltage drop	125 mV at 3.8 A
Power loss P_v	0.65 W (stand-by) / 1.6 W (at 2 x 3.8 A)
Internal fuse	None
Degree of pollution	2 (acc. to EN 50178)
Feedback voltage	Max. 28.8 VDC

Standards/Approvals	UL 508, UL 2367, GL *, EN 60950, EN 61000-6-2, EN 61000-6-3 (* pending)
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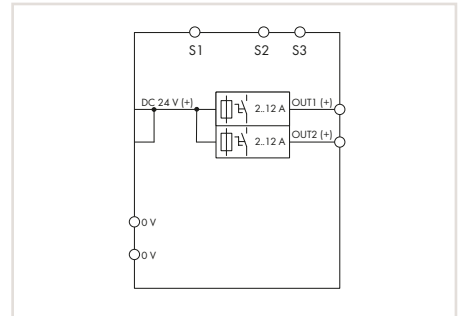
Electronic Circuit Breakers with Active Current Limitation

EPSITRON®

787 Series



Similar to pictured device



EPSITRON® Electronic Circuit Breaker,
2-channel, input voltage: 24 VDC,
2 ... 12 A adjustable, active current limitation,
communication capability

Item No.	Pack. Unit
787-1662/212-1000	1

Electrical Data

Input voltage range	18 ... 30 VDC
Nominal current	Max. 2 x 12 ADC, (2, 4, 6, 8, 10, 12 A adjustable for each channel via selector switch)
Voltage drop	210 mV at 12 A
Power loss P_v	0.55 W (stand-by) / 5.6 W (at 2 x 12 A)
Internal fuse	15 AT per channel
Degree of pollution	2 (acc. to EN 50178)
Feedback voltage	Max. 35 VDC

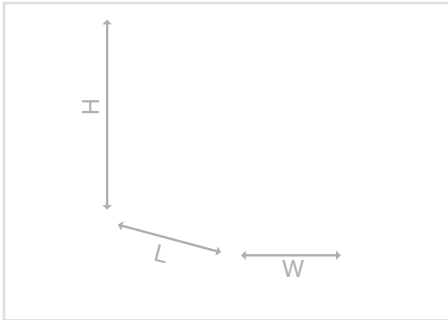
General Specifications

Standards/Approvals	UL 508, UL 2367, GL *, EN 60950, EN 61000-6-2, EN 61000-6-3 (* pending)
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Electronic Circuit Breakers without Active Current Limitation

EPSITRON®

787 Series

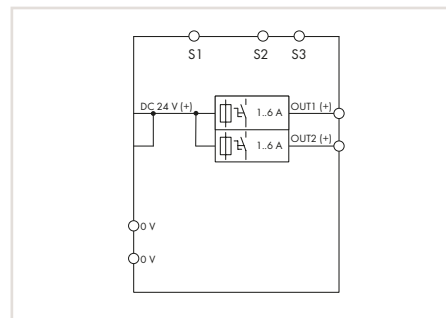
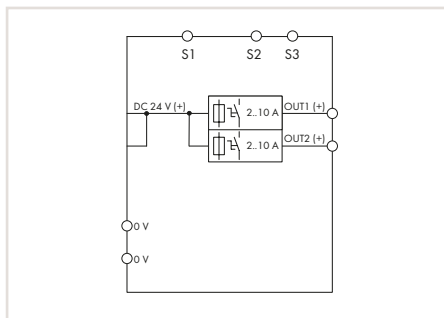


Features:

- Space-saving electronic circuit breaker with 2 channels
 - 2 ... 10 A nominal current, adjustable for each channel via sealable selector switch
 - Switch-on capacity > 50000 µF per channel
 - One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
 - Time-delayed switching of channels
 - Tripped message (group signal)
 - Status message for each channel via pulse sequence (only devices with communication capability)
 - Remote input for switching on/off any number of channels via pulse sequence (only devices having communication capability)
- Note: The pulse sequence only supports devices which are designated as having "communication capability"

Technical Data

Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC
Output	
Nominal output voltage $U_{o, \text{nom}}$	2 x 24 VDC
Trip time	Load-dependent (16 ms ... 100 s)
Switch-on capacity	> 50000 µF per channel
Switch-on behavior	Time-delayed switching of channels (load-dependent min. 50 ms to 5 s)
Active current limitation	No
Operational indication	LED green (OK channel), LED red (tripped channel)
Signaling	2 x LED (green/red/orange)
	Reactivation of all tripped channels via 15 ... 30 VDC impulse sequence for min. 500 ms.
	Switching on/or any number of channels via pulse sequence possible (except devices with potential-free signal contact, 787-166x/xxx-xx5x).
Remote input	
Efficiency/Power Losses	
Efficiency	99 % (typ.)
Fuse Protection	
Internal fuse	15 AT per channel
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Derating	No derating
Safety and Protection	
Test voltage	500 VDC (terminals to enclosure)
Protection class	III
Reverse voltage protection	No
Degree of protection	IP20 per EN 60529
Overvoltage protection	Via 33 V suppressor diode at input
Feedback voltage	Max. 35 VDC
Series connection of several devices	Not permitted
Parallel operation of single channels	Not permitted
Connection and Type of Mounting	
Connectors	Input (+): WAGO 831 Series Input (-), output, signaling: WAGO 721 Series
Conductor range	Input (+): 0.5 ... 10 mm ² / 20 ... 8 AWG Input (-), output, signaling: 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input (+): 13 ... 15 mm ² / 0.51 ... 0.59 inch Input (-), output, signaling: 8 ... 9 mm / 0.31 ... 0.35 inch
Type of mounting	DIN-rail mounting (EN 60715)
Dimensions and Weight	
Dimensions (mm) W x H x L	45 x 90 x 115.5, Length from upper-edge of DIN-35 rail
Weight	170 g



EPSITRON® Electronic Circuit Breaker, 2-channel, input voltage: 24 VDC, 2 ... 10 A adjustable, communication capability

Item No.	Pack. Unit
787-1662	1

EPSITRON® Electronic Circuit Breaker, 2-channel, input voltage: 24 VDC, 1 ... 6 A adjustable, communication capability

Item No.	Pack. Unit
787-1662/106-000	1

Electrical Data

Nominal current

Max. 2 x 10 ADC, (2, 3, 4, 6, 8, 10 A adjustable for each channel via selector switch)

2 x 6 ADC (max), (1, 2, 3, 4, 5, 6 A adjustable for each channel via selector switch)

Factory preset

Voltage drop

200 mV at 10 A

120 mV at 6 A

Power loss P_v

0.85 W (stand-by) / 5.5 W (nominal load)

0.85 W (stand-by) / 2.5 W (nominal load)

Degree of pollution

2 (acc. to EN 50178)

2 (acc. to EN 50178)

General Specifications

Standards/Approvals

UL 508, UL 2367, GL, EN 60950, EN 61000-6-2, EN 61000-6-3

UL 508, UL 2367, GL, EN 60950, EN 61000-6-2, EN 61000-6-3

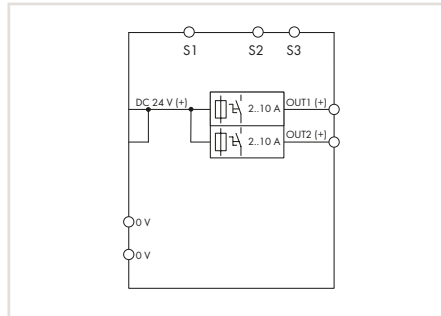
Electronic Circuit Breakers without Active Current Limitation

EPSITRON®

787 Series



Similar to pictured device



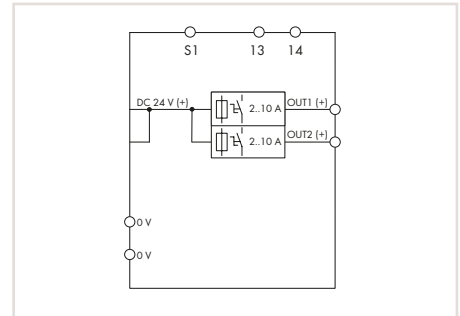
EPSITRON® Electronic Circuit Breaker, 2-channel, input voltage: 24 VDC, 2 ... 10 A adjustable, communication capability, specialty configuration

Item No.	Pack. Unit
787-1662/000-004	1

Group signal S3 reports "channel switched off" and "tripped channel"



Similar to pictured device



EPSITRON® Electronic Circuit Breaker, 2-channel, input voltage: 24 VDC, 2 ... 10 A adjustable, potential-free signal contact 13/14, specialty configuration

Item No.	Pack. Unit
787-1662/000-054	1

Potential-free signal contact 13 / 14 reports "channel switched off" and "tripped channel"; does not support communication via pulse sequence

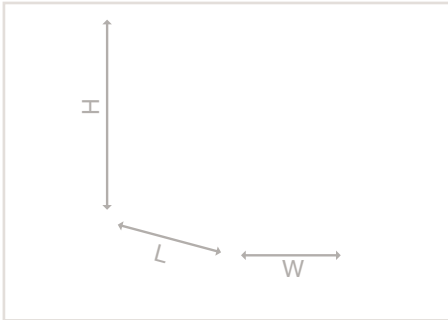
Electrical Data

Nominal current	Max. 2 x 10 ADC, (2, 3, 4, 6, 8, 10 A adjustable for each channel via selector switch)	Max. 2 x 10 ADC, (2, 3, 4, 6, 8, 10 A adjustable for each channel via selector switch)
Factory preset	2 ADC (when switched off)	2 ADC (when switched off)
Voltage drop	200 mV at 10 A	200 mV at 10 A
Power loss P _v	0.84 W (stand-by) / 5.5 W (at 2 x 10 A)	0.84 W (stand-by) / 5.5 W (at 2 x 10 A)
Degree of pollution	2 (acc. to EN 50178)	2 (acc. to EN 50178)
General Specifications		
Signaling		Potential-free signal contact 13 / 14, max. 58 VDC / 40 A AC, 100 mA
Standards/Approvals	UL 508, UL 2367, GL, EN 60950, EN 61000-6-2, EN 61000-6-3	UL 508 *, UL 2367 *, GL *, EN 60950, EN 61000-6-2, EN 61000-6-3 (* pending)

Electronic Circuit Breakers (ECB)

EPSITRON®

787 Series



Features:

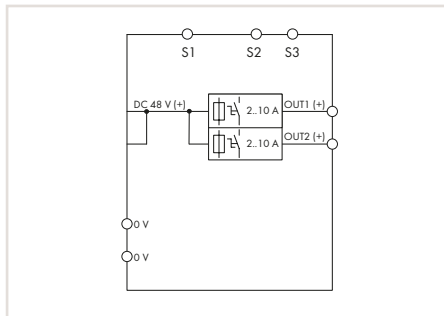
- Space-saving electronic circuit breaker with 2 channels
 - 2 ... 10 A nominal current, adjustable for each channel via sealable selector switch
 - Switch-on capacity > 23000 µF per channel
 - One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
 - Time-delayed switching of channels
 - Tripped message (group signal)
 - Status message for each channel via pulse sequence (only devices with communication capability)
 - Remote input resets all tripped channels
 - Remote input for switching on/off any number of channels via pulse sequence (only devices with communication capability)
- Note: The pulse sequence only supports devices which are designated as having "communication capability"

Technical Data

Input	
Nominal input voltage $U_{i, \text{nom}}$	48 VDC
Input voltage range	32 ... 58 VDC
Output	
Nominal output voltage $U_{o, \text{nom}}$	2 x 48 VDC
Nominal current	Max. 2 x 10 ADC, (2, 3, 4, 6, 8, 10 A adjustable for each channel via selector switch)
Voltage drop	175 mV at 10 A
Trip time	Load-dependent (16 ms ... 100 s)
Switch-on capacity	> 23000 µF per channel at 48 VDC, 2.5 mm ² cable cross-section and 2.5 m cable length
Switch-on behavior	Time-delayed switching of channels (load-dependent min. 50 ms to 5 s)
Active current limitation	No
Operational indication	LED green (OK channel), LED red (tripped channel)
Signaling	2 x LED (green/red/orange)
Efficiency/Power Losses	
Efficiency	99 % (typ.)
Power loss P_V	0.84 W (stand-by) / 4.5 W (at 2 x 10 A)
Fuse Protection	
Internal fuse	15 AT per channel
General Specifications	
Standards/Approvals	UL 508 *, UL 2367 *, GL *, EN 60950, EN 61000-6-2, EN 61000-6-3 (* pending)
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Derating	No derating
Degree of pollution	2 (acc. to EN 50178)
Safety and Protection	
Test voltage	500 VDC (terminals to enclosure)
Protection class	III
Reverse voltage protection	No
Degree of protection	IP20 per EN 60529
Overvoltage protection	Via 68 V suppressor diode at input
Feedback voltage	Max. 58 VDC
Series connection of several devices	Not permitted
Parallel operation of single channels	Not permitted
Connection and Type of Mounting	
Connectors	Input (+): WAGO 831 Series Input (-), output, signaling: WAGO 721 Series
Conductor range	Input (+): 0.5 ... 10 mm ² / 20 ... 8 AWG Input (-), output, signaling: 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input (+): 13 ... 15 mm / 0.51 ... 0.59 inch Input (-), output, signaling: 8 ... 9 mm / 0.31 ... 0.35 inch
Type of mounting	DIN-rail mounting (EN 60715)
Dimensions and Weight	
Dimensions (mm) W x H x L	45 x 90 x 115.5, Length from upper-edge of DIN-35 rail
Weight	170 g



Similar to pictured device

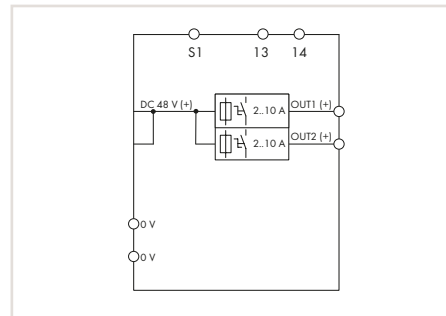


EPSITRON® Electronic Circuit Breaker, 2-channel, input voltage: 48 VDC, 2 ... 10 A adjustable, communication capability

Item No.	Pack. Unit
787-1662/000-200	1



Similar to pictured device



EPSITRON® Electronic Circuit Breaker, 2-channel, input voltage: 48 VDC, 2 ... 10 A adjustable, potential-free signal contact 13/14

Item No.	Pack. Unit
787-1662/000-250	1

Potential-free signal contact 13 / 14 reports "channel switched off" and "tripped channel"; does not support communication via pulse sequence

Electrical Data

Remote input	Reactivation of all tripped channels via 15 ... 58 VDC pulse for min. 500 ms Switching on/off any number of channels via pulse sequence
Signaling	

	Reactivation of all tripped channels via 15 ... 58 VDC pulse for min. 500 ms
	Potential-free signal contact 13 / 14, max. 58 VDC / 40 A AC, 100 mA

Electronic Circuit Breakers (ECB)

EPSITRON®

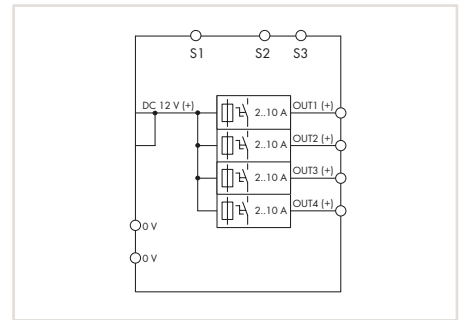
787 Series



Similar to pictured device

Features:

- Space-saving electronic circuit breaker with 4 channels
- 2 ... 10 A nominal current, adjustable for each channel via sealable selector switch
- Switch-on capacity > 50000 μ F per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
- Time-delayed switching of channels
- Tripped message (group signal)
- Status message for each channel via pulse sequence
- Remote input resets all tripped channels or switches on/off any number of channels via pulse sequence



EPSITRON® Electronic Circuit Breaker, 4-channel, input voltage: 12 VDC, 2 ... 10 A adjustable, communication capability

Item No.	Pack. Unit
787-1664/000-100	1

Technical Data

Input	
Nominal input voltage $U_{i, nom}$	12 VDC
Input voltage range	10 ... 16 VDC
Output	
Nominal output voltage $U_{o, nom}$	4 x 12 VDC
Nominal current	Max. 4 x 10 ADC, (2, 3, 4, 6, 8, 10 A adjustable for each channel via selector switch)
Voltage drop	200 mV at 10 A
Trip time	Load-dependent (16 ms ... 100 s)
Switch-on capacity	> 50,000 μ F per channel
Switch-on behavior	Time-delayed switching of channels (load-dependent min. 50 ms to 5 s)
Active current limitation	No
Operational indication	LED green (OK channel) LED red (tripped channel)
Signaling	4 x LED (green/red/orange)
Remote input	Reactivation of all tripped channels via 9 ... 30 VDC pulse for min. 500 ms. Switching on/off any number of channels via pulse sequence
Efficiency/Power Losses	
Efficiency	99 % (typ.)
Power loss P_v	0.53 W (stand-by) / 10 W (at 4 x 10 A)
Fuse Protection	
Internal fuse	15 AT per channel
General Specifications	
Standards/Approvals	UL 508*, UL 2367*, GL, EN 60950, EN 61000-6-2, EN 61000-6-3 (*pending)
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Derating	$\geq +50$ °C: see instruction manual
Degree of pollution	2 (acc. to EN 50178)

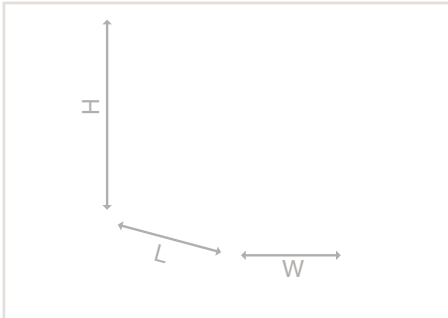
Safety and Protection

Test voltage	500 VDC (terminals to enclosure)
Protection class	III
Reverse voltage protection	No
Degree of protection	IP20 per EN 60529
Overvoltage protection	Via 33 V suppressor diode at input
Feedback voltage	Max. 35 VDC
Series connection of several devices	Not permitted
Parallel operation of single channels	Not permitted
Connection and Type of Mounting	
Connectors	Input (+): WAGO 831 Series Input (-), output, signaling: WAGO 721 Series
Conductor range	Input (+): 0.5 ... 10 mm ² / 20 ... 8 AWG Input (-), output, signaling: 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input (+): 13 ... 15 mm / 0.51 ... 0.59 inch Input (-), output, signaling: 8 ... 9 mm / 0.31 ... 0.35 inch
Type of mounting	DIN-rail mounting (EN 60715)
Dimensions and Weight	
Dimensions (mm) W x H x L	45 x 90 x 115.5, Length from upper-edge of DIN-35 rail
Weight	170 g

Electronic Circuit Breakers with Active Current Limitation

EPSITRON®

787 Series



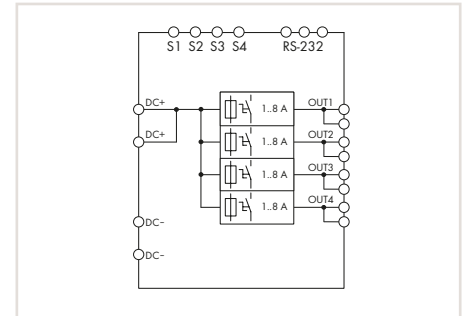
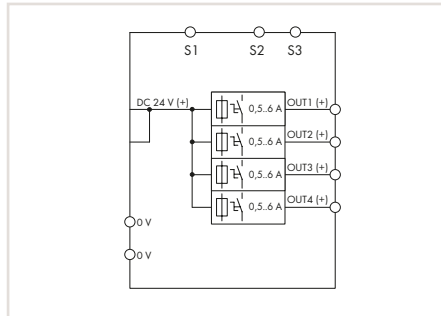
Features:

- Space-saving electronic circuit breaker with 4 channels
- 0.5 ... 6 A nominal current, adjustable for each channel via sealable selector switch
- Active current limitation
- High switch-on capacity per channel
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics (787-1664/xxx-1xxx), alternatively with display and function buttons (787-861)
- Time-delayed switching of channels
- Tripped message (group signal)
- Status message for each channel via pulse sequence (only devices with communication capability)
- Remote input resets all tripped channels
- Remote input for switching on/off any number of channels via pulse sequence (only devices with communication capability, 787-1664/xxx-100x)
- Current and voltage monitoring via RS-232 interface and LCD (only 787-861)
- 4 active signal outputs for watchdog functions (only 787-861)

Technical Data

Input	
Nominal input voltage $U_{i,nom}$	24 VDC
Output	
Nominal output voltage $U_{o,nom}$	4 x 24 VDC
Active current limitation	Yes
Environmental Requirements	
Storage temperature	-25 ... +85 °C
Derating	No derating
Safety and Protection	
Test voltage	500 VDC (terminals to enclosure)
Protection class	III
Reverse voltage protection	No
Degree of protection	IP20 per EN 60529
Oversoltage protection	Via 33 V suppressor diode at input
Series connection of several devices	Not permitted
Parallel operation of single channels	Not permitted
Connection and Type of Mounting	
Conductor range	Input (+): 0.5 ... 10 mm ² / 20 ... 8 AWG Input (-), output, signaling: 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input (+): 13 ... 15 mm / 0.51 ... 0.59 inch Input (-), output, signaling: 8 ... 9 mm / 0.31 ... 0.35 inch
Type of mounting	DIN-rail mounting (EN 60715)

5



EPSITRON® Electronic Circuit Breaker,
4-channel, input voltage: 24 VDC,
0.5 ... 6 A adjustable, active current limitation,
communication capability

Item No.	Pack. Unit
787-1664/006-1000	1

EPSITRON® Electronic Circuit Breaker,
4-channel, input voltage: 24 VDC,
1 ... 8 A adjustable, active current limitation,
RS-232 interface

Item No.	Pack. Unit
787-861	1

Electrical Data

Input voltage range	18 ... 30 VDC	18 ... 30 VDC
Nominal current	Max. 4 x 6 ADC, (0.5, 1, 2, 3, 4, 6 A adjustable for each channel via selector switch)	4 x 1 ... 8 ADC (adjustable for each channel in 1 A steps)
Voltage drop	145 mV at 6 A	140 mV at 8 A
Trip time	Load-dependent (16 ms ... 5 s)	100 ms (100 ms ... 1.5 s; adjustable, depending on nominal current)
Switch-on capacity	> 65,000 µF per channel	20,000 µF (max.)
Switch-on behavior	Time-delayed channel switching (load-dependent min. 50 ms to 5 s)	Time-delayed channel switching (250 ms each)
Operational indication	LED green (OK channel) LED red (tripped channel)	LED green (all channels OK), LED yellow (warning), LED red (at least one channel has tripped)
Signaling	4 x LED (green/red/orange)	LCD, 4 x signal output 24 VDC, 25 mA
LineMonitor, parameter setting		via LCD and RS-232 serial interface
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms Switching on/off any number of channels via pulse sequence.	
Efficiency	99 % (typ.)	96 % (typ.)
Power loss P _v	0.77 W (stand-by) / 4.3 W (nominal load)	2 W (stand-by) / 8.2 W (nominal load)
Internal fuse	15 AT per channel	15 AT
Ambient operating temperature	-25 ... +70 °C	-25 ... +60 °C
Relative humidity	5 % ... 96 % (no condensation permissible)	5 % ... 96 % (no condensation permissible)
Feedback voltage	Max. 35 VDC	Max. 33 VDC
Connectors	Input (+): WAGO 831 Series Input (-), output, signaling: WAGO 721 Series	Input (+): WAGO 831 Series Input (-), output, signaling: WAGO 231 Series
Mechanical Data		
Dimensions (mm) W x H x L	45 x 90 x 115.5, Length from upper-edge of DIN-35 rail	40 x 171 x 163, Length from upper-edge of DIN-35 rail
Weight	170 g	800 g
General Specifications		
Standards/Approvals	UL 508, UL 2367, GL, EN 60950, EN 61000-6-2, EN 61000-6-3	EN 60950, UL 508, EN 61000-6-2, EN 61000-6-3

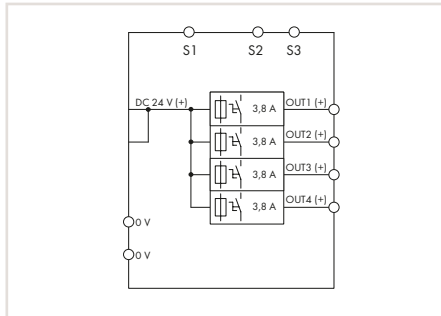
Electronic Circuit Breakers with Active Current Limitation

EPSITRON®

787 Series



Similar to pictured device

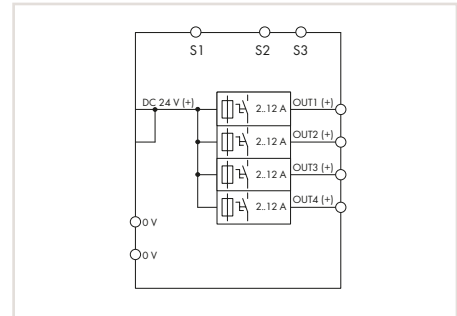


EPSITRON® Electronic Circuit Breaker, 4-channel, input voltage: 24 VDC, 3.8 A, active current limitation, NEC Class 2, communication capability

Item No.	Pack. Unit
787-1664/004-1000	1



Similar to pictured device



EPSITRON® Electronic Circuit Breaker, 4-channel, input voltage: 24 VDC, 2 ... 12 A adjustable, active current limitation, communication capability

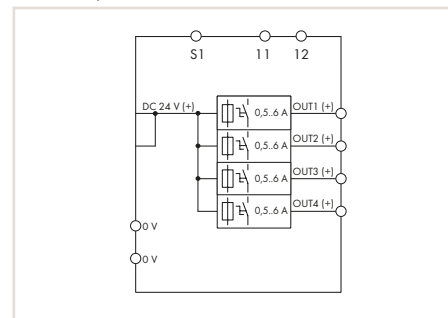
Item No.	Pack. Unit
787-1664/212-1000	1

5

Electrical Data	
Input voltage range	20 ... 28.8 VDC
Nominal current	4 x 3.8 ADC, NEC Class 2 (at 20 ... 24 VDC); 4 x 3.2 A, NEC Class 2 (at 28 VDC) fixed nominal current
Voltage drop	150 mV at 3.8 A
Trip time	Load-dependent (16 ms ... 5 s)
Switch-on capacity	> 65,000 µF per channel
Switch-on behavior	Time-delayed switching of channels (load-dependent min. 50 ms to 5 s)
Operational indication	LED green (OK channel) LED red (tripped channel)
Signaling	4 x LED (green/red/orange)
LineMonitor, parameter setting	
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms Switching on/off any number of channels via pulse sequence.
Efficiency	99 % (typ.)
Power loss P _v	0.82 W (stand-by) / 3.1 W (at 4 x 3.8 A)
Internal fuse	None
Ambient operating temperature	-25 ... +70 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Feedback voltage	Max. 28.8 VDC
Connectors	Input (+): WAGO 831 Series Input (-), output, signaling: WAGO 721 Series
Mechanical Data	
Dimensions (mm) W x H x L	45 x 90 x 115.5, Length from upper-edge of DIN-35 rail
Weight	170 g
General Specifications	
Standards/Approvals	UL 508, UL 2367, GL *, EN 60950, EN 61000-6-2, EN 61000-6-3 (* pending)



Similar to pictured device



EPSITRON® Electronic Circuit Breaker,
4-channel, input voltage: 24 VDC,
0.5 ... 6 A adjustable, active current limitation,
potential-free signal contact 11/12, specialty
configuration

Item No.	Pack. Unit
787-1664/006-1054	1

Potential-free signal contact 11 / 12 reports "channel switched off" and "tripped channel"; does not support communication via pulse sequence

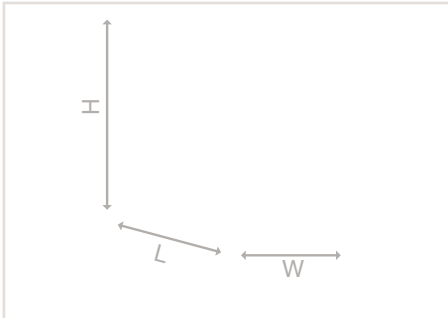
Electrical Data

Input voltage range	18 ... 30 VDC
Nominal current	Max. 4 x 6 ADC, (0.5, 1, 2, 3, 4, 6 A adjustable for each channel via selector switch)
Voltage drop	145 mV at 6 A
Trip time	Load-dependent (16 ms ... 5 s)
Switch-on capacity	> 58,000 µF per channel
Switch-on behavior	Time-delayed switching of channels (load-dependent min. 50 ms to 5 s)
Operational indication	LED green (OK channel) LED red (tripped channel)
Signaling	4 x LED (green/red/orange) Potential-free signal contact 11 / 12, max. 58 VDC / 40 A AC, 100 mA
LineMonitor, parameter setting	
Remote input	Reactivation of all tripped channels via 15 ... 30 VDC pulse for min. 500 ms
Efficiency	99 % (typ.)
Power loss P_V	0.77 W (stand-by) / 4.3 W (at 4 x 6 A)
Internal fuse	15 AT per channel
Ambient operating temperature	-25 ... +70 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Feedback voltage	Max. 35 VDC
Connectors	Input (+): WAGO 831 Series Input (-), output, signaling: WAGO 721 Series
Mechanical Data	
Dimensions (mm) W x H x L	45 x 90 x 115.5, Length from upper-edge of DIN-35 rail
Weight	170 g
General Specifications	
Standards/Approvals	UL 508, UL 2367, GL *, EN 60950, EN 61000-6-2, EN 61000-6-3 (* pending)

Electronic Circuit Breakers without Active Current Limitation

EPSITRON®

787 Series



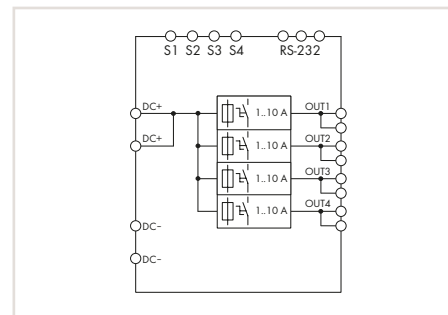
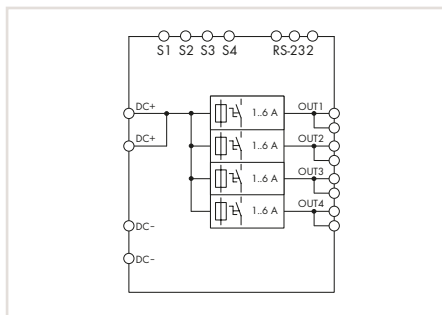
Features:

- Electronic circuit breaker with 4 channels, parameterizable
- Time-delayed switching of channels
- Potential-free signal contact (only 787-860, -862, -1664/xxx-xx5x)
- Current and voltage monitoring via RS-232 interface and LCD (only 787-860, -862)
- 4 active signal outputs for watchdog functions (only 787-860, -862)
- Tripped message (group signal)
- Remote input resets all tripped channels
- One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics (787-1664/xxx-xxxx)
- Status message for each channel via pulse sequence (only devices with communication capability, 787-1664/xxx-xx0x)
- Remote input for switching on/off any number of channels via pulse sequence (only devices with communication capability, 787-1664/xxx-xx0x)

Technical Data

Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC
Output	
Nominal output voltage $U_{o, \text{nom}}$	4 x 24 VDC
Active current limitation	No
Safety and Protection	
Test voltage	500 VDC (terminals to enclosure)
Protection class	III
Reverse voltage protection	No
Degree of protection	IP20 per EN 60529
Overvoltage protection	Via suppressor diode at input
Feedback voltage	Max. 33 VDC
Series connection of several devices	Not permitted
Parallel operation of single channels	Not permitted
Connection and Type of Mounting	
Conductor range	Input (+): 0.5 ... 10 mm ² / 20 ... 8 AWG Input (-), output, signaling: 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input (+): 13 ... 15 mm ² / 0.51 ... 0.59 inch Input (-), output, signaling: 8 ... 9 mm / 0.31 ... 0.35 inch
Type of mounting	DIN-rail mounting (EN 60715) in 2 positions

5



EPSITRON® Electronic Circuit Breaker,
4-channel, input voltage: 24 VDC,
1 ... 6 A adjustable, RS-232 interface

	Item No.	Pack. Unit
	787-860	1

EPSITRON® Electronic Circuit Breaker,
4-channel, input voltage: 24 VDC,
1 ... 10 A adjustable, RS-232 interface

	Item No.	Pack. Unit
	787-862	1

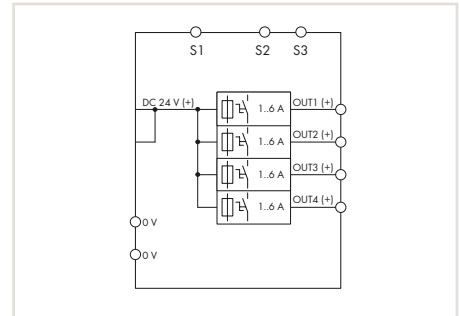
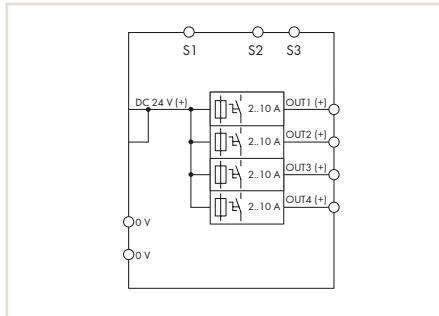
Electrical Data

Nominal current	4 x 1 ... 6 ADC (adjustable for each channel in 1 A steps)	4 x 1 ... 10 ADC (adjustable for each channel in 1 A steps)
Factory preset		
Voltage drop	140 mV at 6 A	140 mV at 6 A; 240 mV at 10 A
Trip time	100 s (100 ms .. 600 s; adjustable)	100 s (100 ms .. 600 s; adjustable)
Switch-on capacity	20,000 µF (max.)	20,000 µF (max.)
Switch-on behavior	Time-delayed channel switching (250 ms each)	Time-delayed channel switching (250 ms each)
Operational indication	LED green (all channels OK), LED yellow (warning), LED red (at least one channel has tripped)	LED green (all channels OK), LED yellow (warning), LED red (at least one channel has tripped)
Signaling	LCD, 4 x 24 VDC signal output, 25 mA	LCD, 4 x 24 VDC signal output, 25 mA
Remote input	Reactivation of all tripped channels via 18 ... 30 VDC pulse for min. 50 ms	Reactivation of all tripped channels via 18 ... 30 VDC pulse for min. 50 ms
LineMonitor, parameter setting	via LCD and RS-232 serial interface	via LCD and RS-232 serial interface
Efficiency	96 % (typ.)	96 % (typ.)
Power loss P _v	2 W (stand-by) / 5.5 W (nominal load)	2 W (stand-by) / 12 W (nominal load)
Internal fuse	15 AT	15 AT
Ambient operating temperature	-10 ... +60 °C	-10 ... +60 °C
Storage temperature	-25 ... +85 °C	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)	5 % ... 96 % (no condensation permissible)
Derating		
Degree of pollution		
Connectors	Input (+): WAGO 831 Series Input (-), output, signaling: WAGO 231 Series	Input (+): WAGO 831 Series Input (-), output, signaling: WAGO 231 Series
Mechanical Data		
Dimensions (mm) W x H x L	40 x 171 x 163, Length from upper-edge of DIN-35 rail	40 x 171 x 163, Length from upper-edge of DIN-35 rail
Weight	800 g	800 g
General Specifications		
Standards/Approvals	EN 60950, UL 508, EN 61000-6-2, EN 61000-6-3	EN 60950, UL 508, EN 61000-6-2, EN 61000-6-3

Electronic Circuit Breakers without Active Current Limitation

EPSITRON®

787 Series



EPSITRON® Electronic Circuit Breaker,
4-channel, input voltage: 24 VDC,
2 ... 10 A adjustable, communication capability

Item No.	Pack. Unit
787-1664	1

EPSITRON® Electronic Circuit Breaker,
4-channel, input voltage: 24 VDC,
1 ... 6 A adjustable, communication capability

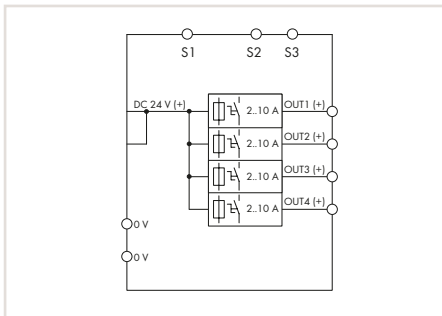
Item No.	Pack. Unit
787-1664/106-000	1

Electrical Data

Nominal current	Max. 4 x 10 ADC, (2, 3, 4, 6, 8, 10 A adjustable for each channel via selector switch)	Max. 4 x 6 ADC, (1, 2, 3, 4, 5, 6 A adjustable for each channel via selector switch)
Factory preset		
Voltage drop	200 mV at 10 A	120 mV at 6 A
Trip time	Load-dependent (16 ms ... 100 s)	Load-dependent (16 ms ... 100 s)
Switch-on capacity	> 50,000 µF per channel	> 50,000 µF per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)	Time-delayed switching of channels (load-dependent min. 50 ms to 5 s)
Operational indication	LED green (channel OK), LED red (tripped channel)	LED green (OK channel) LED red (tripped channel)
Signaling	4 x LED (green/red/orange)	4 x LED (green/red/orange)
Remote input	Reactivation of all tripped channels via pulse sequence, 15 ... 30 VDC for min. 500 ms Switching on/off any number of channels via pulse sequence.	Reactivation of all tripped channels via pulse sequence, 15 ... 30 VDC for min. 500 ms Switching on/off any number of channels via pulse sequence.
LineMonitor, parameter setting		
Efficiency	99 % (typ.)	99 % (typ.)
Power loss P_v	0.84 W (stand-by) / 10 W (at 4 x 10 A)	0.84 W (stand-by) / 4.2 W (at 4 x 6 A)
Internal fuse	15 AT per channel	15 AT per channel
Ambient operating temperature	-25 ... +70 °C	-25 ... +70 °C
Storage temperature	-25 ... +85 °C	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)	5 % ... 96 % (no condensation permissible)
Derating	≥ +50 °C: see instruction manual	No derating
Degree of pollution		
Connectors	Input (+): WAGO 831 Series Input (-), output, signaling: WAGO 721 Series	Input (+): WAGO 831 Series Input (-), output, signaling: WAGO 721 Series
Mechanical Data		
Dimensions (mm) W x H x L	45 x 90 x 115.5, Length from upper-edge of DIN-35 rail	45 x 90 x 115.5, Length from upper-edge of DIN-35 rail
Weight	170 g	170 g
General Specifications		
Standards/Approvals	UL 508, UL 2367, GL, EN 60950, EN 61000-6-2, EN 61000-6-3	UL 508, UL 2367, GL, EN 60950, EN 61000-6-2, EN 61000-6-3



Similar to pictured device



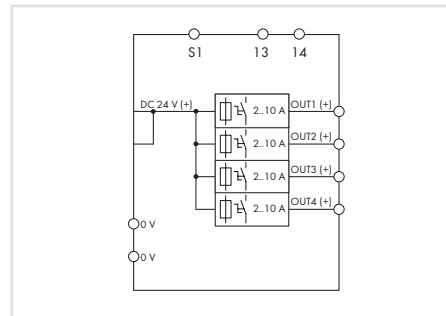
EPSITRON® Electronic Circuit Breaker, 4-channel, input voltage: 24 VDC, 2 ... 10 A adjustable, communication capability, speciality configuration

Item No.	Pack. Unit
787-1664/000-004	1

Group signal S3 reports "channel switched off" and "tripped channel"



Similar to pictured device



EPSITRON® Electronic Circuit Breaker, 4-channel, input voltage: 24 VDC, 2 ... 10 A adjustable, potential-free signal contact 13/14, speciality configuration

Item No.	Pack. Unit
787-1664/000-054	1

Potential-free signal contact 13 / 14 reports "channel switched off" and "tripped channel"; does not support communication via pulse sequence

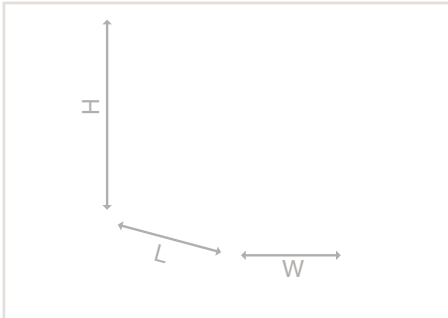
Electrical Data

Nominal current	Max. 4 x 10 ADC, (2, 3, 4, 6, 8, 10 A adjustable for each channel via selector switch)	Max. 4 x 10 ADC, (2, 3, 4, 6, 8, 10 A adjustable for each channel via selector switch)
Factory preset	2 ADC (when switched off)	2 ADC (when switched off)
Voltage drop	200 mV at 10 A	200 mV at 10 A
Trip time	Load-dependent (16 ms ... 100 s)	Load-dependent (16 ms ... 100 s)
Switch-on capacity	> 50,000 µF per channel	> 50,000 µF per channel
Switch-on behavior	Time-delayed channel switching (load-dependent, min. 50 ms / max. 5 s)	Time-delayed switching of channels (load-dependent min. 50 ms to 5 s)
Operational indication	LED green (channel OK), LED red (tripped channel)	LED green (OK channel), LED red (tripped channel)
Signaling	4 x LED (green/red/orange)	4 x LED (green/red/orange); Potential-free signal contact 13 / 14, max. 58 VDC / 40 A AC, 100 mA
Remote input	Reactivation of all tripped channels via pulse sequence, 15 ... 30 VDC for min. 500 ms Switching on/off any number of channels via pulse sequence.	Reactivation of all tripped channels via pulse sequence, 15 ... 30 VDC for min. 500 ms
LineMonitor, parameter setting		
Efficiency	99 % (typ.)	99 % (typ.)
Power loss P _v	0.84 W (stand-by) / 10 W (at 4 x 10 A)	0.84 W (stand-by) / 10 W (at 4 x 10 A)
Internal fuse	15 AT per channel	15 AT per channel
Ambient operating temperature	-25 ... +70 °C	-25 ... +70 °C
Storage temperature	-25 ... +85 °C	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)	5 % ... 96 % (no condensation permissible)
Derating	≥ +50 °C: see instruction manual	≥ +50 °C: see instruction manual
Degree of pollution	2 (acc. to EN 50178)	2 (acc. to EN 50178)
Connectors	Input (+): WAGO 831 Series Input (-), output, signaling: WAGO 721 Series	Input (+): WAGO 831 Series Input (-), output, signaling: WAGO 721 Series
Mechanical Data		
Dimensions (mm) W x H x L	45 x 90 x 115.5, Length from upper-edge of DIN-35 rail	45 x 90 x 115.5, Length from upper-edge of DIN-35 rail
Weight	170 g	170 g
General Specifications		
Standards/Approvals	UL 508, UL 2367, GL, EN 60950, EN 61000-6-2, EN 61000-6-3	UL 508 *, UL 2367 *, GL *, EN 60950, EN 61000-6-2, EN 61000-6-3 (* pending)

Electronic Circuit Breakers (ECB)

EPSITRON®

787 Series



Features:

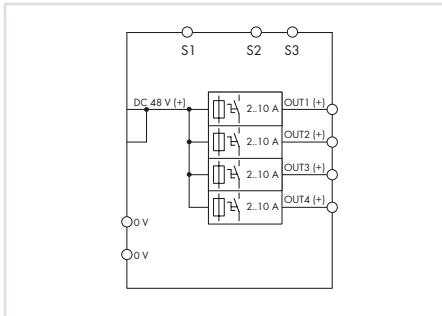
- Space-saving electronic circuit breaker with 4 channels
 - 2 ... 10 A nominal current, adjustable for each channel via sealable selector switch
 - Switch-on capacity > 23000 µF per channel
 - One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
 - Time-delayed switching of channels
 - Tripped message (group signal)
 - Status message for each channel via pulse sequence (only devices with communication capability)
 - Remote input resets all tripped channels
 - Remote input for switching on/off any number of channels via pulse sequence (only devices with communication capability)
- Note: The pulse sequence only supports devices which are designated as having "communication capability"

Technical Data

Input	
Nominal input voltage $U_{i, \text{nom}}$	48 VDC
Input voltage range	32 ... 58 VDC
Output	
Nominal output voltage $U_{o, \text{nom}}$	4 x 48 VDC
Nominal current	Max. 4 x 10 ADC, (2, 3, 4, 6, 8, 10 A adjustable for each channel via selector switch)
Voltage drop	175 mV at 10 A
Trip time	Load-dependent (16 ms ... 100 s)
Switch-on capacity	> 23,000 µF per channel at 48 VDC, 2.5 mm ² cable cross-section and 2.5 m cable length
Switch-on behavior	Time-delayed switching of channels (load-dependent min. 50 ms to 5 s)
Active current limitation	No
Operational indication	LED green (OK channel) LED red (tripped channel)
Signaling	4 x LED (green/red/orange)
Efficiency/Power Losses	
Efficiency	99 % (typ.)
Power loss P_v	0.84 W (stand-by) / 8 W (at 4 x 10 A)
Fuse Protection	
Internal fuse	15 AT per channel
General Specifications	
Standards/Approvals	UL 508 *, UL 2367 *, GL *, EN 60950, EN 61000-6-2, EN 61000-6-3 (* pending)
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Derating	≥ +50 °C: see instruction manual
Degree of pollution	2 (acc. to EN 50178)
Safety and Protection	
Test voltage	500 VDC (terminals to enclosure)
Protection class	III
Reverse voltage protection	No
Degree of protection	IP20 per EN 60529
Overvoltage protection	Via 68 V suppressor diode at input
Feedback voltage	Max. 58 VDC
Series connection of several devices	Not permitted
Parallel operation of single channels	Not permitted
Connection and Type of Mounting	
Connectors	Input (+): WAGO 831 Series Input (-), output, signaling: WAGO 721 Series
Conductor range	Input (+): 0.5 ... 10 mm ² / 20 ... 8 AWG Input (-), output, signaling: 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input (+): 13 ... 15 mm / 0.51 ... 0.59 inch Input (-), output, signaling: 8 ... 9 mm / 0.31 ... 0.35 inch
Type of mounting	DIN-rail mounting (EN 60715)
Dimensions and Weight	
Dimensions (mm) W x H x L	45 x 90 x 115.5, Length from upper-edge of DIN-35 rail
Weight	170 g



Similar to pictured device

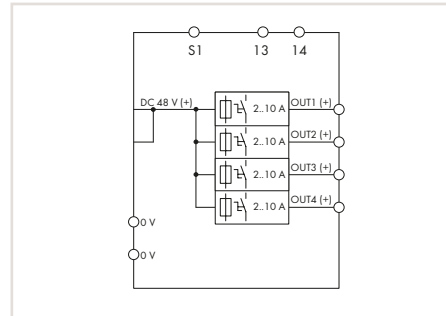


EPSITRON® Electronic Circuit Breaker, 4-channel, input voltage: 48 VDC, 2 ... 10 A adjustable, communication capability

Item No.	Pack. Unit
787-1664/000-200	1



Similar to pictured device



EPSITRON® Electronic Circuit Breaker, 4-channel, input voltage: 48 VDC, 2 ... 10 A adjustable, potential-free signal contact 13/14

Item No.	Pack. Unit
787-1664/000-250	1

Potential-free signal contact 13 / 14 reports "channel switched off" and "tripped channel"; does not support communication via pulse sequence

Electrical Data

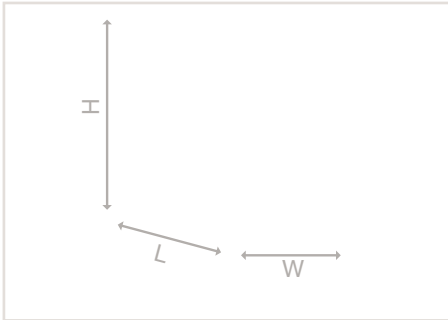
Remote input	Reactivation of all tripped channels via 15 ... 58 VDC pulse for min. 500 ms Switching on/off any number of channels via pulse sequence.
Signaling	

	Reactivation of all tripped channels via 15 ... 58 VDC pulse for min. 500 ms
	Potential-free signal contact 13 / 14, max. 58 VDC / 40 A AC, 100 mA

Electronic Circuit Breakers with Active Current Limitation

EPSITRON®

787 Series



Features:

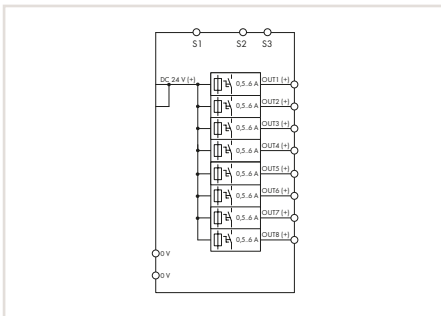
- Space-saving electronic circuit breaker with 8 channels
 - 0.5 ... 6 A nominal current, adjustable for each channel via sealable selector switch
 - Active current limitation
 - Switch-on capacity > 65000 µF per channel
 - One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
 - Time-delayed switching of channels
 - Tripped message (group signal)
 - Status message for each channel via pulse sequence (only devices with communication capability)
 - Remote input resets all tripped channels
 - Remote input for switching on/off any number of channels via pulse sequence (only devices having communication capability)
- Note: The pulse sequence only supports devices which are designated as having "communication capability"

Technical Data

Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC
Output	
Nominal output voltage $U_{o, \text{nom}}$	8 x 24 VDC
Nominal current	Max. 8 x 6 ADC, (0.5, 1, 2, 3, 4, 6 A adjustable for each channel via selector switch)
Voltage drop	155 mV at 6 A
Trip time	Load-dependent (16 ms ... 5 s)
Switch-on behavior	Time-delayed channel switching (load-dependent min. 50 ms to 5 s)
Active current limitation	Yes
Operational indication	LED green (OK channel) LED red (tripped channel)
Signaling	8 x LED (green/red/orange)
Efficiency/Power Losses	
Efficiency	99 % (typ.)
Fuse Protection	
Internal fuse	15 AT per channel
General Specifications	
Standards/Approvals	UL 508*, UL 2367*, GL, EN 60950, EN 61000-6-2, EN 61000-6-3 (*pending)
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Derating	No derating
Safety and Protection	
Test voltage	500 VDC (terminals to enclosure)
Protection class	III
Reverse voltage protection	No
Degree of protection	IP20 per EN 60529
Overvoltage protection	Via 33 V suppressor diode at input
Feedback voltage	Max. 35 VDC
Series connection of several devices	Not permitted
Parallel operation of single channels	Not permitted
Connection and Type of Mounting	
Connectors	Input (+): WAGO 831 Series Input (-), output, signaling: WAGO 721 Series
Conductor range	Input (+): 0.5 ... 10 mm ² / 20 ... 8 AWG Input (-), output, signaling: 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input (+): 13 ... 15 mm ² / 0.51 ... 0.59 inch Input (-), output, signaling: 8 ... 9 mm / 0.31 ... 0.35 inch
Type of mounting	DIN-rail mounting (EN 60715)
Dimensions and Weight	
Dimensions (mm) W x H x L	42 x 127 x 142.5, Length from upper-edge of DIN-35 rail
Weight	440 g



Similar to pictured device

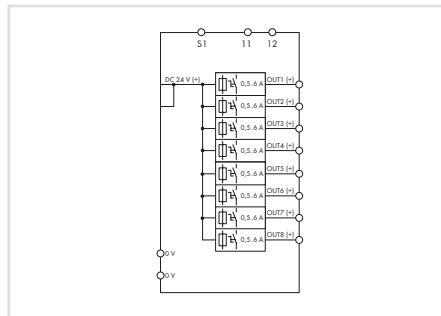


EPSITRON® Electronic Circuit Breaker, 8-channel, input voltage: 24 VDC, 0.5 ... 6 A adjustable, active current limitation, communication capability

Item No.	Pack. Unit
787-1668/006-1000	1



Similar to pictured device



EPSITRON® Electronic Circuit Breaker, 8-channel, input voltage: 24 VDC, 0.5 ... 6 A adjustable, active current limitation, potential-free signal contact 11/12, specialty configuration

Item No.	Pack. Unit
787-1668/006-1054	1

Potential-free signal contact 11 / 12 reports "channel switched off" and "tripped channel"; does not support communication via pulse sequence

Electrical Data

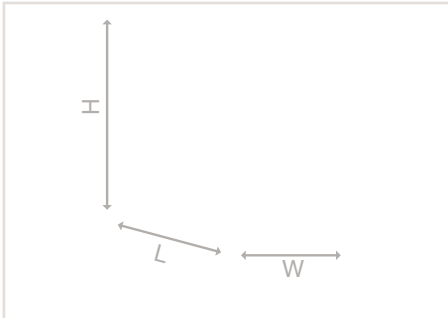
Factory preset	
Switch-on capacity	> 65,000 µF per channel
Remote input	Reactivation of all tripped channels via pulse sequence, 15 ... 30 VDC for min. 500 ms Switching on/off any number of channels via pulse sequence.
Power loss P _v	8.6 W (nominal load)
Degree of pollution	
Signaling	

0.5 ADC (when switched off)	
Switch-on capacity	> 58,000 µF per channel
Remote input	Reactivation of all tripped channels via pulse sequence, 15 ... 30 VDC for min. 500 ms
Power loss P _v	1.15 W (stand-by) / 8.6 W (at 8 x 6 A)
Degree of pollution	2 (acc. to EN 50178)
Signaling	Potential-free signal contact 11 / 12, max 58 VDC / 40 A AC, 100 mA

Electronic Circuit Breakers without Active Current Limitation

EPSITRON®

787 Series



Features:

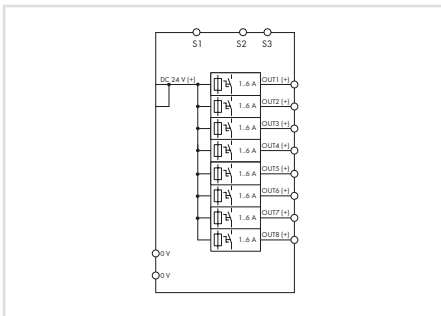
- Space-saving electronic circuit breaker with 8 channels
 - 1 ... 6 A nominal current, adjustable for each channel via sealable selector switch
 - Switch-on capacity > 50000 µF per channel
 - One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
 - Time-delayed switching of channels
 - Tripped message (group signal)
 - Status message for each channel via pulse sequence (only devices with communication capability)
 - Remote input resets all tripped channels
 - Remote input for switching on/off any number of channels via pulse sequence (only devices having communication capability)
- Note: The pulse sequence only supports devices which are designated as having "communication capability"

Technical Data

Input	
Nominal input voltage $U_{i, \text{nom}}$	24 VDC
Input voltage range	18 ... 30 VDC
Output	
Nominal output voltage $U_{o, \text{nom}}$	8 x 24 VDC
Switch-on capacity	> 50,000 µF per channel
Active current limitation	No
Operational indication	LED green (OK channel), LED red (tripped channel)
Signaling	8 x LED (green/red/orange)
Remote input	Reactivation of all tripped channels via pulse sequence, 15 ... 30 VDC for min. 500 ms Switching on/off any number of channels via pulse sequence
Efficiency/Power Losses	
Efficiency	99 % (typ.)
Fuse Protection	
Internal fuse	15 AT per channel
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Safety and Protection	
Test voltage	500 VDC (terminals to enclosure)
Protection class	III
Reverse voltage protection	No
Degree of protection	IP20 per EN 60529
Overvoltage protection	Via 33 V suppressor diode at input
Feedback voltage	Max. 35 VDC
Series connection of several devices	Not permitted
Parallel operation of single channels	Not permitted
Connection and Type of Mounting	
Connectors	Input (+): WAGO 831 Series Input (-), output, signaling: WAGO 721 Series
Conductor range	Input (+): 0.5 ... 10 mm ² / 20 ... 8 AWG Input (-), output, signaling: 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input (+): 13 ... 15 mm ² / 0.51 ... 0.59 inch Input (-), output, signaling: 8 ... 9 mm / 0.31 ... 0.35 inch
Type of mounting	DIN-rail mounting (EN 60715)
Dimensions and Weight	
Dimensions (mm) W x H x L	42 x 127 x 142.5, Length from upper-edge of DIN-35 rail



Similar to pictured device

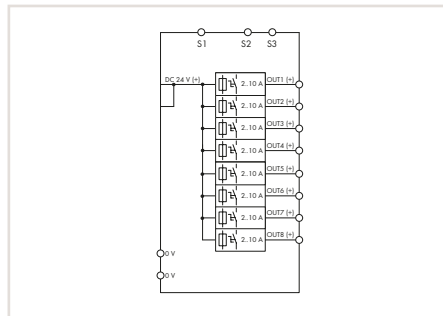


EPSITRON® Electronic Circuit Breaker,
8-channel, input voltage: 24 VDC,
1 ... 6 A adjustable, communication capability

Item No.	Pack. Unit
787-1668/106-000	1



Similar to pictured device



EPSITRON® Electronic Circuit Breaker,
8-channel, input voltage: 24 VDC,
2 ... 10 A adjustable, communication capability

Item No.	Pack. Unit
787-1668	1

5

Electrical Data

Nominal current	Max. 8 x 6 ADC, (1, 2, 3, 4, 5, 6 A adjustable for each channel via selector switch)
Factory preset	
Voltage drop	120 mV at 6 A
Trip time	Load-dependent (16 ms ... 100 s)
Switch-on behavior	Time-delayed channel switching (load-dependent min. 50 ms to 5 s)
Power loss P _v	8 W (nominal load)
Derating	No derating
Mechanical Data	
Weight	440 g
General Specifications	
Standards/Approvals	UL 508, UL 2367, GL, EN 60950, EN 61000-6-2, EN 61000-6-3

Max. 8 x 10 ADC, (2, 3, 4, 6, 8, 10 A adjustable for each channel via selector switch)
200 mV at 10 A
Load-dependent (16 ms ... 100 s)
Time-delayed channel switching (load-dependent min. 50 ms to 5 s)
1.3 W (stand-by) / 20 W (nominal load)
≥ +50 °C: see instruction manual
440 g
UL 508, UL 2367, GL, EN 60950, EN 61000-6-2, EN 61000-6-3

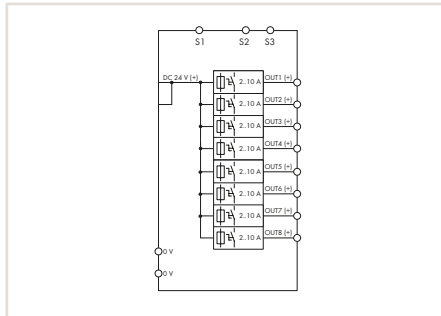
Electronic Circuit Breakers (ECB)

EPSITRON®

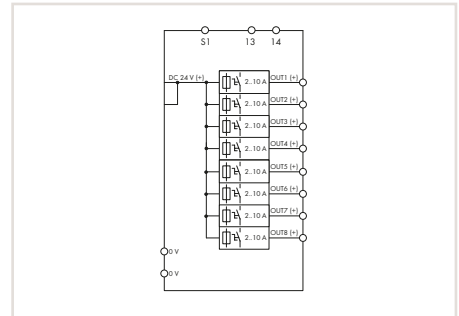
787 Series



Similar to pictured device



Similar to pictured device



EPSITRON® Electronic Circuit Breaker, 8-channel, input voltage: 24 VDC, 2 ... 10 A adjustable, communication capability, specialty configuration

Item No.	Pack. Unit
787-1668/000-004	1

Group signal S3 reports "channel switched off" and "tripped channel"

EPSITRON® Electronic Circuit Breaker, 8-channel, input voltage: 24 VDC, 2 ... 10 A adjustable, potential-free signal contact 13/14, specialty configuration

Item No.	Pack. Unit
787-1668/000-054	1

Potential-free signal contact 13 / 14 reports "channel switched off" and "tripped channel"; does not support communication via pulse sequence

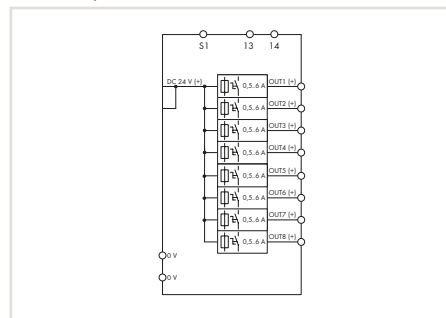
Electrical Data

Nominal current	Max. 8 x 10 ADC, (2, 3, 4, 6, 8, 10 A adjustable for each channel via selector switch)
Factory preset	2 ADC (when switched off)
Voltage drop	200 mV at 10 A
Trip time	Load-dependent (16 ms ... 100 s)
Switch-on behavior	Time-delayed switching of channels (load-dependent min. 50 ms to 5 s)
Power loss P _v	1.3 W (stand-by) / 20 W (nominal load)
Derating	≥ +50 °C: see instruction manual
Signaling	
Mechanical Data	
Weight	420 g
General Specifications	
Standards/Approvals	UL 508, UL 2367, GL, EN 60950, EN 61000-6-2, EN 61000-6-3

Max. 10 ADC per channel; max. 70 ADC in total (2, 3, 4, 6, 8, 10 A adjustable for each channel via selector switch)
2 ADC (when switched off)
200 mV at 10 A
Load-dependent (16 ms ... 100 s)
Time-delayed switching of channels (load-dependent min. 50 ms to 5 s)
1.32 W (stand-by) / 20 W (at 8 x 10 A)
≥ +50 °C: see instruction manual
Potential-free signal contact 13 / 14, max. 58 VDC / 40 A AC, 100 mA
440 g
UL 508 *, UL 2367 *, GL *, EN 60950, EN 61000-6-2, EN 61000-6-3 (* pending)



Similar to pictured device



EPSITRON® Electronic Circuit Breaker,
8-channel, input voltage: 24 VDC,
0.5 ... 6 A adjustable, potential-free signal contact
13/14

Item No.	Pack. Unit
787-1668/106-054	1

Potential-free signal contact 13 / 14 reports "channel switched off" and "tripped channel"; does not support communication via pulse sequence

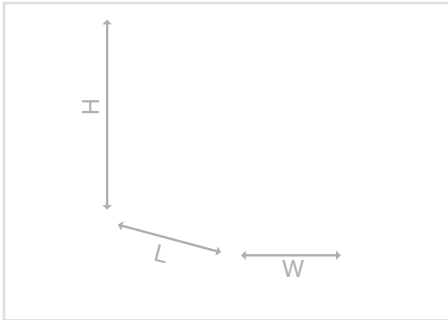
Electrical Data

Nominal current	Max. 8 x 6 ADC, (0.5, 1, 2, 3, 4, 6 A adjustable for each channel via selector switch)
Factory preset	0.5 ADC (when switched off)
Uoltage drop	120 mV at 6 A
Trip time	Load-dependent (16 ms ... 100 s)
Switch-on behavior	Time-delayed switching of channels (load-dependent min. 50 ms to 5 s)
Power loss P_v	0.84 W (stand-by) / 8 W (at 8 x 6 A)
Derating	No derating
Signaling	Potential-free signal contact 13 / 14, max. 58 VDC / 40 A AC, 100 mA
Mechanical Data	
Weight	440 g
General Specifications	
Standards/Approvals	UL 508 *, UL 2367 *, GL *, EN 60950, EN 61000-6-2, EN 61000-6-3 (* pending)

Electronic Circuit Breakers (ECB)

EPSITRON®

787 Series



Features:

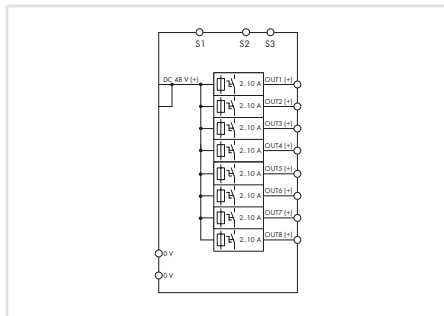
- Space-saving electronic circuit breaker with 8 channels
 - 2 ... 10 A nominal current, adjustable for each channel via sealable selector switch
 - Switch-on capacity > 23000 µF per channel
 - One illuminated, three-colored button per channel simplifies switching (on/off), resetting, and on-site diagnostics
 - Time-delayed switching of channels
 - Tripped message (group signal)
 - Status message for each channel via pulse sequence (only devices with communication capability)
 - Remote input for switching on/off any number of channels via pulse sequence (only devices having communication capability)
- Note: The pulse sequence only supports devices which are designated as having "communication capability"

Technical Data

Input	
Nominal input voltage $U_{i, \text{nom}}$	48 VDC
Input voltage range	32 ... 58 VDC
Output	
Nominal output voltage $U_{o, \text{nom}}$	8 x 48 VDC
Nominal current	Max. 10 ADC per channel; max. 70 ADC in total (2, 3, 4, 6, 8, 10 A adjustable for each channel via selector switch)
Voltage drop	200 mV at 10 A
Trip time	Load-dependent (16 ms ... 100 s)
Switch-on capacity	> 23,000 µF per channel at 48 VDC, 2.5 mm ² cable cross-section and 2.5 m cable length
Switch-on behavior	Time-delayed switching of channels (load-dependent min. 50 ms to 5 s)
Active current limitation	No
Operational indication	LED green (OK channel), LED red (tripped channel)
Signaling	8 x LED (green/red/orange)
Efficiency/Power Losses	
Efficiency	99 % (typ.)
Power loss P_v	1.3 W (stand-by) / 20 W (at 8 x 10 A)
Fuse Protection	
Internal fuse	15 AT per channel
General Specifications	
Standards/Approvals	UL 508*, UL 2367*, GL*, EN 60950, EN 61000-6-2, EN 61000-6-3 (*pending)
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-25 ... +85 °C
Relative humidity	5 % ... 96 % (no condensation permissible)
Derating	≥ +50 °C: see instruction manual
Degree of pollution	2 (acc. to EN 50178)
Safety and Protection	
Test voltage	500 VDC (terminals to enclosure)
Protection class	III
Reverse voltage protection	No
Degree of protection	IP20 per EN 60529
Overvoltage protection	Via 68 V suppressor diode at input
Feedback voltage	Max. 58 VDC
Series connection of several devices	Not permitted
Parallel operation of single channels	Not permitted
Connection and Type of Mounting	
Connectors	Input (+): WAGO 831 Series Input (-), output, signaling: WAGO 721 Series
Conductor range	Input (+): 0.5 ... 10 mm ² / 20 ... 8 AWG Input (-), output, signaling: 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input (+): 13 ... 15 mm / 0.51 ... 0.59 inch Input (-), output, signaling: 8 ... 9 mm / 0.31 ... 0.35 inch
Type of mounting	DIN-rail mounting (EN 60715)
Dimensions and Weight	
Dimensions (mm) W x H x L	42 x 127 x 142.5, Length from upper-edge of DIN-35 rail
Weight	440 g



Similar to pictured device

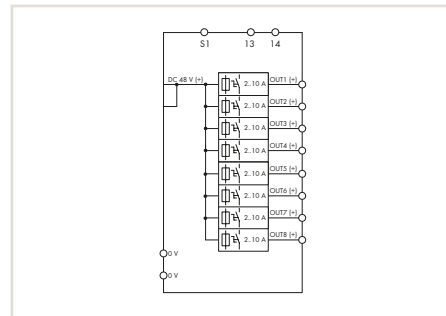


EPSITRON® Electronic Circuit Breaker, 8-channel, input voltage: 48 VDC, 2 ... 10 A adjustable, communication capability

Item No.	Pack. Unit
787-1668/000-200	1



Similar to pictured device



EPSITRON® Electronic Circuit Breaker, 8-channel, input voltage: 48 VDC, 2 ... 10 A adjustable, potential-free signal contact 13/14

Item No.	Pack. Unit
787-1668/000-250	1

Potential-free signal contact 13 / 14 reports "channel switched off" and "tripped channel"; does not support communication via pulse sequence

Electrical Data

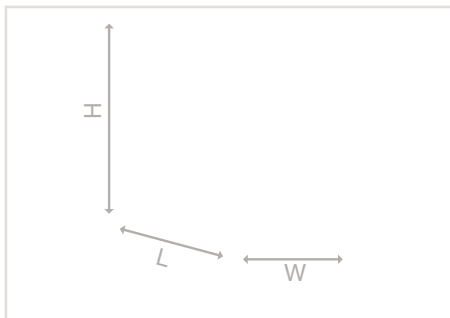
Remote input	Reactivation of all tripped channels via 15 ... 58 VDC pulse for min. 500 ms Switching on/off any number of channels via pulse sequence.
Signaling	

	Reactivation of all tripped channels via 15 ... 58 VDC pulse for min. 500 ms
	Potential-free signal contact 13 / 14, max. 58 VDC / 40 A AC, 100 mA

DC/DC Converters

EPSITRON® COMPACT Power

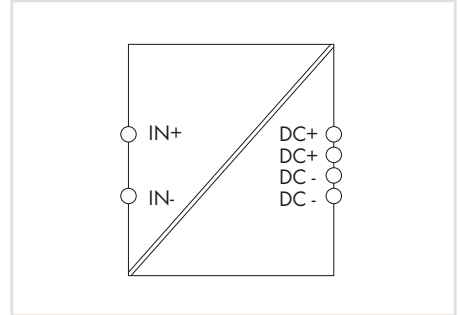
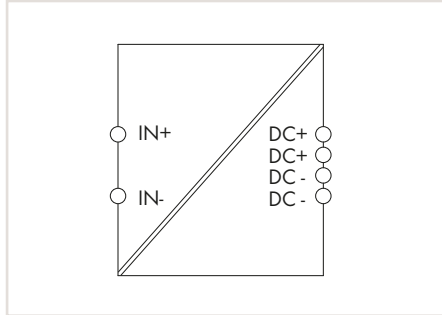
787 Series



Technical Data	
Input	
Frequency	0 Hz
Inrush current	< 30 A, NTC
Output	
Nominal output voltage $U_{o, nom}$	24 VDC (SELV)
Output current I_o	2.0 A at 24 VDC, max. 1.6 A in any mounting position
Factory preset	24 VDC
Residual ripple	< 100 mV (peak-to-peak) up to 20 MHz
Current limitation	1.1 x I_o , typ.
Overload behavior	Constant current
Operational indication	LED green (U_o)
Fuse Protection	
Internal fuse	T 4 A / 125 VDC
External fuse	Electronic circuit breaker 6 A, 10 A, B, C characteristic
General Specifications	
Standards/Approvals	EN 60950, EN 61204-3, EN 50121-3-2, EN 50125 *, UL 60950 *, UL 508 *, GL * * (pending)
Environmental Requirements	
Ambient operating temperature	-40 ... +70 °C
Storage temperature	-40 ... +85 °C
Relative humidity	5 ... 96 % (varnished PCB)
Derating	-1.5 % / K (> 55 °C)
Degree of pollution	2 (acc. to EN 50178)
Climatic category	3K3 (acc. to EN 60721)
Shock and vibration	Category 1, Class B (per EN 61373:2010)
Safety and Protection	
Enclosure	Plastic, light gray, Flammability class V0 acc. to UL94
Test voltage PRI-SEC	4.2 kV (DC)
Protection class	II
Degree of protection	IP20 per EN 60529
Overvoltage category	II
Overvoltage protection	Varistor (input side); internal protective circuit, < 40 VDC (output side in case of an error)
Short-circuit-protection	Yes
No-load proof	Yes
Feedback voltage	Max. 35 VDC
Parallel operation	Yes
Series connection	Yes
MTBF	> 500,000 h
Fire load	7 MJ
Connection and Type of Mounting	
Connectors	Input/Output: WAGO 740 Series
Conductor range	Input/Output: 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	Input/Output: 6 ... 7 mm / 0.24 ... 0.28 inch
Type of mounting	DIN-rail mounting (EN 60715)
Dimensions and Weight	
Dimensions (mm) W x H x L	72 x 89 x 59, Length: 55 mm from upper-edge of DIN-35 rail
Weight	240 g



Similar to pictured device



EPSITRON® DC-DC Converter, COMPACT Power,
input voltage: 110 VDC,
output: 24 VDC / 2 A

Item No.	Pack. Unit
787-1014	1

EPSITRON® DC-DC Converter, COMPACT Power,
input voltage: 72 VDC,
output: 24 VDC / 2 A

Item No.	Pack. Unit
787-1014/072-000	1

Electrical Data

Nominal input voltage $U_{I,nom}$	110 VDC
Input voltage range	77 ... 140 VDC
Input current I_i	0.77 A at 77 VDC; 0.42 A at 140 VDC
Mains failure hold-up time	> 8 ms at 77 VDC; > 25 ms at 140 VDC
Adjustment accuracy	10 %
Efficiency	85 % (typ.)
Power loss P_v	1.9 W (110 VDC/no load), 9.9 W (110 VDC/nominal load)
Power loss P_v (max.)	9.9 W typ. (77 VDC / 24 VDC, 2 A)

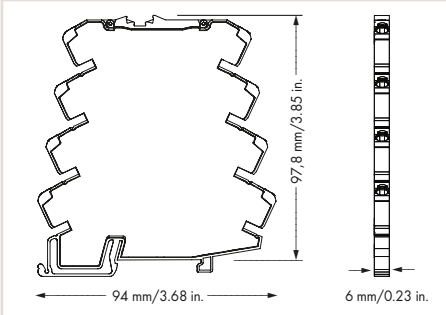
Nominal input voltage $U_{I,nom}$	72 VDC
Input voltage range	40 ... 90 VDC
Input current I_i	0.79 A at 72 VDC
Mains failure hold-up time	> 8 ms at 72 VDC
Adjustment accuracy	2 %
Efficiency	84 % (typ.)
Power loss P_v	2.0 W (72 VDC/no load), 9.0 W (72 VDC/nominal load)
Power loss P_v (max.)	10.5 W typ. (40 VDC / 24 VDC, 2 A)

Nominal input voltage $U_{I,nom}$	72 VDC
Input voltage range	40 ... 90 VDC
Input current I_i	0.79 A at 72 VDC
Mains failure hold-up time	> 8 ms at 72 VDC
Adjustment accuracy	2 %
Efficiency	84 % (typ.)
Power loss P_v	2.0 W (72 VDC/no load), 9.0 W (72 VDC/nominal load)
Power loss P_v (max.)	10.5 W typ. (40 VDC / 24 VDC, 2 A)

DC/DC Converters

EPSITRON®

787 Series



Features:

- DC/DC Converter in a compact 6 mm housing
- 787-28xx LC/DC Converters supply devices with 5, 10, 12 or 24 VDC from a power supply with 24 or 48 VDC, with an output power up to 12 W.
- Output voltage monitoring via DC OK contact
- Can be commoned with 857 and 2857 Series devices
- Comprehensive range of approvals for multiple applications

Technical Data

Input	
Inrush current	< 0.5 A (1 ms, at nominal input voltage)
Output	
Output current I_o	0.5 A
Mains/load regulation	< 1 %
Residual ripple	≤ 20 mV (peak-to-peak)
Operational indication	LED green (U _o), LED red (short circuit)
Signaling	DC OK contact (U _i , max. 15 mA)
Fuse Protection	
Internal fuse	None
Environmental Requirements	
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-40 ... +85 °C
Relative humidity	95 % (no condensation permissible)
Derating	No derating
Degree of pollution	2 (acc. to EN 50178)
Climatic category	3K3 (acc. to EN 60721, except for low air pressure)
Safety and Protection	
Protection class	III
Reverse voltage protection	Yes
Degree of protection	IP20 per EN 60529
Short-circuit-protection	Yes
No-load proof	Yes
Parallel operation	No
Series connection	No
MTBF	> 1,800,000 h
Connection and Type of Mounting	
Connection technology	Push-in CAGE CLAMP® (WAGO 857 Series)
Conductor range	solid: 0.08 ... 2.5 mm ² / 28 ... 14 AWG fine-stranded: 0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Type of mounting	DIN-rail mounting (EN 60715)
Dimensions and Weight	
Dimensions (mm) W x H x L	6 x 97.8 x 94, Height from upper-edge of DIN-35 rail
Weight	38 g



DC O.K.	1		5	n.c.
	DC O.K.			
GND	2		6	n.c.
Vout+	3		7	Vin+
		OUT	IN	
GND	4		8	GND

DC O.K.	1		5	n.c.
	DC O.K.			
GND	2		6	n.c.
Vout+	3		7	Vin+
		OUT	IN	
GND	4		8	GND

EPSITRON® DC-DC Converter,
input voltage: 24 VDC,
output: 5 VDC / 0.5 A

	Item No.	Pack. Unit
	787-2801	1

EPSITRON® DC-DC Converter,
input voltage: 24 VDC,
output: 10 VDC / 0.5 A

	Item No.	Pack. Unit
	787-2802	1

Electrical Data

Nominal input voltage $U_{I,nom}$	24 VDC
Input voltage range	10 ... 30 VDC
Input current I_i	< 0.34 A
Nominal output voltage $U_{O,nom}$	5 VDC ($\pm 3\%$)
Adjustment accuracy	< 3 %
Efficiency	> 82.5 % (at nominal input voltage and nominal output)
Power loss P_v	< 0.13 W (no load); < 0.6 W (nominal load)
Feedback voltage	16 V

General Specifications

Standards/Approvals	CE; EN 61000-6-2, EN 61000-6-3, EN 60950-1, UL 60950*, UL 508*, ANSI/ISA 12.12.01*, ATEX*, IEC Ex*, GL* (*pending)
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Nominal input voltage $U_{I,nom}$	24 VDC
Input voltage range	15 ... 30 VDC
Input current I_i	< 0.42 A
Nominal output voltage $U_{O,nom}$	10 VDC ($\pm 2\%$)
Adjustment accuracy	< 2 %
Efficiency	> 89 % (at nominal input voltage and nominal output)
Power loss P_v	< 0.19 W (no load); < 0.7 W (nominal load)
Feedback voltage	16 V

Standards/Approvals	CE; EN 61000-6-2, EN 61000-6-3, EN 60950-1, UL 60950*, UL 508*, ANSI/ISA 12.12.01*, ATEX*, IEC Ex*, GL* (*pending)
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DC/DC Converters

EPSITRON®

787 Series



DC O.K.	1		5	n.c.
GND	2		6	n.c.
Vout+	3		7	Vin+
GND	4	OUT	8	GND
		IN		

DC O.K.	1		5	n.c.
GND	2		6	n.c.
Vin+	3		7	Vout+
GND	4	IN	8	GND
		OUT		

EPSITRON® DC-DC Converter,
input voltage: 24 VDC,
output: 12 VDC / 0.5 A

	Item No.	Pack. Unit
	787-2805	1

EPSITRON® DC-DC Converter,
input voltage: 48 VDC,
output: 24 VDC / 0.5 A

	Item No.	Pack. Unit
	787-2803	1

Electrical Data

Nominal input voltage $U_{I,nom}$	24 VDC	48 VDC
Input voltage range	15 ... 30 VDC	40 ... 55 VDC
Input current I_i	< 0.5 A	< 0.34 A
Nominal output voltage $U_{O,nom}$	12 VDC ($\pm 2\%$)	24 VDC ($\pm 2\%$)
Adjustment accuracy	< 2 %	< 3 %
Efficiency	> 90 % (at nominal input voltage and nominal output)	> 91 % (at nominal input voltage and nominal output)
Power loss P_v	< 0.21 W (no load); < 0.7 W (nominal load)	< 0.29 W (no load); < 1.2 W (nominal load)
Feedback voltage	16 V	27 V
General Specifications		
Standards/Approvals	CE; EN 61000-6-2, EN 61000-6-3, EN 60950-1, UL 60950*, UL 508*, ANSI/ISA 12.12.01*, ATEX*, IEC Ex*, GL* (*pending)	CE; EN 61000-6-2, EN 61000-6-3, EN 60950-1, UL 60950*, UL 508*, ANSI/ISA 12.12.01*, ATEX; IEC Ex*, GL* (*pending)



DC O.K.	1		5	n.c.
	DC O.K.			
GND	2		6	n.c.
Vout+	3		7	Vin+
		OUT	IN	
GND	4		8	GND

EPSITRON® DC-DC converter,
input voltage: 24 VDC,
adjustable output voltage: 5/10/12 VDC,
output current: 0.5 A

Item No.	Pack. Unit
787-2810	1

Electrical Data

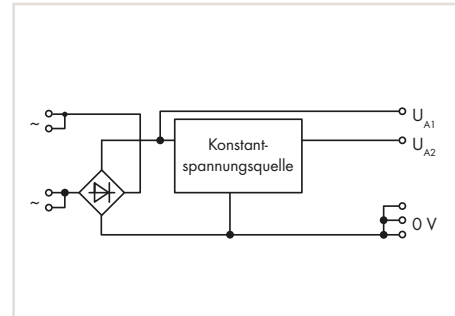
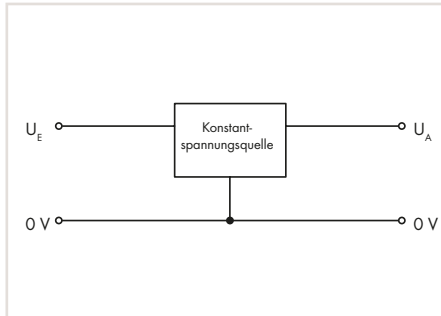
Nominal input voltage $U_{i, nom}$	24 VDC
Input voltage range	15 ... 30 VDC
Input current I_i	< 0.5 A
Nominal output voltage $U_{o, nom}$	5/10/12 VDC ($\pm 3\%$) set via DIP switches
Adjustment accuracy	< 3 %
Efficiency	> 82.5 % (at nominal input voltage and nominal output)
Power loss P_v	< 0.21 W (no load); < 0.7 W (nominal load)
Feedback voltage	16 V

General Specifications

Standards/Approvals	CE; EN 61000-6-2, EN 61000-6-3, EN 60950-1, UL 60950*, UL 508*, ANSI/ISA 12.12.01*, ATEX*, IEC Ex*, GL* (*pending)
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Rail-Mount Modules – Constant Voltage Sources

289/288 Series



Constant voltage source,
input voltage: 27 ... 35 VDC,
output voltage: 24 VDC,
output current: 3 A,
with mounting feet

	Item No.	Pack. Unit
	289-907	1

Constant voltage source,
input voltage: 24 VDC,
output voltage: 24 VDC,
output current: 3 A,
with mounting carrier

	Item No.	Pack. Unit
	288-800	1

Technical Data

Input voltage	27 ... 35 VDC
Output voltage	24 VDC (± 10 %)
Nominal output current	3 A
Permissible ambient operating temperature	-25 ... +40 °C
Weight	88 g
Dimensions (mm) W x H x L	78.5 x 39 x 66, Height from upper-edge of DIN-35 rail
Connection technology	CAGE CLAMP® (236 Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG (12 AWG: THHN, THWN)
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch

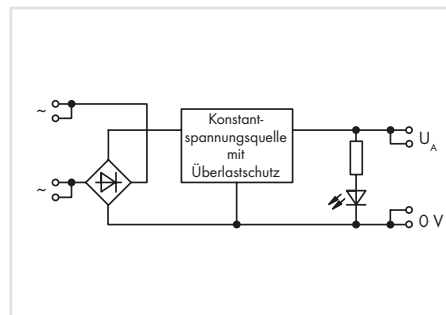
Output voltage	24 VDC +10%
Output voltage	24 VDC (± 10 %)
Nominal output current	3 A
Permissible ambient operating temperature	-25 ... +40 °C
Weight	209 g
Dimensions (mm) W x H x L	140 x 44 x 85, Height from upper-edge of DIN-35 rail
Connection technology	CAGE CLAMP® (236 Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG (12 AWG: THHN, THWN)
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch

Accessories (Selection)

	Item No.	Pack. Unit
Marking strips for mounting carrier	white	709-198
	translucent	709-196

	Item No.	Pack. Unit
Marking strips for mounting carrier	white	709-198
	translucent	709-196

 WMB Multi marking system,
see page 608



Constant voltage source,
input voltage: 24 VDC,
output voltage: 24 VDC,
output current: 5 A,
with mounting carrier

Item No.	Pack. Unit
288-801	1

Technical Data

Input voltage	24 VDC +10%
Output voltage	24 VDC (± 10 %)
Nominal output current	5 A
Overvoltage protection	electronic
Uoltage recovery after clearing the overload	after 4 s
Permissible ambient operating temperature	0 ... +30 °C
Weight	600.5 g
Dimensions (mm) W x H x L	170 x 85 x 108, Height from upper-edge of DIN-35 rail
Connection technology	CAGE CLAMP® (236 Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG (12 AWG: THHN, THWN)
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch

Accessories (Selection)

Marking strips for mounting carrier

	Item No.	Pack. Unit
white	709-198	1
translucent	709-196	1

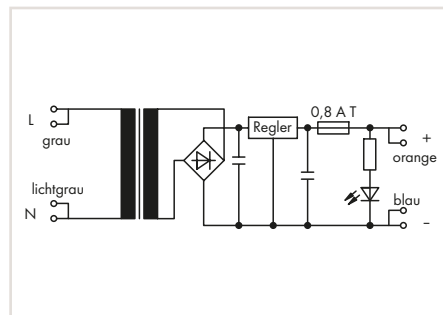
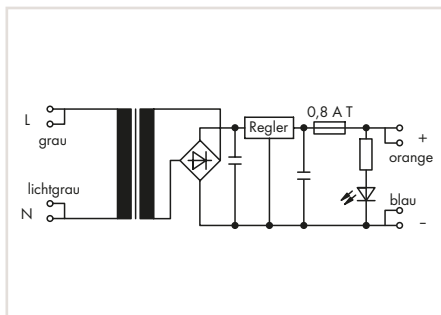
	Item No.	Pack. Unit
white	709-198	1
translucent	709-196	1



WMB Multi marking system,
see page 608

Rail-Mount Modules – Power Supplies

288 Series



Stabilized power supply,
input voltage: 115 VAC,
output voltage: 24 VDC,
output current: 0.5 A,
with mounting carrier

	Item No.	Pack. Unit
	288-809	1

Stabilized power supply,
input voltage: 230 VAC,
output voltage: 24 VDC,
output current: 0.5 A,
with mounting carrier

	Item No.	Pack. Unit
	288-810	1

Technical Data

Nominal input voltage $U_{I,nom}$	115 VAC
Input voltage range	$\pm 10\%$
Frequency	50 ... 60 Hz
Power consumption at nominal load	30 VA
Nominal output voltage $U_{O,nom}$	24 VDC
Output voltage range	$\pm 4\%$
Output current I_o	0.5 A
Residual ripple	≤ 10 mVss
Input fuse	
Output fuse	0.8 A, slow
Short circuit current	
Permissible ambient operating temperature	0 ... +50 °C
Weight	579 g
Dimensions (mm) W x H x L	77 x 52 x 106, Height from upper-edge of DIN-35 rail
Connection technology	CAGE CLAMP® (236 Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG (12 AWG: THHN, THWN)
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Standards/Approvals	Transformer acc. to VDE 0551

Nominal input voltage $U_{I,nom}$	230 VAC
Input voltage range	$\pm 10\%$
Frequency	50 ... 60 Hz
Power consumption at nominal load	30 VA
Nominal output voltage $U_{O,nom}$	24 VDC
Output voltage range	$\pm 4\%$
Output current I_o	0.5 A
Residual ripple	≤ 10 mVss
Input fuse	
Output fuse	0.8 A, slow
Short circuit current	
Permissible ambient operating temperature	0 ... +50 °C
Weight	552 g
Dimensions (mm) W x H x L	77 x 52 x 106, Height from upper-edge of DIN-35 rail
Connection technology	CAGE CLAMP® (236 Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG (12 AWG: THHN, THWN)
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Standards/Approvals	Transformer acc. to VDE 0551

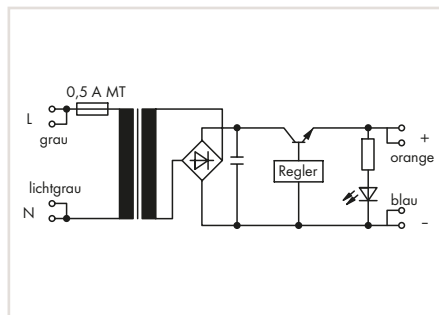
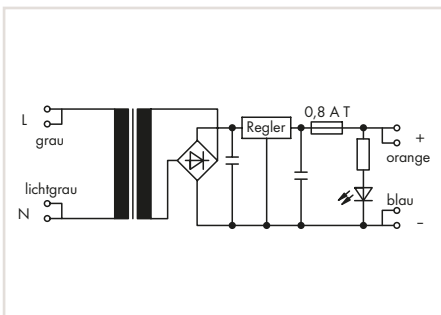
Accessories (Selection)

Marking strips for mounting carrier			
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	Item No.	Pack. Unit
white	709-198	1
translucent	709-196	1

	Item No.	Pack. Unit
white	709-198	1
translucent	709-196	1

WMB Multi marking system,
see page 608



Stabilized power supply,
input voltage: 230 VAC,
output voltage: 12 VDC,
output current: 0.5 A,
with mounting carrier

	Item No.	Pack. Unit
	288-808	1

Stabilized power supply,
input voltage: 115 VAC,
output voltage: 24 VDC,
output current: 2 A,
with mounting carrier

	Item No.	Pack. Unit
	288-813	1

Technical Data

Nominal input voltage $U_{I,nom}$	230 VAC
Input voltage range	± 10 %
Frequency	50 ... 60 Hz
Power consumption at nominal load	23 VA
Nominal output voltage $U_{O,nom}$	12 VDC
Output voltage range	± 4 %
Output current I_o	0.5 A
Residual ripple	≤ 10 mVss
Input fuse	
Output fuse	0.8 A, slow
Short circuit current	
Permissible ambient operating temperature	0 ... +50 °C
Weight	574 g
Dimensions (mm) W x H x L	77 x 52 x 106, Height from upper-edge of DIN-35 rail
Connection technology	CAGE CLAMP® (236 Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG (12 AWG: THHN, THWN)
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Standards/Approvals	Transformer acc. to VDE 0551

Nominal input voltage $U_{I,nom}$	115 VAC
Input voltage range	± 10 %
Frequency	50 ... 60 Hz
Power consumption at nominal load	80 VA
Nominal output voltage $U_{O,nom}$	24 VDC
Output voltage range	± 10 %
Output current I_o	2 A
Residual ripple	≤ 80 mVss
Input fuse	0.5 A MT
Output fuse	0.8 A, medium-slow
Short circuit current	electronic, short-circuit protected
Permissible ambient operating temperature	0 ... +40 °C
Weight	1969 g
Dimensions (mm) W x H x L	182 x 98 x 106, Height from upper-edge of DIN-35 rail
Connection technology	CAGE CLAMP® (256 Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG (12 AWG: THHN, THWN)
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Standards/Approvals	Transformer acc. to VDE 0551

Accessories (Selection)

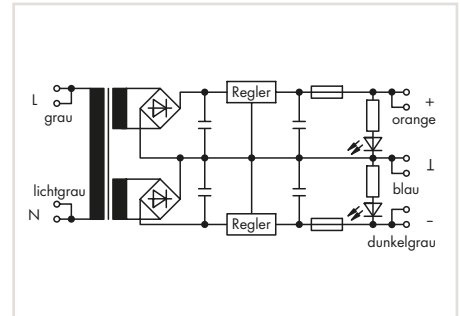
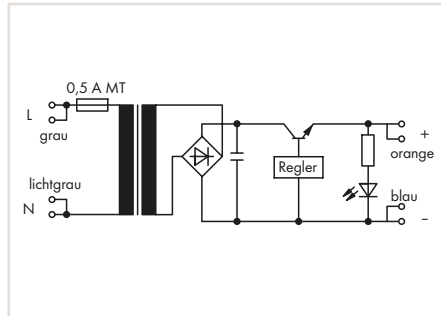
Marking strips for mounting carrier	white	709-198	1
	translucent	709-196	1

Marking strips for mounting carrier	white	709-198	1
	translucent	709-196	1

WMB Multi marking system, see page 608

Rail-Mount Modules – Power Supplies

288 Series



Stabilized power supply,
input voltage: 230 VAC,
output voltage: 24 VDC,
output current: 2 A,
with mounting carrier

	Item No.	Pack. Unit
	288-812	1

Stabilized power supply,
input voltage: 230 VAC,
output voltage: ± 12 VDC,
output current: 2 x 0.5 A,
with mounting carrier

$U_{o,nom}$	Item No.	Pack. Unit
± 12 VDC	288-814	1

Technical Data

Nominal input voltage $U_{I,nom}$	230 VAC
Input voltage range	± 10 %
Frequency	50 ... 60 Hz
Power consumption at nominal load	80 VA
Nominal output voltage $U_{o,nom}$	24 VDC
Output voltage range	± 10 %
Output current I_o	2 A
Residual ripple	≤ 80 mVss
Input fuse	0.5 A, medium-slow
Output fuse	electronic, short-circuit protected
Short circuit current	2.5 A
Permissible ambient operating temperature	0 ... +40 °C
Weight	1900 g
Dimensions (mm) W x H x L	182 x 98 x 106, Height from upper-edge of DIN-35 rail
Connection technology	CAGE CLAMP® (256 Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG (12 AWG: THHN, THWN)
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Standards/Approvals	Transformer acc. to VDE 0551

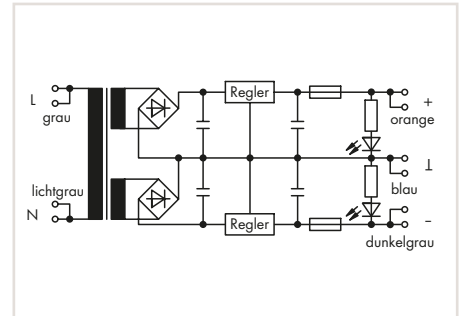
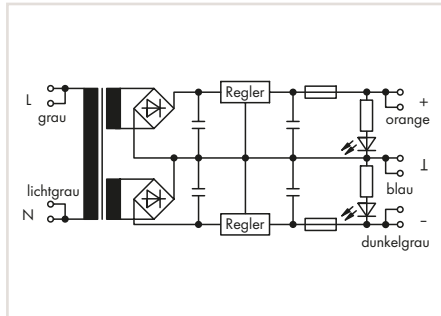
Nominal input voltage $U_{I,nom}$	230 VAC
Input voltage range	± 10 %
Frequency	50 ... 60 Hz
Power consumption at nominal load	27 VA
Nominal output voltage $U_{o,nom}$	± 12 VDC
Output voltage range	± 4 %
Output current I_o	2 x 0.5 A
Residual ripple	≤ 10 mVss
Input fuse	0.5 A, medium-slow
Output fuse	2 x 0.8 A, slow
Short circuit current	2.5 A
Permissible ambient operating temperature	0 ... +40 °C
Weight	675 g
Dimensions (mm) W x H x L	94 x 57 x 106, Height from upper-edge of DIN-35 rail
Connection technology	CAGE CLAMP® (256 Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG (12 AWG: THHN, THWN)
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Standards/Approvals	Transformer acc. to VDE 0551

Accessories (Selection)

	Item No.	Pack. Unit
Marking strips for mounting carrier	white	709-198
	translucent	709-196

	Item No.	Pack. Unit
Marking strips for mounting carrier	white	709-198
	translucent	709-196

WMB Multi marking system,
see page 608



Stabilized power supply,
input voltage: 230 VAC,
output voltage: ± 15 VDC,
output current: 2 x 0.5 A,
with mounting carrier

$U_{o,nom}$	Item No.	Pack. Unit
± 15 VDC	288-815	1

Stabilized power supply,
input voltage: 230 VAC,
output voltage: ± 15 VDC,
output current: 2 x 1 A,
with mounting carrier

$U_{o,nom}$	Item No.	Pack. Unit
± 15 VDC	288-816	1

Technical Data

Nominal input voltage $U_{i,nom}$	230 VAC
Input voltage range	± 10 %
Frequency	50 ... 60 Hz
Power consumption at nominal load	27 VA
Nominal output voltage $U_{o,nom}$	± 15 VDC
Output voltage range	± 4 %
Output current I_o	2 x 0.5 A
Residual ripple	≤ 10 mVss
Input fuse	
Output fuse	2 x 0.8 A, slow
Short circuit current	
Permissible ambient operating temperature	0 ... +40 °C
Weight	665 g
Dimensions (mm) W x H x L	94 x 57 x 106, Height from upper-edge of DIN-35 rail
Connection technology	CAGE CLAMP® (256 Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG (12 AWG: THHN, THWN)
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Standards/Approvals	Transformer acc. to VDE 0551

Nominal input voltage $U_{i,nom}$	230 VAC
Input voltage range	± 10 %
Frequency	50 ... 60 Hz
Power consumption at nominal load	53 VA
Nominal output voltage $U_{o,nom}$	± 15 VDC
Output voltage range	± 4 %
Output current I_o	2 x 1 A
Residual ripple	≤ 10 mVss
Input fuse	
Output fuse	
Short circuit current	approx. 1.5 A
Permissible ambient operating temperature	0 ... +40 °C
Weight	1011 g
Dimensions (mm) W x H x L	138 x 87 x 106, Height from upper-edge of DIN-35 rail
Connection technology	CAGE CLAMP® (256 Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG (12 AWG: THHN, THWN)
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Standards/Approvals	Transformer acc. to VDE 0551

Accessories (Selection)

Marking strips for mounting carrier	
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	Item No.	Pack. Unit
white	709-198	1
translucent	709-196	1

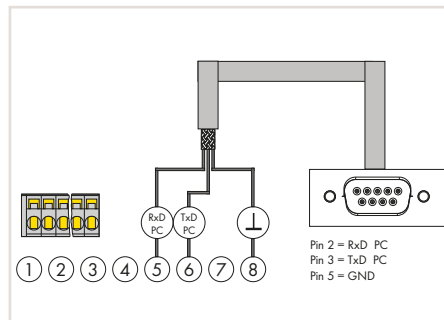
	Item No.	Pack. Unit
white	709-198	1
translucent	709-196	1

WMB Multi marking system, see page 608

Accessories

EPSITRON® Communication Cable with an RS-232 Interface

787 Series



Similar to pictured device

The communication cables are used for configuration and visualization via PC or controller. The communication cables are suitable for 787-1675 or all 787-8xx Series devices equipped with an RS-232 serial interface. Download the corresponding PC software for all 787 Series devices at www.wago.com/epsitron.

Function blocks for communication with the WAGO-I/O-SYSTEM 750 and other control systems are also available.

Note:
The 787-890 or 787-892 Communication Cables are not electrically isolated.

Wiring diagram shows 787-890

Technical Data

Type of signal

Connectors

Isolation

Conductor range

Ambient operating temperature

Degree of protection

Length

Serial Signal (RS-232)

1 x 8-pole 733-108 Female Connector with strain relief (module side, 787-890, 787-8xx), or 1 x 4-pole 734-104 Female Connector with strain relief (787-892 module side, 787-1675), 1 x 9-pole D-sub female connector (PC/controller side)

No

3 x 0.34 mm² (AWG 22), shielded

-10 ... +70 °C

IP20

1.8 m

Communication cable with an RS-232 interface

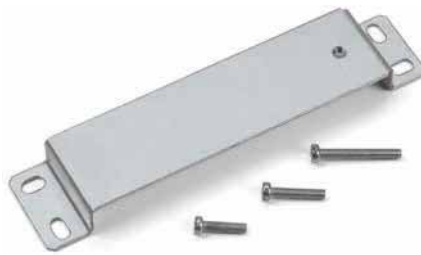
for	Item No.	Pack. Unit
787-8xx	787-890	1
787-1675	787-892	1

Accessories

EPSITRON® Wall-Mount Adapter/Carrier Rail Adapters

787 Series

EPSITRON® Wall-Mount Adapter



The 787-895 Wall-Mount Adapter secures 787-8xx devices on mounting plate or wall without DIN-35 rail. This adapter replaces the rail support of the 787-8xx device. The adapter is secured to the 787-8xx device via provided screws.

Technical Data

Material	Galvanized sheet steel
Dimensions (mm) W x H x L	35 x 15 x 158.5
Fixing	Mounting holes: 4 slots, 5.3 mm x 9 mm Mounting hole spacing: 143 mm x 19.5 mm
Included	Wall-mount adapter 1x screw M4 x 16 1x screw M4 x 20 1x screw M4 x 30

Wall-mount adapter, secures 787-8xx devices on a mounting plate or wall, without DIN-35 rail

Item No.	Pack. Unit
787-895	5

5

EPSITRON® Carrier Rail Adapters



Carrier rail adapter for mounting 787-8xx devices to a DIN-35 rail. The 787-896 Carrier Rail Adapter allows both the vertical and horizontal mounting of 787-8xx devices. Mounting the adapter to the device is performed by sliding both single parts into the guide slots of the cooling element and then screwing; this allows the position to be easily changed.

Carrier rail adapter made of zinc die-cast for mounting 787-8xx devices to a DIN-35 rail. The 787-897 Carrier Rail Adapter allows horizontal mounting of 787-8xx devices. Mounting the adapter to the device is performed by sliding both single parts into the guide slots of the cooling element and then screwing; this allows the position to be easily changed. this allows the position to be easily changed.

Carrier rail adapter, for mounting 787-8xx devices to a DIN-35 rail

Item No.	Pack. Unit
787-896	1

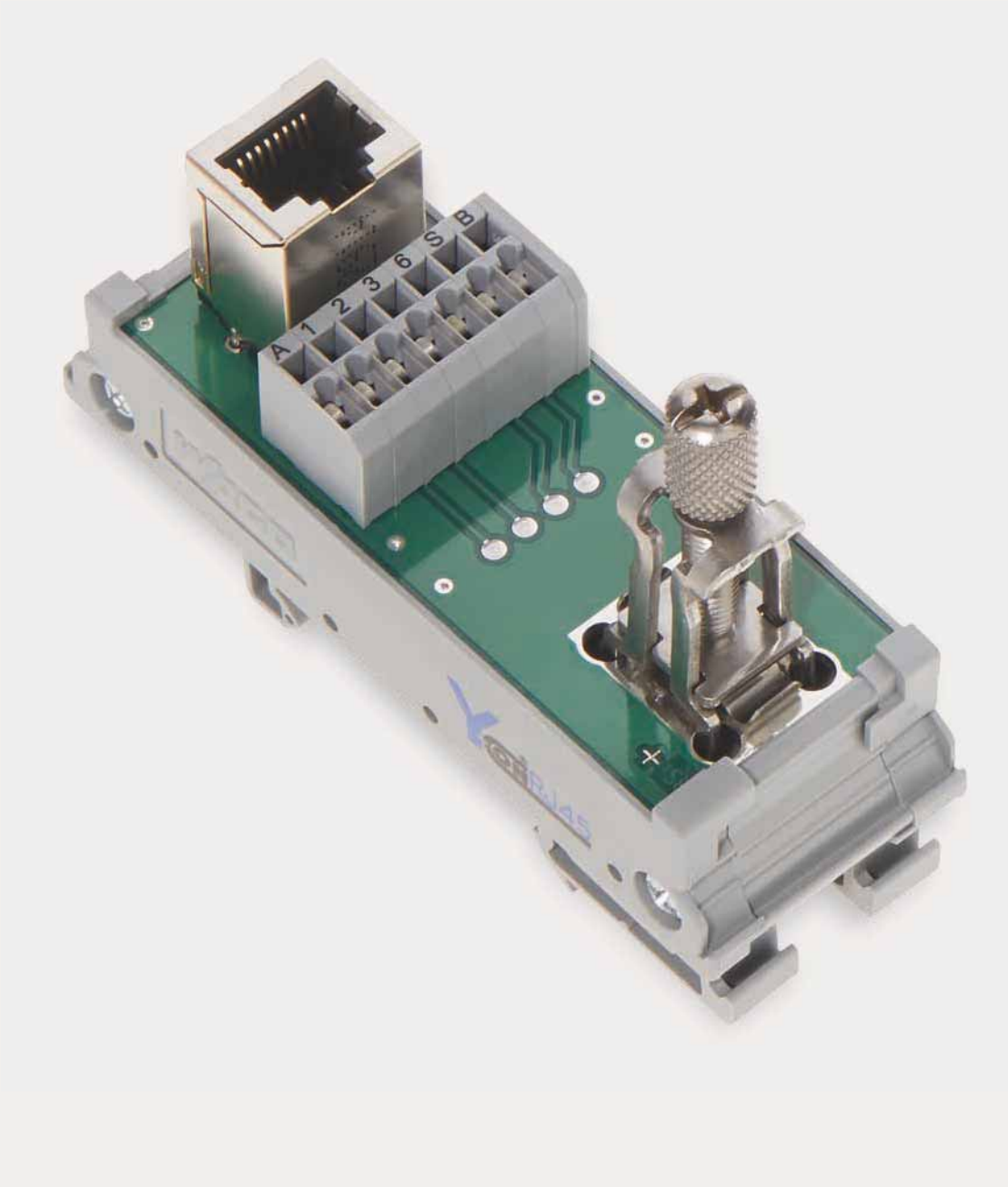
Carrier rail adapter, Zinc die-cast, for mounting 787-8xx devices to a DIN-35 rail

Item No.	Pack. Unit
787-897	1

Technical Data


Material	Galvanized sheet steel
Dimensions (mm) W x H x L	35 x 136.5 x 15.5
Mounting	By sliding both single parts into the guide slot and then screwing
Included	Carrier rail adapter Assembly instructions

Material	Zinc die-cast
Dimensions (mm) W x H x L	37 x 102.5 x 10.5
Mounting	By pressing the adapter into the guide slot
Included	Carrier rail adapter Assembly instructions

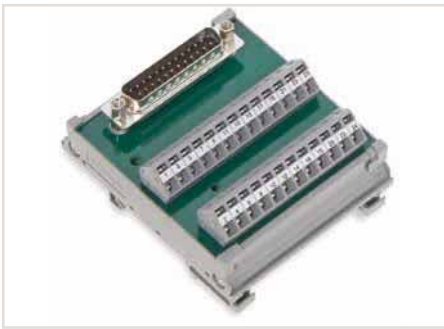


Interface Modules

Interface Modules

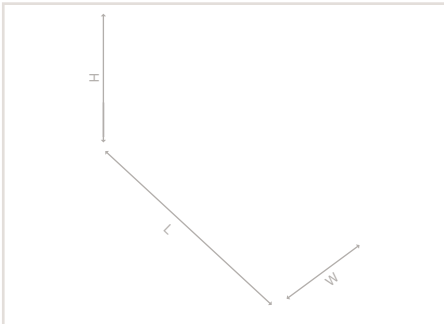
	Page
	Interface Modules, for D-Sub/HD D-Sub Connectors Male Connectors, for Mating Connectors with Solder Connection, 289 Series 435 Male Connectors, for Mating Connectors with IDC, 289 Series 438 Female Connectors, for Mating Connectors with Solder Connection, 289 Series 441 Female Connectors, for Mating Connectors with IDC, 289 Series 445
	Interface Modules, for Connectors acc. to DIN 41651 289 Series 446
	Interface Modules, for Connectors acc. to DIN 41612 289 Series 450
	Interface Modules, for RJ-45 Connectors RJ-45, 289 Series 454 RJ-45, with Power Contacts, 289 Series 457
	Connection Modules, for Sensors and Actuators 289 Series 460

Interface Modules for Sub-D-/HD-Sub-D Connectors Male Connectors, 289 Series

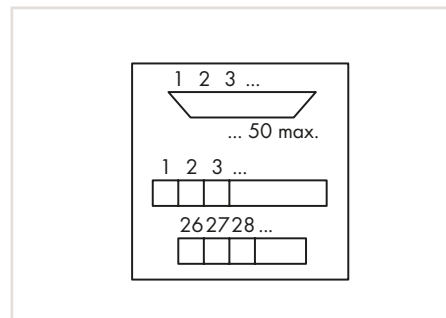
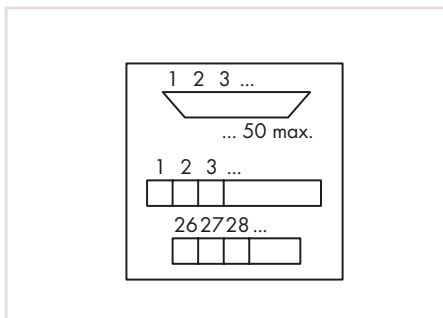
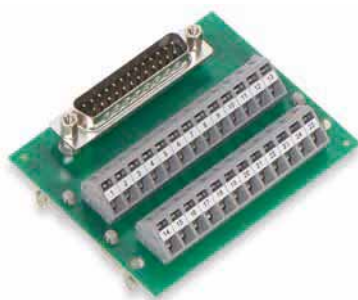


Technical Data

Connector contact	Au over Ni
Pull relief stud bolt	UNC 4-40
Ambient operating temperature	-20 ... +50 °C
Storage temperature	-40 ... +70 °C
Relative humidity	max. 85 % (no condensation)
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Conductor range	0.08 mm ² ... 2.5 mm ² / 28 ... 12 AWG



Interface Modules for Sub-D-/HD-Sub-D Connectors Male Connectors, for Mating Connectors with Solder Connection, 289 Series



*** Notice:**
Live parts are likely to be touched!! Protection against direct contact must be provided by the equipment builder, e.g., using a 709 Series WAGO Cover (see Accessories) or a similar cover. The installation requirements for the particular application must be observed.

Interface module, with D-subminiature male connector, for mating connectors with solder connection, mating direction vertical PCB terminal blocks, double-deck, with mounting feet

Pole No.	Width	Item No.	Pack. Unit
9	38,0	289-445	1
15	53,5	289-446	1
25	79,0	289-447	1
37	120,0	289-448	1
50	157,0	289-449	1

Interface module, with D-subminiature male connector, for mating connectors with solder connection, mating direction vertical PCB terminal blocks, double-deck, with mounting carrier

Pole No.	Width	Item No.	Pack. Unit
9	38,0	289-545	1
15	46,0	289-546	1
25	72,0	289-547	1
37	102,0	289-548	1
50	94,0	289-549	1

6

Technical Data	
Operating voltage	30 VAC/50 VDC
Nominal current	1 A
Contact resistance	≤ 30 mΩ
Performance level	2 / 200 mating cycles
Nominal voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP00*
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 19 x 63.5, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 236 Series)

Operating voltage	100 VAC/125 VDC
Nominal current	2 A
Contact resistance	≤ 30 mΩ
Performance level	2 / 200 mating cycles
Nominal voltage	100 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP20
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 34 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 236 Series)

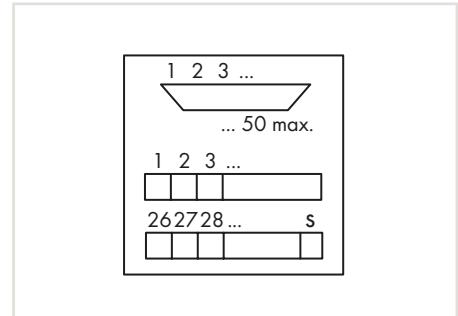
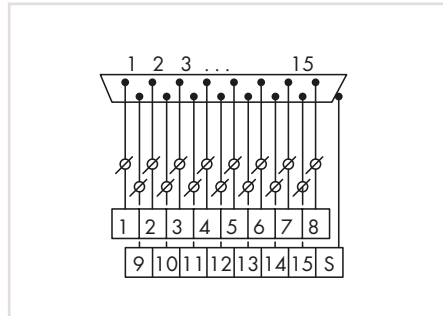
Operating voltage	100 VAC/125 VDC
Nominal current	2 A
Contact resistance	≤ 30 mΩ
Performance level	2 / 200 mating cycles
Nominal voltage	100 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP20
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 34 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 236 Series)

Accessories	
Marker strips for mounting carrier	
Cover carrier, type 1 (57.5 x 128 mm)	
Cover, transparent, type 1, 1 m long	

Color	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1
	709-167	10
	709-153	10

Color	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1

Interface Modules for Sub-D-/HD-Sub-D Connectors Male Connectors, for Mating Connectors with Solder Connection, 289 Series



*** Notice:**
Live parts are likely to be touched!! Protection against direct contact must be provided by the equipment builder, e.g., using a 709 Series WAGO Cover (see Accessories) or a similar cover. The installation requirements for the particular application must be observed.

Interface module, with D-subminiature male connector PCB terminal blocks, double-deck, with mounting carrier, with solder pin

Interface module, with D-subminiature male connector, for mating connectors with solder connection, mating direction vertical PCB terminal blocks, double-deck, with mounting carrier, with shield connection

Pole No.	Width	Item No.	Pack. Unit
9	33,5	289-720	1
15	43,5	289-721	1

Pole No.	Width	Item No.	Pack. Unit
9	38,5	289-585	1
15	46	289-586	1
25	71,5	289-587	1
37	102	289-588	1

1 solder pin per pole is available for testing and patching (except for shield (screen) contact)

Technical Data

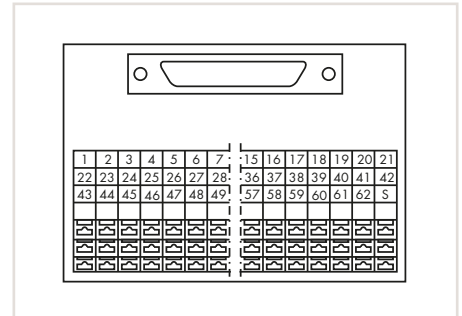
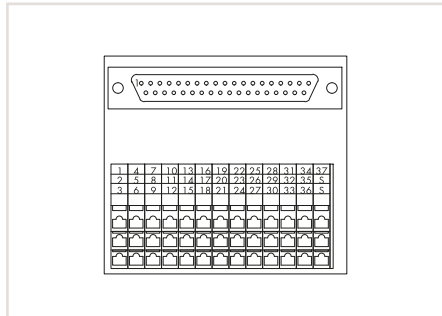
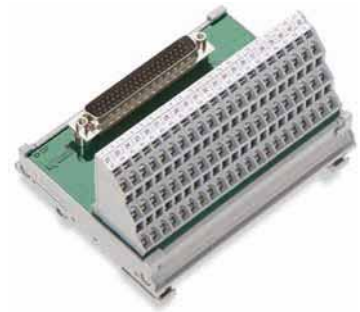
Operating voltage	30 VAC/50 VDC
Nominal current	2 A
Contact resistance	≤ 30 mΩ
Performance level	2 / 200 mating cycles
Nominal voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP00*
Dimensions incl. mounting carrier or feet (mm) W x H x D	W 48 x 85 x, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 736 Series)

Operating voltage	100 VAC/125 VDC
Nominal current	2 A
Contact resistance	≤ 30 mΩ
Performance level	2 / 200 mating cycles
Nominal voltage	100 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP20
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 34 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 236 Series)

Accessories

Marker strips for mounting carrier	Color	Item No.	Pack. Unit
	white	709-198	1
	transparent	709-197	1
Cover carrier, type 1 (57.5 x 128 mm)		709-167	10
Cover, transparent, type 1, 1 m long		709-153	10

Marker strips for mounting carrier	Color	Item No.	Pack. Unit
	white	709-198	1
	transparent	709-197	1



Interface module, with D-subminiature male connector, for mating connectors with solder connection, mating direction vertical PCB terminal blocks, triple-deck, with mounting carrier, with shield connection

Pole No.	Width	Item No.	Pack. Unit
25	56,0	289-620	1
37	74,0	289-621	1

Interface module, HD-Sub-D male connector, PCB terminal blocks, triple-deck, with mounting carrier

Pole No.	Width	Item No.	Pack. Unit
15	35,0	289-714	1
62	108,0	289-710	1

6

Technical Data

Operating voltage	100 VAC/125 VDC
Nominal current	2 A
Contact resistance	≤ 30 mΩ
Performance level	2 / 200 mating cycles
Nominal voltage	100 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP20
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 62 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 737 Series)

Operating voltage	100 VAC/125 VDC
Nominal current	1 A
Contact resistance	≤ 15 mΩ
Performance level	3 / 50 mating cycles
Nominal voltage	100 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP20
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 62 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 737 Series)

Operating voltage	100 VAC/125 VDC
Nominal current	1 A
Contact resistance	≤ 15 mΩ
Performance level	3 / 50 mating cycles
Nominal voltage	100 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP20
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 62 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 737 Series)

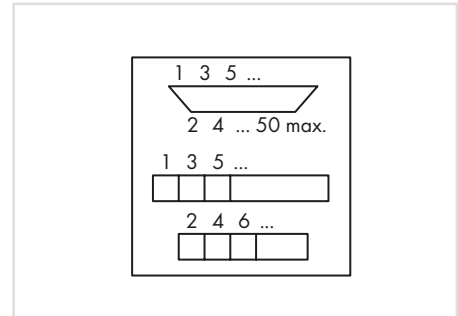
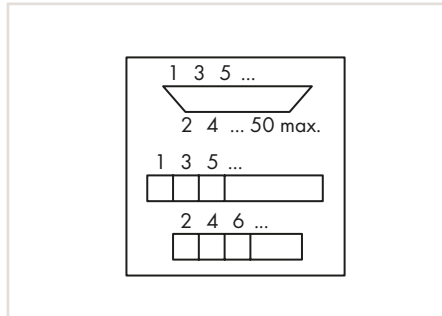
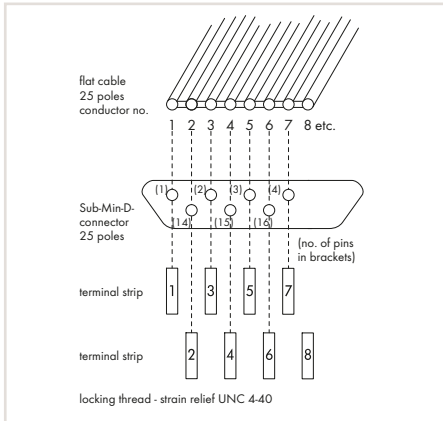
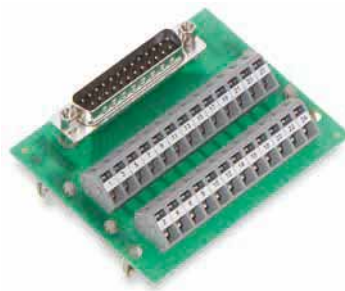
Accessories

Marker strips for mounting carrier	
------------------------------------	--

Color	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1

Color	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1

Interface Modules for Sub-D-/HD-Sub-D Connectors Pin Connectors, with IDC, 289 Series



Interface module, with D-subminiature male connector, for mating connectors with IDC, mating direction vertical PCB terminal blocks, double-deck, with mounting feet

Pole No.	Width	Item No.	Pack. Unit
9	38,0	289-440	1
15	53,5	289-441	1
25	79,0	289-442	1
37	120,0	289-443	1
50	157,0	289-444	1

Interface module, with D-subminiature male connector, for mating connectors with IDC, mating direction vertical PCB terminal blocks, triple-deck, with mounting carrier

Pole No.	Width	Item No.	Pack. Unit
9	38,0	289-540	1
15	46,0	289-541	1
25	72,0	289-542	1
37	102,0	289-543	1
50	94,0	289-544	1

*** Notice:**
Live parts are likely to be touched!! Protection against direct contact must be provided by the equipment builder, e.g., using a 709 Series WAGO Cover (see Accessories) or a similar cover. The installation requirements for the particular application must be observed.

Technical Data	
Operating voltage	30 VAC/50 VDC
Nominal current	1 A
Contact resistance	≤ 30 mΩ
Performance level	2 / 200 mating cycles
Nominal voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP00*
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 19 x 63.5, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 236 Series)

Operating voltage	100 VAC/125 VDC
Nominal current	2 A
Contact resistance	≤ 30 mΩ
Performance level	2 / 200 mating cycles
Nominal voltage	100 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP20
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 34 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 236 Series)

Accessories	
Marker strips for mounting carrier	
Cover carrier, type 1 (57.5 x 128 mm)	
Cover, transparent, type 1, 1 m long	

Color	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1
	709-167	10
	709-153	10

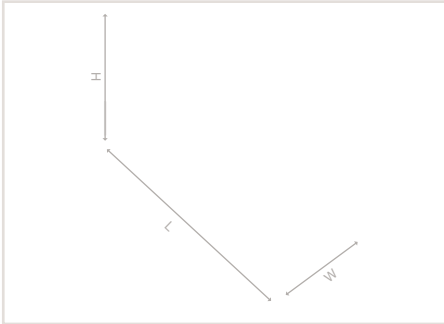
Color	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1

Interface Modules for Sub-D-/HD-Sub-D Connectors Female Connector, 289 Series

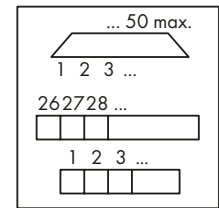
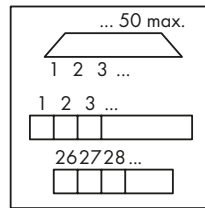
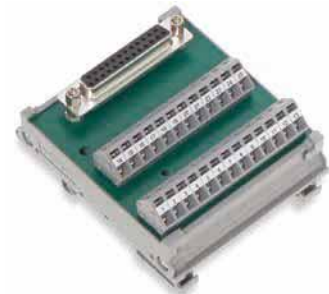
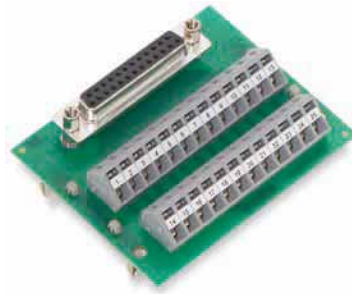


Technical Data

Connector contact	Au over Ni
Pull relief stud bolt	UNC 4-40
Ambient operating temperature	-20 ... +50 °C
Storage temperature	-40 ... +70 °C
Relative humidity	max. 85 % (no condensation)
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Conductor range	0.08 mm ² ... 2.5 mm ² / 28 ... 12 AWG



Interface Modules for Sub-D-/HD-Sub-D Connectors Female Connectors, for Mating Connectors with Solder Connection, 289 Series



* Notice:

Live parts are likely to be touched!! Protection against direct contact must be provided by the equipment builder, e.g., using a 709 Series WAGO Cover (see Accessories) or a similar cover. The installation requirements for the particular application must be observed.

Interface module, with D-subminiature female connector, for mating connectors with solder connection, mating direction vertical PCB terminal blocks, double-deck, with mounting feet

Pole No.	Width	Item No.	Pack. Unit
9	38,0	289-455	1
15	53,5	289-456	1
25	79,0	289-457	1
37	120,0	289-458	1
50	157,0	289-459	1

Interface module, with D-subminiature female connector, for mating connectors with solder connection, mating direction vertical PCB terminal blocks, double-deck, with mounting carrier

Pole No.	Width	Item No.	Pack. Unit
9	38,0	289-555	1
15	46,0	289-556	1
25	72,0	289-557	1
37	102,0	289-558	1
50	94,0	289-559	1

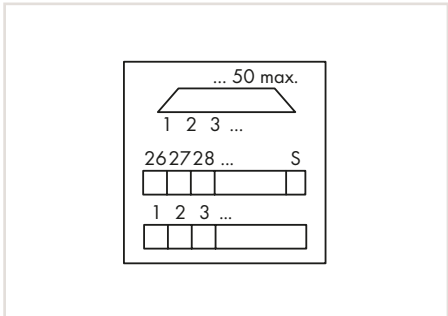
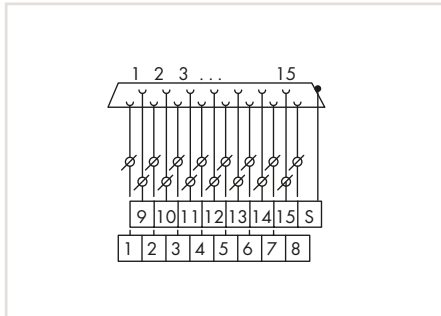
Technical Data

Operating voltage	30 VAC/50 VDC	100 VAC/125 VDC
Nominal current	1 A	2 A
Contact resistance	≤ 30 mΩ	≤ 30 mΩ
Performance level	2 / 200 mating cycles	2 / 200 mating cycles
Nominal voltage	50 V	100 V
Rated surge voltage	0.8 kV	0.8 kV
Pollution degree	2	2
Protection type	IP00*	IP20
Dimensions incl. mounting carrier or feet (mm) W x H x D	B x 19 x 63.5, height from upper-edge of DIN-rail	W x 34 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 236 Series)	CAGE CLAMP® (WAGO 236 Series)

Accessories

	Color	Item No.	Pack. Unit	Color	Item No.	Pack. Unit
Marker strips for mounting carrier	white	709-198	1	white	709-198	1
	transparent	709-197	1	transparent	709-197	1
Cover carrier, type 1 (57.5 x 128 mm)		709-167	10			
Cover, transparent, type 1, 1 m long		709-153	10			

Interface Modules for Sub-D-/HD-Sub-D Connectors Female Connectors, for Mating Connectors with Solder Connection, 289 Series



*** Notice:**
Live parts are likely to be touched!! Protection against direct contact must be provided by the equipment builder, e.g., using a 709 Series WAGO Cover (see Accessories) or a similar cover. The installation requirements for the particular application must be observed.

Interface module, with D-subminiature female connector, PCB terminal blocks, double-deck, with mounting carrier, with solder pin

Pole No.	Width	Item No.	Pack. Unit
9	33,5	289-725	1
15	43,5	289-726	1

1 solder pin per pole is available for testing and patching (except for shield (screen) contact)

Interface module, with D-subminiature female connector, for mating connectors with solder connection, mating direction vertical PCB terminal blocks, double-deck, with mounting carrier, with shield connection

Pole No.	Width	Item No.	Pack. Unit
9	33,0	289-575	1
15	43,0	289-576	1
25	68,5	289-577	1
37	99,0	289-578	1

Technical Data

Operating voltage	30 VAC/50 VDC
Nominal current	2 A
Contact resistance	≤ 30 mΩ
Performance level	2 / 200 mating cycles
Nominal voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP00*
Dimensions incl. mounting carrier or feet (mm) W x H x D	W 48 x 85 x, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 736 Series)

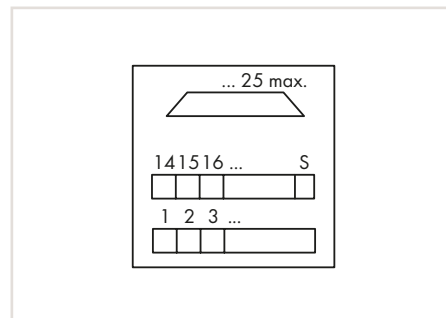
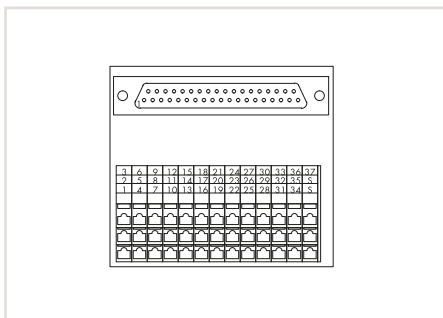
Operating voltage	100 VAC/125 VDC
Nominal current	2 A
Contact resistance	≤ 30 mΩ
Performance level	2 / 200 mating cycles
Nominal voltage	100 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP20
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 34 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 236 Series)

Accessories

Marker strips for mounting carrier	Color	Item No.	Pack. Unit
	white	709-198	1
	transparent	709-197	1
Cover carrier, type 1 (57.5 x 128 mm)		709-167	10
Cover, transparent, type 1, 1 m long		709-153	10

Marker strips for mounting carrier	Color	Item No.	Pack. Unit
	white	709-198	1
	transparent	709-197	1

Marker strips for mounting carrier	Color	Item No.	Pack. Unit
	white	709-198	1
	transparent	709-197	1



Interface module, with D-subminiature female connector, for mating connectors with solder connection, mating direction vertical PCB terminal blocks, triple-deck, with mounting carrier, with shield connection

Pole No.	Width	Item No.	Pack. Unit
25	56,0	289-623	1
37	74,0	289-624	1

Interface module, with D-subminiature female connector, PCB terminal blocks, double-deck, with mounting carrier, with shield connection

Pole No.	Width	Item No.	Pack. Unit
9	33,0	289-650	1
25	68,5	289-652	1

6

Technical Data

Operating voltage	100 VAC/125 VDC
Nominal current	2 A
Contact resistance	≤ 30 mΩ
Performance level	2 / 200 mating cycles
Nominal voltage	100 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP20
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 62 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 737 Series)

Operating voltage	100 VAC/125 VDC
Nominal current	2 A
Contact resistance	≤ 30 mΩ
Performance level	2 / 200 mating cycles
Nominal voltage	100 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP20
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 48 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 736 Series)

Operating voltage	100 VAC/125 VDC
Nominal current	2 A
Contact resistance	≤ 30 mΩ
Performance level	2 / 200 mating cycles
Nominal voltage	100 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP20
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 48 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 736 Series)

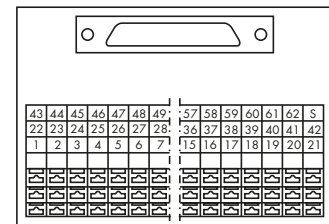
Accessories

Marker strips for mounting carrier	
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Color	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1

Color	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1

Interface Modules for Sub-D-/HD-Sub-D Connectors Female Connectors, for Mating Connectors with Solder Connection, 289 Series



Interface module,
HD-Sub-D female connector
PCB terminal blocks, triple-deck,
with mounting carrier

Pole No.	Width	Item No.	Pack. Unit
15	35	289-713	1
44	79	289-707	1
62	108	289-708	1

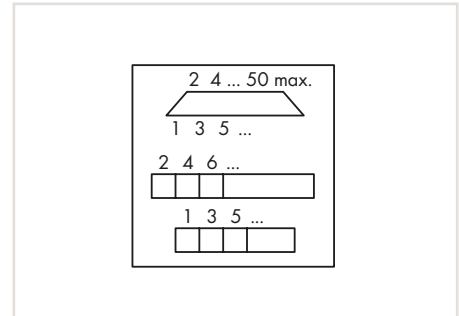
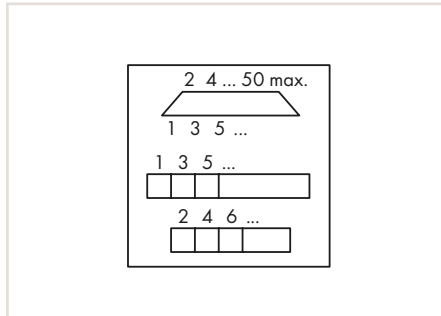
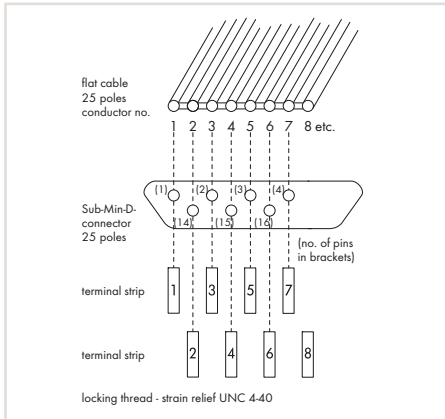
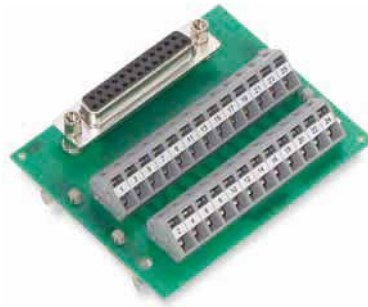
Technical Data

Operating voltage	100 VAC/125 VDC
Nominal current	1 A
Contact resistance	≤ 15 mΩ
Performance level	3 / 50 mating cycles
Nominal voltage	100 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP20
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 62 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 737 Series)

Accessories

Color	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1

Interface Modules for Sub-D-/HD-Sub-D Connectors Female Connector, for Mating Connectors with IDC, 289 Series



*** Notice:**

Live parts are likely to be touched!! Protection against direct contact must be provided by the equipment builder, e.g., using a 709 Series WAGO Cover (see Accessories) or a similar cover. The installation requirements for the particular application must be observed.

Interface module, with D-subminiature female connector, for mating connectors with IDC connection, mating direction vertical PCB terminal blocks, double-deck, with mounting feet

Pole No.	Width	Item No.	Pack. Unit
9	38,0	289-450	1
15	53,5	289-451	1
25	79,0	289-452	1
37	120,0	289-453	1
50	157,0	289-454	1

Interface module, with D-subminiature female connector, for mating connectors with IDC connection, mating direction vertical PCB terminal blocks, double-deck, with mounting carrier

Pole No.	Width	Item No.	Pack. Unit
9	38,0	289-550	1
15	46,0	289-551	1
25	72,0	289-552	1
37	102,0	289-553	1
50	94,0	289-554	1

6

Technical Data

Operating voltage	30 VAC/50 VDC
Nominal current	1 A
Contact resistance	≤ 30 mΩ
Performance level	2 / 200 mating cycles
Nominal voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP00*
Dimensions incl. mounting carrier or feet (mm) W x H x D	B x 19 x 63.5, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 236 Series)

Operating voltage	100 VAC/125 VDC
Nominal current	2 A
Contact resistance	≤ 30 mΩ
Performance level	2 / 200 mating cycles
Nominal voltage	100 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP20
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 34 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 236 Series)

Operating voltage	100 VAC/125 VDC
Nominal current	2 A
Contact resistance	≤ 30 mΩ
Performance level	2 / 200 mating cycles
Nominal voltage	100 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP20
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 34 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 236 Series)

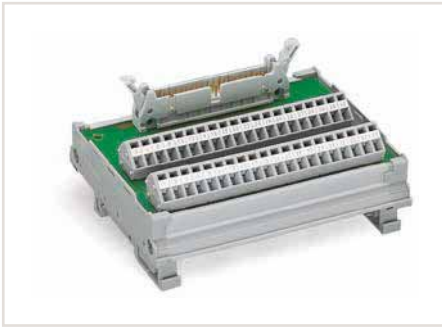
Accessories

Marker strips for mounting carrier	
Cover carrier, type 1 (57.5 x 128 mm)	
Cover, transparent, type 1, 1 m long	

Color	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1
	709-167	10
	709-153	10

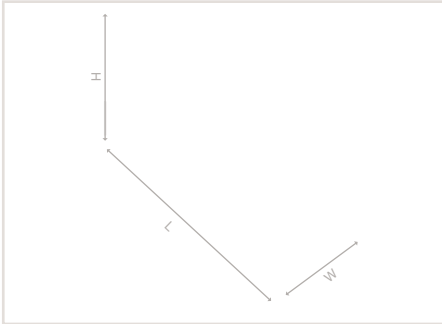
Color	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1

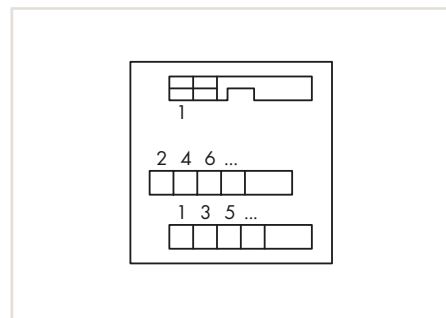
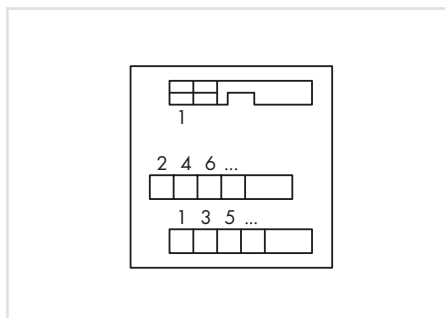
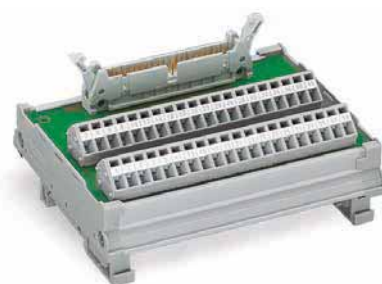
Interface Modules for Connectors acc. to DIN 41651 Male Connector, 289 Series



Technical Data

Nominal current	1 A
Connector contact	Au over Ni
Performance level	3 / 50 mating cycles
Ambient operating temperature	-20 ... +55 °C
Storage temperature	-40 ... +70 °C
Relative humidity	max. 85 % (no condensation)
Conductor range	0.08 mm ² ... 2.5 mm ² / 28 ... 12 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch





*** Notice:**

Live parts are likely to be touched!! Protection against direct contact must be provided by the equipment builder, e.g., using a 709 Series WAGO Cover (see Accessories) or a similar cover. The installation requirements for the particular application must be observed.

Interface module, for connectors acc. to. DIN 41651 PCB terminal blocks, double-deck, with mounting feet

Pole No.	Width	Item No.	Pack. Unit
10	41,0	289-401	1
14	51,5	289-402	1
16	56,5	289-403	1
20	66,5	289-404	1
26	81,0	289-405	1
34	102,0	289-406	1
40	126,0	289-407	1
50	151,0	289-408	1
64	187,0	289-409	1

Interface module, for connectors acc. to. DIN 41651 PCB terminal blocks, double-deck, with mounting carrier

Pole No.	Width	Item No.	Pack. Unit
10	38,0	289-501	1
14	43,0	289-502	1
16	46,0	289-503	1
20	53,5	289-504	1
26	71,0	289-505	1
34	94,0	289-506	1
40	114,0	289-507	1
50	132,0	289-508	1
64	170,0	289-509	1
64	120,0	289-510	1

6

Technical Data

Operating voltage	30 VAC/50 VDC
Nominal voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP00*
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 28 x 63.5, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 236 Series)

Operating voltage	100 VAC/125 VDC
Nominal voltage	100 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP20
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 36 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 236 Series)

Operating voltage	100 VAC/125 VDC
Nominal voltage	100 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP20
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 36 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 236 Series)

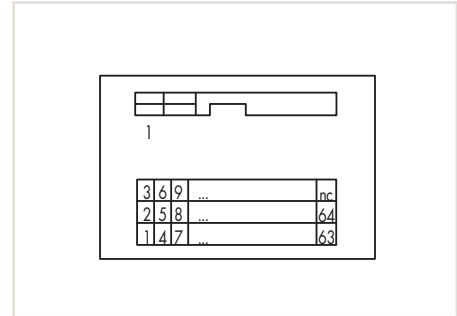
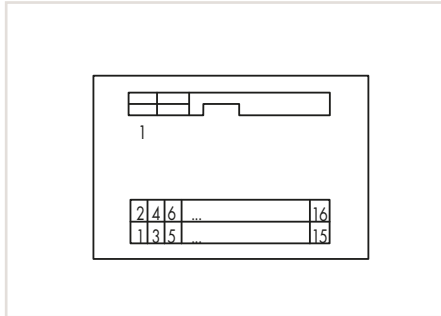
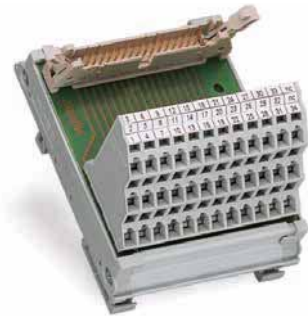
Accessories

Marker strips for mounting carrier		
Cover carrier, type 1 (57.5 x 128 mm)		
Cover, transparent, type 1, 1 m long		

Color	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1
	709-167	10
	709-153	10

Color	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1
	709-167	10
	709-153	10

Interface Modules for Connectors acc. to DIN 41651 Male Connector, 289 Series



Interface module,
for connectors acc. to DIN 41651
PCB terminal blocks, double-deck,
with mounting carrier

Pole No.	Width	Item No.	Pack. Unit
10	35,0	289-611	1
14	40,0	289-612	1
16	45,0	289-613	1

Interface module,
for connectors acc. to DIN 41651
PCB terminal blocks, triple-deck,
with mounting carrier

Pole No.	Width	Item No.	Pack. Unit
20	47,0	289-614	1
26	55,0	289-615	1
34	65,0	289-616	1
40	74,0	289-617	1
50	88,0	289-618	1
64	114,0	289-619	1

Technical Data

Operating voltage	100 VAC/125 VDC
Nominal voltage	100 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP20
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 48 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 736 Series)

Operating voltage	100 VAC/125 VDC
Nominal voltage	100 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP20
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 62 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 737 Series)

Accessories

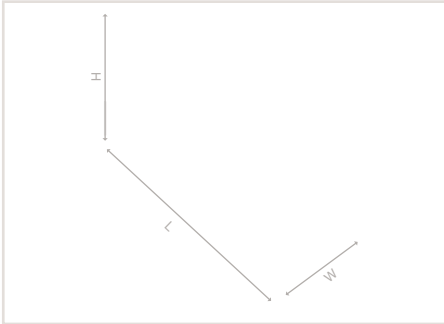
Marker strips for mounting carrier	Color	Item No.	Pack. Unit	Color	Item No.	Pack. Unit
	white	709-198	1	white	709-198	1
	transparent	709-197	1	transparent	709-197	1

Interface Modules for Connectors acc. to DIN 41612 Type C Female Connector, 289 Series

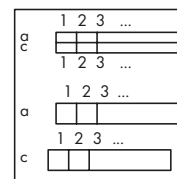
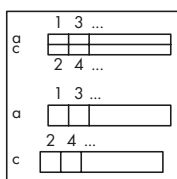
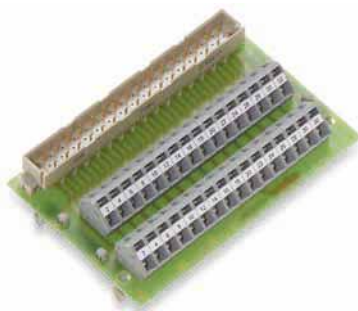


Technical Data

Nominal current	1 A
Connector contact	Copper alloy, gold plated
Contact resistance	≤ 20 mΩ
Performance level	2 / 400 mating cycles
Ambient operating temperature	-20 ... +50 °C
Storage temperature	-40 ... +70 °C
Relative humidity	max. 85 % (no condensation)
Connection technology	CAGE CLAMP® (WAGO 236 Series)
Conductor range	0.08 mm ² ... 2.5 mm ² / 28 ... 12 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch



Interface Modules for Connectors acc. to DIN 41612 Type C Female Connector, 289 Series



* Notice:

Live parts are likely to be touched!! Protection against direct contact must be provided by the equipment builder, e.g., using a 709 Series WAGO Cover (see Accessories) or a similar cover. The installation requirements for the particular application must be observed.

Interface module, for connectors acc. to DIN 41612, 64-pole for mating connectors for IDC connection, mating direction vertical PCB terminal blocks, double-deck, with mounting feet, type C

Pole No.	Width	Item No.	Pack. Unit
64	187,0	289-422	1

Interface module, for connectors acc. to DIN 41612, 64-pole for mating connectors for solder connection, mating direction horizontal PCB terminal blocks, double-deck, with mounting feet, type C

Pole No.	Width	Item No.	Pack. Unit
64	187,0	289-427	1

Technical Data

Operating voltage	30 VAC/50 VDC
Nominal voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP00*
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 21 x 63.5, height from upper-edge of DIN-rail

Operating voltage	30 VAC/50 VDC
Nominal voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP00*
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 21 x 63.5, height from upper-edge of DIN-rail

Operating voltage	30 VAC/50 VDC
Nominal voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP00*
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 21 x 63.5, height from upper-edge of DIN-rail

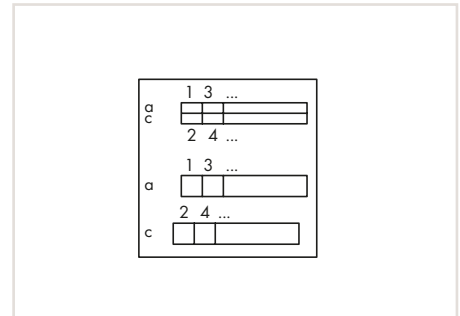
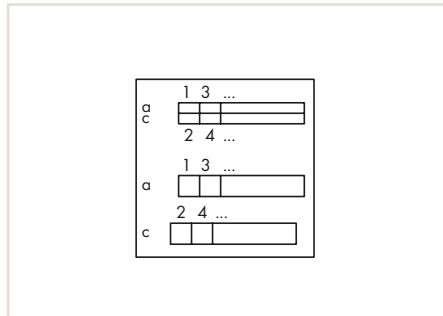
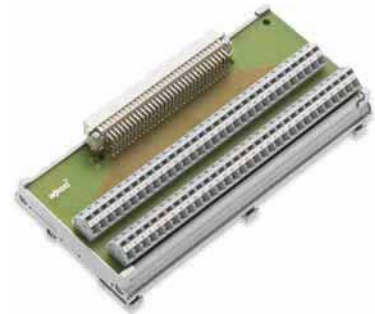
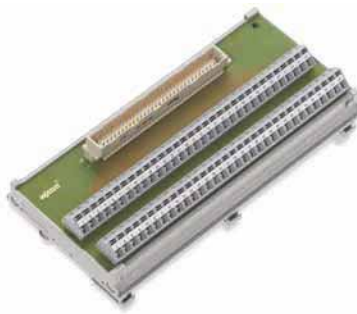
Accessories

Marker strips for mounting carrier	
Cover carrier, type 1 (57.5 x 128 mm)	
Cover, transparent, type 1, 1 m long	

Color	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1
	709-167	10
	709-153	10

Color	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1
	709-167	10
	709-153	10

Interface Modules for Connectors acc. to DIN 41612 Type C Female Connector, 289 Series



*** Notice:**
Live parts are likely to be touched!! Protection against direct contact must be provided by the equipment builder, e.g., using a 709 Series WAGO Cover (see Accessories) or a similar cover. The installation requirements for the particular application must be observed.

Interface module, for connectors acc. to DIN 41612, 64-pole for mating connectors for IDC connection, mating direction vertical PCB terminal blocks, double-deck, with mounting carrier, type C

Pole No.	Width	Item No.	Pack. Unit
64	171,0	289-522	1

Interface module, for connectors acc. to DIN 41612, 64-pole for mating connectors for IDC connection, mating direction horizontal PCB terminal blocks, double-deck, with mounting carrier, type C

Pole No.	Width	Item No.	Pack. Unit
64	171,0	289-523	1

Technical Data

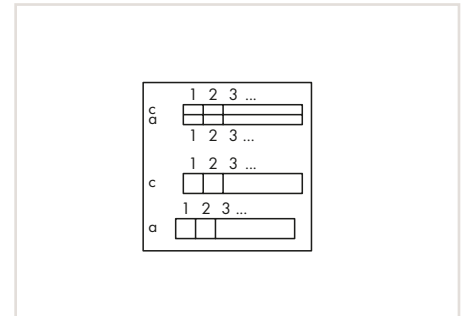
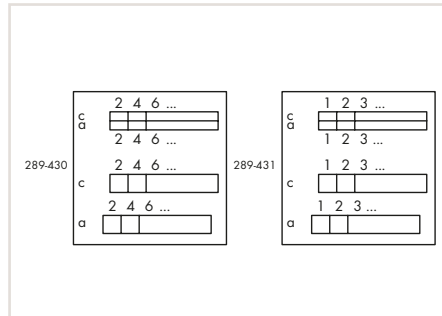
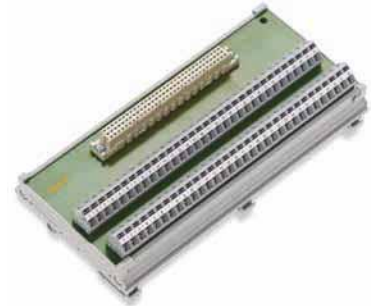
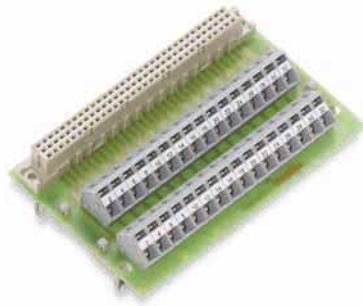
Operating voltage	100 VAC/125 VDC
Nominal voltage	100 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP20
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 34 x 85, height from upper-edge of DIN-rail

Operating voltage	30 VAC/50 VDC
Nominal voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2
Protection type	IP00*
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 34 x 85, height from upper-edge of DIN-rail

Accessories

	Color	Item No.	Pack. Unit	Color	Item No.	Pack. Unit
Marker strips for mounting carrier	white	709-198	1	white	709-198	1
	transparent	709-197	1	transparent	709-197	1
Cover carrier, type 1 (57.5 x 128 mm)		709-167	10		709-167	10
Cover, transparent, type 1, 1 m long		709-153	10		709-153	10

Interface Modules for Connectors acc. to DIN 41612 Type C Female Connector, 289 Series



* Notice:

Live parts are likely to be touched!! Protection against direct contact must be provided by the equipment builder, e.g., using a 709 Series WAGO Cover (see Accessories) or a similar cover. The installation requirements for the particular application must be observed.

Interface module, for connectors acc. to DIN 41612, for mating connectors for solder connection, mating direction vertical PCB terminal blocks, double-deck, with mounting feet, type C

Pole No.	Width	Item No.	Pack. Unit
32	97,0	289-430	1
64	187,0	289-431	1

Interface module, for connectors acc. to DIN 41612, 64-pole for mating connectors for solder connection, mating direction vertical PCB terminal blocks, double-deck, with mounting carrier, type C

Pole No.	Width	Item No.	Pack. Unit
64	171,0	289-531	1

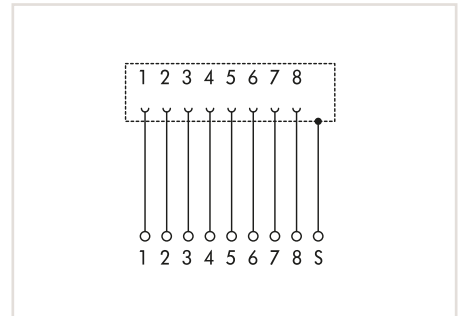
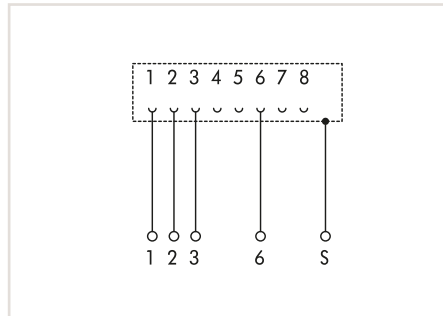
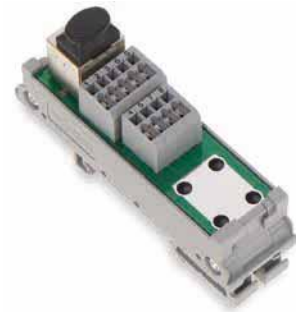
Technical Data

Operating voltage	30 VAC/50 VDC	100 VAC/125 VDC
Nominal voltage	50 V	100 V
Rated surge voltage	0.8 kV	0.8 kV
Pollution degree	2	2
Protection type	IP00*	IP20
Dimensions incl. mounting carrier or feet (mm) W x H x D	W x 21 x 63.5, height from upper-edge of DIN-rail	W x 34 x 85, height from upper-edge of DIN-rail

Accessories

Marker strips for mounting carrier	Color	Item No.	Pack. Unit	Color	Item No.	Pack. Unit
	white	709-198	1	white	709-198	1
Cover carrier, type 1 (57.5 x 128 mm)	transparent	709-197	1	transparent	709-197	1
		709-167	10			
		709-153	10			
Cover, transparent, type 1, 1 m long						

Interface Modules for RJ-45 Connectors 289 Series



RJ-45 interface module,
PCB terminal blocks, Cat. 5,
with mounting carrier,
with shield connection

	Item No.	Pack. Unit
	289-174	1
with shield clamping saddle	289-174/790-108	1

RJ-45 interface module,
PCB terminal blocks, double-deck, Cat. 5,
with mounting carrier,
with shield connection

	Item No.	Pack. Unit
	289-175	1
with shield clamping saddle	289-175/790-108	1

Technical Data

Connection Cables	min. Cat. 5
Max. transmission length	100 m
Connector	RJ-45, shielded
Min. mating cycles	500
Current load	≤ 1.5 A
Insulation resistance	> 500 MΩ
Dielectric strength contact-contact	1 kV _{rms}
Contact resistance	typ. < 20 mΩ
Ambient operating temperature	-40 ... +85 °C (actuation: -35 ... +85 °C)
Relative humidity	max. 85 % (no condensation)
Dimensions incl. mounting carrier or feet (mm) W x H x D	24 x 40 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 739 Series)
Conductor range	0.08 mm² ... 1.5 mm² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Standards/approvals	ISO/IEC 11801: 2002-09; EN 55022

min. Cat. 5
100 m
RJ-45, shielded
500
≤ 1.5 A
> 500 MΩ
1 kV _{rms}
typ. < 20 mΩ
-40 ... +85 °C (actuation: -35 ... +85 °C)
max. 85 % (no condensation)
24 x 40 x 85, height from upper-edge of DIN-rail
CAGE CLAMP® (WAGO 739 Series)
0.08 mm² ... 1.5 mm² / 28 ... 14 AWG
5 ... 6 mm / 0.2 ... 0.24 inch
ISO/IEC 11801: 2002-09; EN 55022

min. Cat. 5
100 m
RJ-45, shielded
500
≤ 1.5 A
> 500 MΩ
1 kV _{rms}
typ. < 20 mΩ
-40 ... +85 °C (actuation: -35 ... +85 °C)
max. 85 % (no condensation)
24 x 40 x 85, height from upper-edge of DIN-rail
CAGE CLAMP® (WAGO 739 Series)
0.08 mm² ... 1.5 mm² / 28 ... 14 AWG
5 ... 6 mm / 0.2 ... 0.24 inch
ISO/IEC 11801: 2002-09; EN 55022

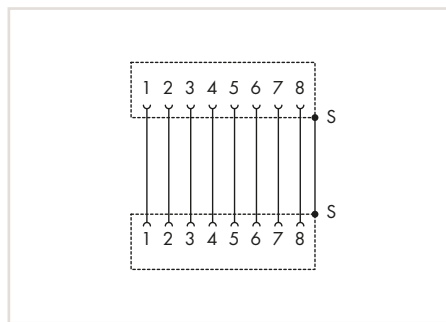
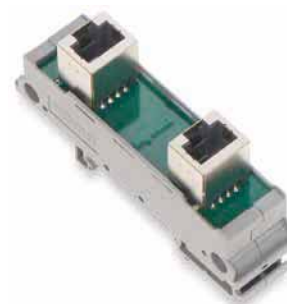
Accessories

Marker strips for mounting carrier	
WAGO shield clamping saddle 11 mm wide; cable diameter up to 8 mm	

Color	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1
	790-108	50

Color	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1
	790-108	50

WMB Multi marking system,
see page 608



Interface module, RS-45, RS-45, Cat. 5, with mounting carrier

Item No.	Pack. Unit
289-172	1

6

Technical Data

Connection Cables	min. Cat. 5
Max. transmission length	100 m
Connector	RJ-45 shielded
Min. mating cycles	500
Current load	≤ 1.5 A
Voltage load	30 VAC/42 VDC
Insulation resistance	> 500 MΩ
Dielectric strength contact-contact	1 kV _{rms.}
Contact resistance typ.	< 20 mΩ
WAGO shield clamping saddle	
Ambient operating temperature	-40 ... +85 °C
Relative humidity	max. 85 % (no condensation)
Dimensions incl. mounting carrier or feet (mm) W x H x D	20.5 x 51 x 85, height from upper-edge of DIN-rail
Standards/approvals	ISO/IEC 11801: 2002-09; EN 55022

Accessories

Marker strips for mounting carrier	Color	Item No.	Pack. Unit
	white	709-198	1
	transparent	709-197	1

Interface Modules for RJ-45 Connectors 289 Series



RJ-45 interface module,
with IDC, Cat. 6,
with mounting carrier,
with shield connection

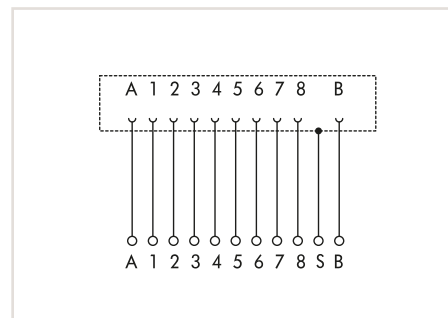
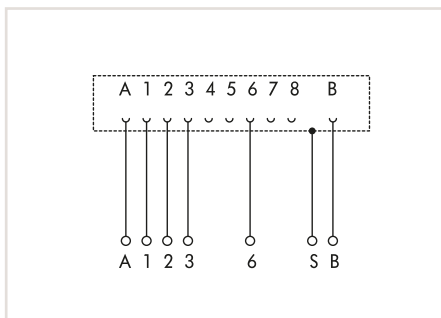
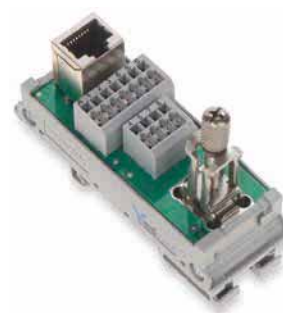
Item No.	Pack. Unit
289-195	1

Technical Data

RJ-45 Connection Module	
Connection Cables	min. Cat. 6
Connector	1 x RJ-45/SC-RJ, shielded
Contact material	CuSn
Contact plating	> 0.76 µm Au over > 1.2 µm Ni
Contact resistance typ.	< 50 mΩ (at 20 °C)
Min. mating cycles	750
Pole No.	8
Connection technology	IDC connection
IDC surface treatment	CuSn, tin-plated
Conductor range	solid: 0.2 ... 0.32 mm ² / 24 ... 22 AWG stranded: 0.2 ... 0.32 mm ² / 26/7 ... 22/7 AWG
Strip length	0.8 ... 1.6 mm / 0.03 ... 0.06 inch
Shield contacting	Large area, via shield latch
Mounting Adapter	
Housing color	gray
Shield	Bronze (CuSn ₆), tin coating
Through resistance	≤ 20 mΩ
Contact resistance	≤ 5 mΩ
General Specifications	
Dimensions (mm) W x H x D	26.8 x 64.4 x 81.4, height from upper-edge of DIN-rail
Protection type	IP20
Ambient operating temperature	-10 ... +60 °C
Storage temperature	-40 ... +70 °C
Relative humidity	< 95 % (no condensation)
Standards/approvals	ISO/IEC 11801: 2011-06; IEC 60603-7; EN 50173-1: May 2011

Interface Modules with Power Contacts for RJ-45 Connectors

289 Series



RJ-45 interface module, with power contacts, PCB terminal blocks, Cat. 5, with mounting carrier with shield connection, with shield clamping saddle

RJ-45 interface module, with power contacts, PCB terminal blocks, double-deck, Cat. 5, with mounting carrier, with shield connection, with shield clamping saddle

Item No.	Pack. Unit
289-178	1

Item No.	Pack. Unit
289-179	1

Technical Data

Connection Cables	min. Cat. 5
Max. transmission length	100 m
Connector	RJ-45, shielded, with 2 additional power contacts
Min. mating cycles	1000
Current load	≤ 2.1 A
Voltage load	35 VAC/50 VDC
Insulation resistance	> 500 MΩ
Dielectric strength contact-contact	1 kV _{rms}
Contact resistance typ.	typ. 40 mΩ
WAGO shield clamping saddle	11 mm wide; cable diameter up to 8 mm
Ambient operating temperature	-40 ... +85 °C (actuation: -35 ... +85 °C)
Relative humidity	max. 85 % (no condensation)
Dimensions incl. mounting carrier or feet (mm) W x H x D	30 x 67 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 739 Series)
Conductor range	0.08 mm ² ... 1.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Standards/approvals	ISO/IEC 11801: 2002-09; EN 55022

Connection Cables	min. Cat. 5
Max. transmission length	100 m
Connector	RJ-45, shielded, with 2 additional power contacts
Min. mating cycles	1000
Current load	≤ 2.1 A
Voltage load	35 VAC/50 VDC
Insulation resistance	> 500 MΩ
Dielectric strength contact-contact	1 kV _{rms}
Contact resistance typ.	< 40 mΩ
WAGO shield clamping saddle	11 mm wide; cable diameter up to 8 mm
Ambient operating temperature	-40 ... +85 °C (actuation: -35 ... +85 °C)
Relative humidity	max. 85 % (no condensation)
Dimensions incl. mounting carrier or feet (mm) W x H x D	30 x 67 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 739 Series)
Conductor range	0.08 mm ² ... 1.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Standards/approvals	ISO/IEC 11801: 2002-09; EN 55022

Connection Cables	min. Cat. 5
Max. transmission length	100 m
Connector	RJ-45, shielded, with 2 additional power contacts
Min. mating cycles	1000
Current load	≤ 2.1 A
Voltage load	35 VAC/50 VDC
Insulation resistance	> 500 MΩ
Dielectric strength contact-contact	1 kV _{rms}
Contact resistance typ.	< 40 mΩ
WAGO shield clamping saddle	11 mm wide; cable diameter up to 8 mm
Ambient operating temperature	-40 ... +85 °C (actuation: -35 ... +85 °C)
Relative humidity	max. 85 % (no condensation)
Dimensions incl. mounting carrier or feet (mm) W x H x D	30 x 67 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 739 Series)
Conductor range	0.08 mm ² ... 1.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Standards/approvals	ISO/IEC 11801: 2002-09; EN 55022

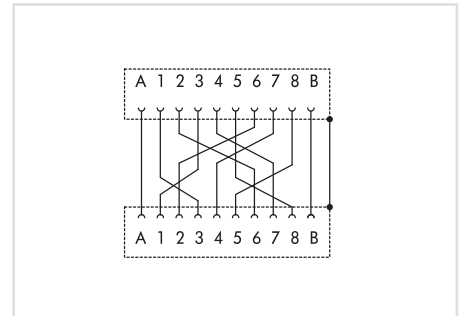
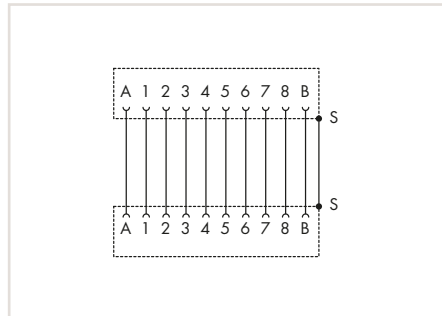
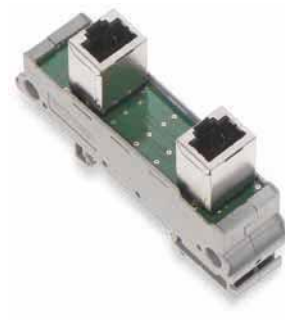
Accessories

Marker strips for mounting carrier	
------------------------------------	--

Color	Item No.	Pack. Unit
white	709-198	
transparent	709-197	

Color	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1

Interface Modules with Power Contacts for RJ-45 Connectors 289 Series



RJ-45 interface module,
with power contacts,
RJ-45, Cat. 5,
with mounting carrier

Item No.	Pack. Unit
289-176	1

RJ-45 interface module,
with power contacts cross-over connection,
RJ-45, Cat. 5,
with mounting carrier

Item No.	Pack. Unit
289-177	1

6

Technical Data

Connection Cables	min. Cat. 5
Max. transmission length	100 m
Connector	RJ-45, shielded, with 2 additional power contacts
Min. mating cycles	1000
Current load	≤ 2.1 A
Voltage load	35 VAC/50 VDC
Insulation resistance	> 500 MΩ
Dielectric strength contact-contact	1 kV _{rms.}
Contact resistance typ.	< 40 mΩ
WAGO shield clamping saddle	
Ambient operating temperature	-40 ... +85 °C
Relative humidity	max. 85 % (no condensation)
Dimensions incl. mounting carrier or feet (mm) W x H x D	30 x 51 x 85, height from upper-edge of DIN-rail
Standards/approvals	ISO/IEC 11801: 2002-09; EN 55022

Connection Cables	min. Cat. 5
Max. transmission length	100 m
Connector	RJ-45, shielded, with 2 additional power contacts
Min. mating cycles	1000
Current load	≤ 2.1 A
Voltage load	35 VAC/50 VDC
Insulation resistance	> 500 MΩ
Dielectric strength contact-contact	1 kV _{rms.}
Contact resistance typ.	typ. < 40 mΩ
WAGO shield clamping saddle	
Ambient operating temperature	-40 ... +85 °C
Relative humidity	max. 85 % (no condensation)
Dimensions incl. mounting carrier or feet (mm) W x H x D	30 x 51 x 85, height from upper-edge of DIN-rail
Standards/approvals	ISO/IEC 11801: 2002-09; EN 55022

Connection Cables	min. Cat. 5
Max. transmission length	100 m
Connector	RJ-45, shielded, with 2 additional power contacts
Min. mating cycles	1000
Current load	≤ 2.1 A
Voltage load	35 VAC/50 VDC
Insulation resistance	> 500 MΩ
Dielectric strength contact-contact	1 kV _{rms.}
Contact resistance typ.	typ. < 40 mΩ
WAGO shield clamping saddle	
Ambient operating temperature	-40 ... +85 °C
Relative humidity	max. 85 % (no condensation)
Dimensions incl. mounting carrier or feet (mm) W x H x D	30 x 51 x 85, height from upper-edge of DIN-rail
Standards/approvals	ISO/IEC 11801: 2002-09; EN 55022

Accessories

Marker strips for mounting carrier	
------------------------------------	--

Color	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1

Color	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1

WMB Multi marking system,
see page 608

Interface Modules

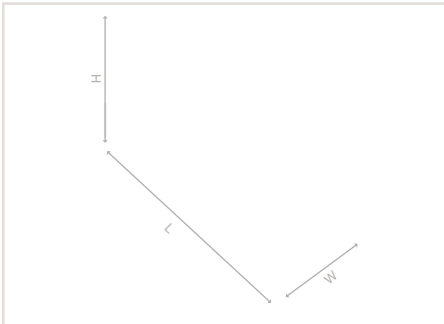
Connection Modules for Sensors and Actuators

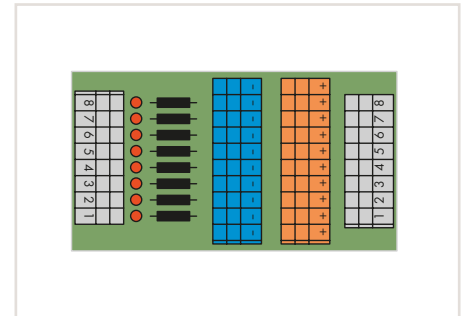
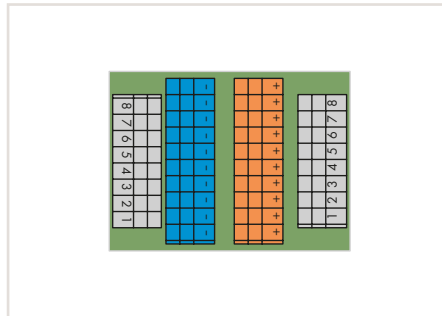
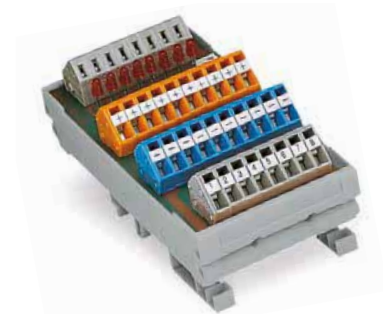
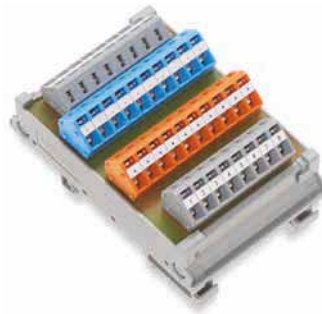
289 Series



Technical Data

Max. current per connection	1 A
Max. total current	8 A
Ambient operating temperature	-20 ... +50 °C
Storage temperature	-40 ... +70 °C
Relative humidity	max. 85 % (no condensation)
Connection technology	CAGE CLAMP® (WAGO 236 Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch





Sensor/actuator module,
8-channel digital input,
3-conductor,
with mounting carrier

Item No.	Pack. Unit
289-664	1

Sensor/actuator module,
8-channel digital input,
3-conductor, positive switching
status indication red,
with mounting carrier

Item No.	Pack. Unit
289-665	1

6

Technical Data

Operating voltage	100 VAC/125 VDC
Power consumption LED	5.2 mA
Nominal voltage	100 V
Rated surge voltage	0.8 kV
Pollution degree	2
Dimensions incl. mounting carrier or feet (mm) W x H x D	56 x 34 x 85, height from upper-edge of DIN-rail

Operating voltage	24 VDC (± 10 %)
Power consumption LED	5.2 mA
Nominal voltage	100 V
Rated surge voltage	0.8 kV
Pollution degree	2
Dimensions incl. mounting carrier or feet (mm) W x H x D	56 x 34 x 105, height from upper-edge of DIN-rail

Operating voltage	24 VDC (± 10 %)
Power consumption LED	5.2 mA
Nominal voltage	100 V
Rated surge voltage	0.8 kV
Pollution degree	2
Dimensions incl. mounting carrier or feet (mm) W x H x D	56 x 34 x 105, height from upper-edge of DIN-rail

Accessories

Marker strips for mounting carrier	Color	Item No.	Pack. Unit
	white	709-198	1
	transparent	709-197	1

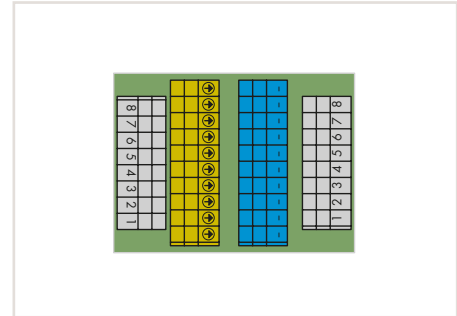
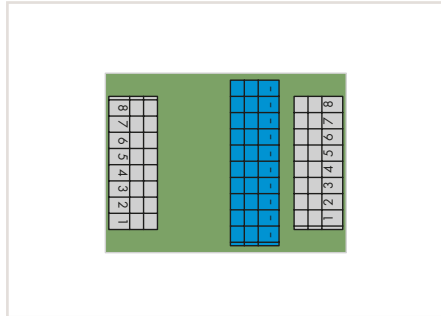
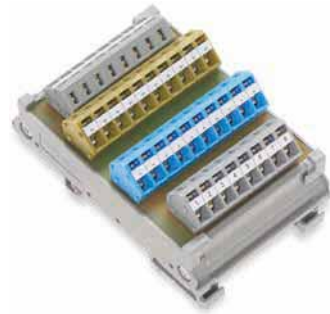
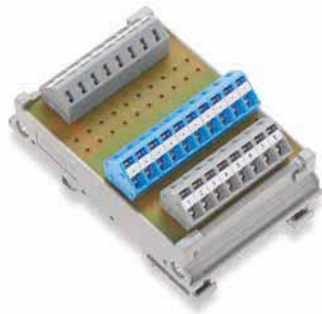
Color	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1

Color	Item No.	Pack. Unit
white	709-198	1
transparent	709-197	1

Interface Modules

Connection Modules for Sensors and Actuators

289 Series



Sensor/actuator module,
8-channel digital output,
2-conductor,
with mounting carrier

Item No.	Pack. Unit
289-667	1

Sensor/actuator module,
8-channel digital output,
2-conductor,
with function ground,
with mounting carrier

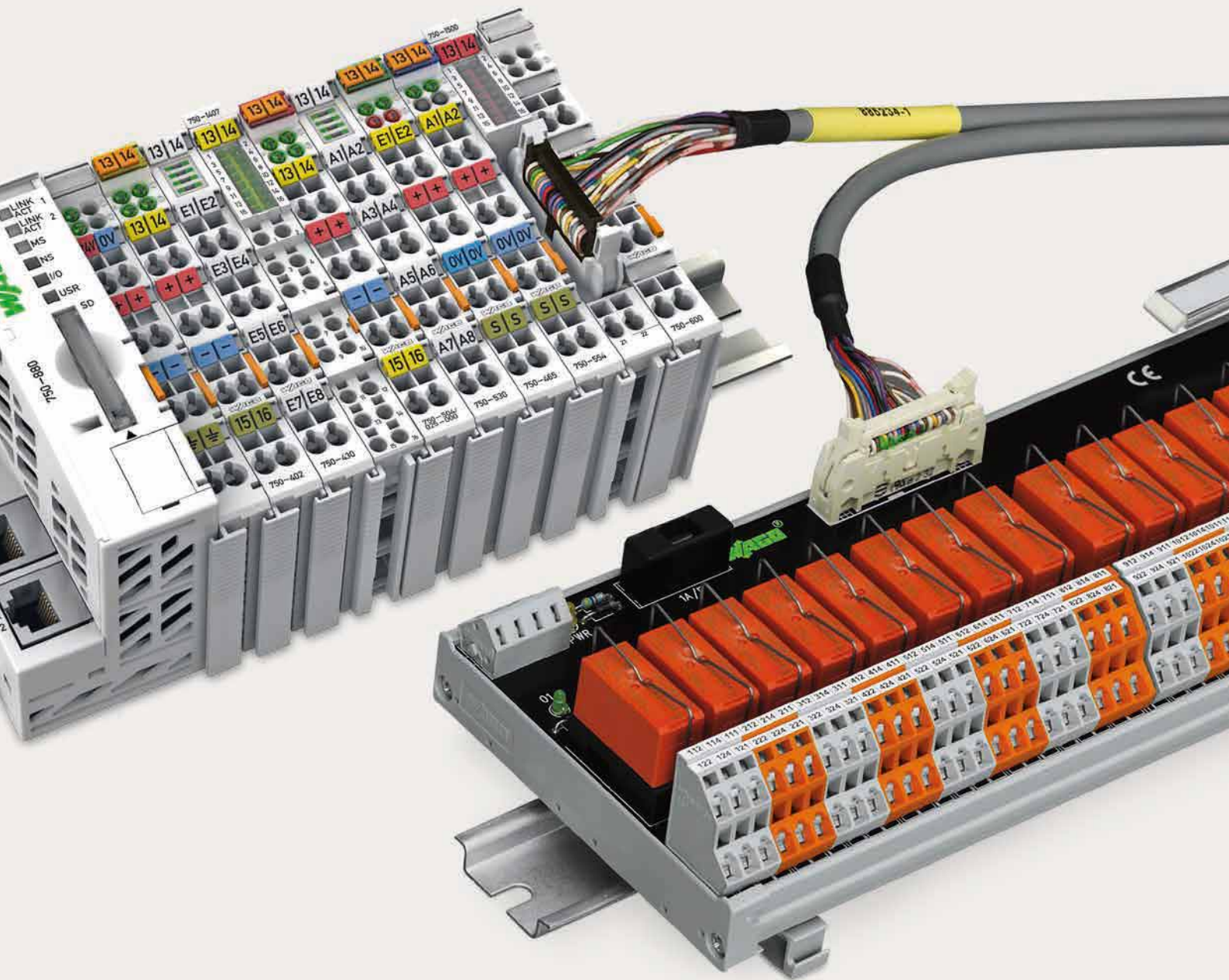
Item No.	Pack. Unit
289-671	1

Technical Data

Operating voltage	100 VAC/125 VDC	100 VAC/125 VDC
Power consumption LED		
Nominal voltage	100 V	100 V
Rated surge voltage	1.5 kV	1.5 kV
Pollution degree	2	2
Dimensions incl. mounting carrier or feet (mm) W x H x D	56 x 34 x 85, height from upper-edge of DIN-rail	56 x 34 x 105, height from upper-edge of DIN-rail




Accessories

Marker strips for mounting carrier	Color	Item No.	Pack. Unit	Color	Item No.	Pack. Unit
	white	709-198	1	white	709-198	1
transparent	709-197	1	transparent	709-197	1	



System Wiring

System Wiring

	Page
	WAGO System Wiring Overview and Application Examples 466
	Interface Modules for System Wiring Input/Output Modules, 704 Series 470 Interface Adapters, 857 Series 480
	WAGO Interface Cables, 706 Series for 289, 704 Series 482 for Interface Adapters, 857 Series 488

WAGO System Wiring Overview and Application Examples

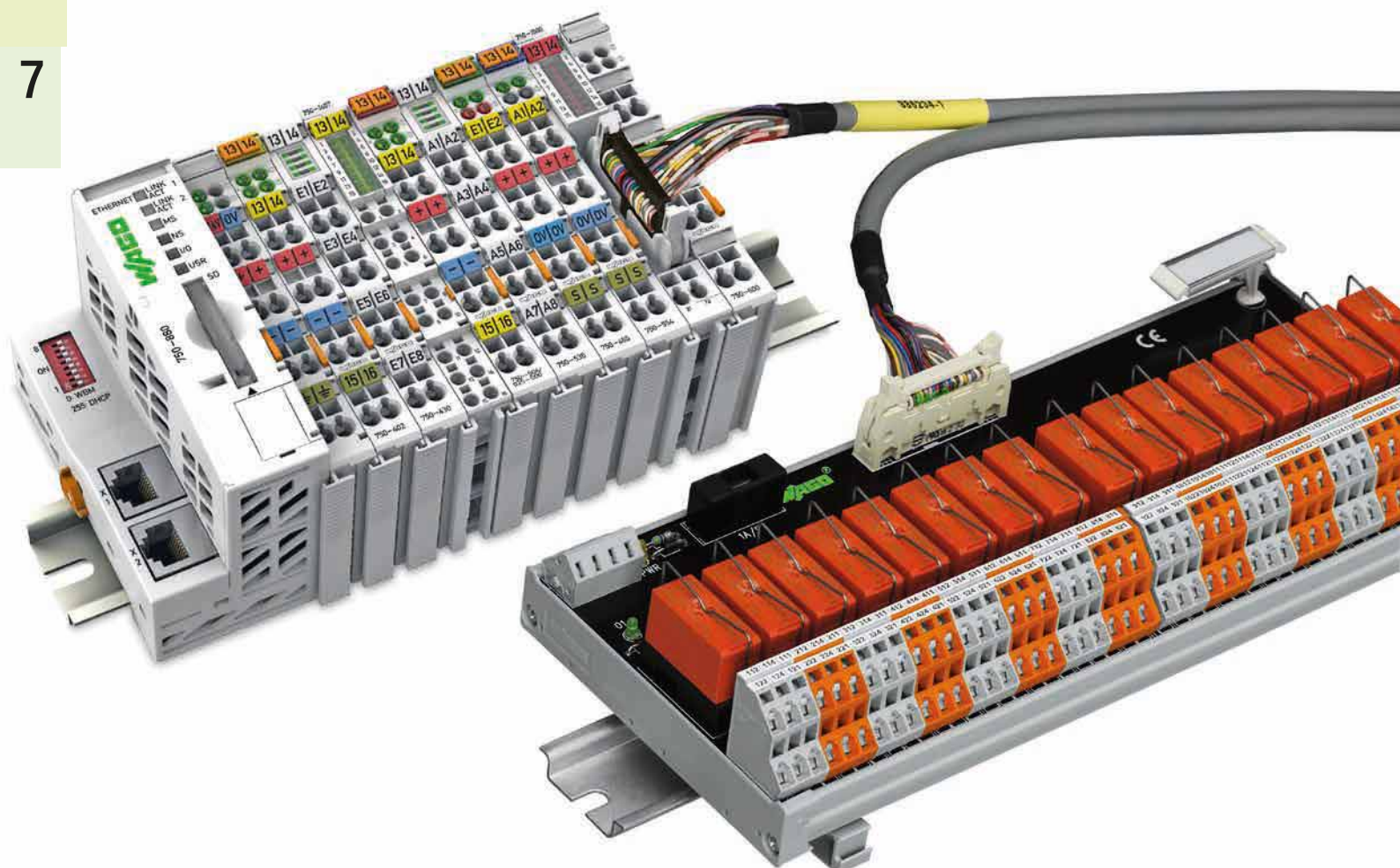
16-channel I/O module with interface module

The new 750-14xx and 750-15xx Series I/O Modules with cable connection acc. to DIN 41651 offer 16 digital channels in a module less than 1/2 inch (12mm) wide. Offering quick connections and a space-efficient design, the DIN-rail-mount interface modules simplify installation in confined areas and conveniently relocate the termination point. When combined with WAGO interface modules (e.g., item no. 289-614, 289-611), a switch cabinet can be pre-wired before install to minimize wiring time and errors. This is beneficial as wiring can be performed independently of construction.

Pre-wired electronics can be installed right before start-up, saving valuable time during final stages of project completion. The modules are also ideal for connecting series machines or relay modules tasked with the higher loads common to buildings and industrial applications. The interface module also combines the advantages of relays (e.g., manual operation or rapid replacement with socket-mounted versions) with the benefits of a modern I/O system. Another ideal application would be the integration of pneumatic controllers into a fieldbus network.

Most pneumatic modules have an appropriate connector and can be controlled by the WAGO-I/O-SYSTEM. Six variants are available: two 16-channel input or output modules (one high-side and one low-side switching variant), as well as two versions combining 8 inputs and 8 outputs.

7
7



Application Example		
WAGO-I/O-SYSTEM 753	WAGO Interface Cables	WAGO Interface Modules
		
753-430 (x2), 16 DI	WAGO-753 T8ES, 2 m long 706-7753/301-200	T16ES 704-2004

WAGO-I/O-SYSTEM 753			WAGO Interface Cables		WAGO Interface Modules	
	I/O Modules		Item No.	Qty.	Type	Qty.
DI	753-430 (x1)	8 DI	706-7753/300-XXX	1	T8ES	1
	753-430 (x2)	16 DI	706-7753/301-XXX	1	T16ES	1
	753-431 (x1)	8 DI	706-7753/300-XXX	1	T8ES	1
	753-431 (x2)	16 DI	706-7753/301-XXX	1	T16ES	1
DO	753-530 (x1)	8 DO	706-7753/300-XXX	1	T8ES/T8S	1
	753-530 (x2)	16 DO	706-7753/301-XXX	1	T16ES/T16S	1

Overview over cables and interface modules see page 469!

WAGO-I/O-SYSTEM 750			WAGO Interface Cables		WAGO Interface Modules	
	I/O Modules		Item No.	Qty.	Type	Qty.
DI	750-1400	16 DI	706-3057/300-XXX	1	T16ES	1
DO	750-1500	16 DO	706-3057/300-XXX	1	T16ES	1
DI/DO	750-1502	8 DI/8 DO	706-7753/302-XXX	1	T8ES/T8S	1/1
	750-1502	8 DI/8 DO	706-3057/300-XXX	1	T16ES	1

Overview over cables and interface modules see page 469!

WAGO System Wiring Overview and Application Examples

SIEMENS S7-300			WAGO Interface Cables		WAGO Interface Modules	
			Item No.	Qty.	Type	Qty.
CPU	6ES7 313-5BE01-0AB0	16 DI/16 DO	706-2300/301-XXX	1	T16ES/T16S	1/1
	6ES7 313-5BF03-0AB0	16 DI/16 DO	706-2300/301-XXX	1	T16ES/T16S	1/1
	6ES7 313-6BE01-0AB0	16 DI/16 DO	706-2300/301-XXX	1	T16ES/T16S	1/1
	6ES7 313-6BF03-0AB0	16 DI/16 DO	706-2300/301-XXX	1	T16ES/T16S	1/1
	6ES7 313-6CE01-0AB0	16 DI/16 DO	706-2300/301-XXX	1	T16ES/T16S	1/1
	6ES7 313-6CF03-0AB0	16 DI/16 DO	706-2300/301-XXX	1	T16ES/T16S	1/1
	6ES7 314-6BF01-0AB0	16 DI/16 DO	706-2300/301-XXX	1	T16ES/T16S	1/1
	6ES7 314-6BG03-0AB0	16 DI/16 DO	706-2300/301-XXX	1	T16ES/T16S	1/1
	6ES7 314-6CG03-0AB0	16 DI/16 DO	706-2300/301-XXX	1	T16ES/T16S	1/1
DI	6ES7 321-1BH02-0AA0	16 DI	706-2300/300-XXX	1	T16ES	1
	6ES7 321-1BH10-0AA0	16 DI	706-2300/300-XXX	1	T16ES	1
	6ES7 321-1BH80-0AA0	16 DI	706-2300/300-XXX	1	T16ES	1
	6ES7 321-1BL00-0AA0	32 DI	706-2300/301-XXX	1	T16ES	2
	6ES7 321-1BL80-0AA0	32 DI	706-2300/301-XXX	1	T16ES	2
	6ES7 321-1BP00-0AA0	64 DI	706-2300/100-XXX	2	T16ES	4
	6ES7 321-7BH01-0AA0	16 DI	706-2300/101-XXX	1	T16ES	1
	6ES7 321-7BH80-0AA0	16 DI	706-2300/101-XXX	1	T16ES	1
DO	6ES7 322-1BH01-0AA0	16 DO	706-2300/300-XXX	1	T16ES /T16S	1
	6ES7 322-1BH10-0AA0	16 DO	706-2300/300-XXX	1	T16ES /T16S	1
	6ES7 322-1BH80-0AA0	16 DO	706-2300/300-XXX	1	T16ES /T16S	1
	6ES7 322-1BL00-0AA0	32 DO	706-2300/301-XXX	1	T16ES /T16S	2
	6ES7 322-1BP00-0AA0	64 DO	706-2300/200-XXX	2	T16ES /T16S	4
	6ES7 322-1EH01-0AA0	16 DO	706-2300/300-XXX	1	T16ES /T16S	1
AI	6ES7 331-7HF01-0AB0	8 AI	706-2300/400-XXX	1	A8ES	1
	6ES7 331-7KF02-0AB0	8 AI	706-2300/400-XXX	1	A8ES	1
	6ES7 331-7NF00-0AB0	8 AI	706-2300/404-XXX	1	A8ES	1
	6ES7 331-7NF10-0AB0	8 AI	706-2300/406-XXX	1	A8ES	1
	6ES7 331-7SF00-0AB0	8 AI	706-2300/400-XXX	1	A8ES	1
	6ES7 331-7TF00-0AB0	8 AI	706-2300/400-XXX	1	A8ES	1
AO	6ES7 332-5HB01-0AB0	2 AO	706-2300/400-XXX	1	A4ES	1
	6ES7 332-5HB81-0AB0	2 AO	706-2300/400-XXX	1	A4ES	1
	6ES7 332-5HD01-0AB0	4 AO	706-2300/404-XXX	1	A4ES	1
	6ES7 332-5HF00-0AB0	8 AO	706-2300/406-XXX	1	A8ES	1
	6ES7 332-7ND02-0AB0	4 AO	706-2300/400-XXX	1	A4ES	1
	6ES7 332-8TF00-0AB0	8 AO	706-2300/400-XXX	1	A8ES	1

System Wiring for

- GEFANUC 90-30 / ALSPA 80-35
 - SCHNEIDER M340
 - SCHNEIDER QUANTUM
 - SCHNEIDER TSX 37 (Micro)
 - SCHNEIDER TSX 57 (Premium)
 - ROCKWELL COMPACT LOGIX (1769)
 - ROCKWELL CONTROL LOGIX (1756)
- contact factory

WAGO Interface Modules			
	Type	Item No.	
DI/DO	T8ES	289-611	See page 448
		704-2003	See page 471
	T8S	704-5003	See page 472
		704-5013	See page 472
	T16ES	289-614	See page 448
		704-2004	See page 473
		704-2024	See page 473
		704-2044	See page 474
		704-2054	See page 474
	T16S	704-5004	See page 476
		704-5014	See page 476
		704-5024	See page 475
		704-5034	See page 476
		704-5044	See page 475
		704-5054	See page 477
704-5064		See page 478	
704-5074		See page 477	
AI/AO	A4ES	704-8012	See page 479
	A8ES	704-8013	See page 479

WAGO Interface Cables			
	Type	Item No.	
DI/DO	WAGO-753 T8ES	706-7753/300-XXX	See www.wago.com
	WAGO-753 T16ES	706-7753/301-XXX	See www.wago.com
	WAGO-750 HE T8E8S	706-7753/302-XXX	See page 482
	TSX T16ES	706-3057/300-XXX	See page 482
	S7-300 T16E	706-2300/101-XXX	See page 484
	S7-300 2 x T16E	706-2300/100-XXX	See page 484
	S7-300 T8S	706-2300/201-XXX	See page 484
	S7-300 2 x T16S	706-2300/200-XXX	See page 484
	S7-300 T16ES	706-2300/300-XXX	See page 485
	S7-300 2 x T16ES	706-2300/301-XXX	See page 485
AI/AO	S7-300 A8E	706-2300/400-XXX	See page 485
	S7-300 A8E1	706-2300/404-XXX	See page 486
	S7-300 A8E2	706-2300/406-XXX	See page 486
	S7-300 A4SI	706-2300/500-XXX	See page 486
	S7-300 A8SI	706-2300/502-XXX	See page 486

Cable Length Overview			
Item No.	-XXX	Length	Example
706-2300/201-XXX	-100	1 m	706-2300/201-100
	-200	2 m	706-2300/201-200
	-300	3 m	706-2300/201-300

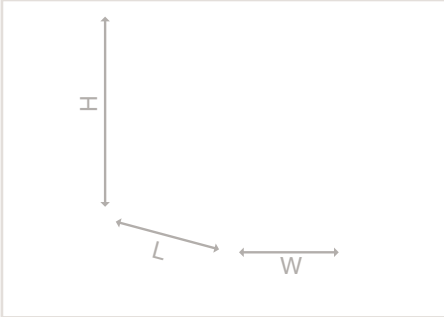
Interface Modules for System Wiring

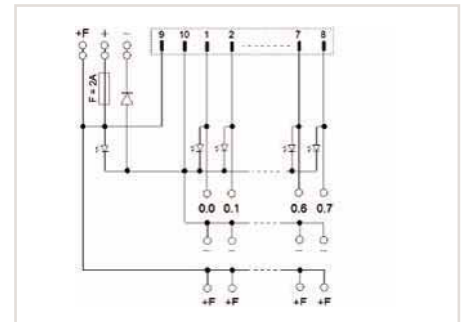
704 Series



Technical Data

Storage temperature	-40 ... +70 °C
Relative humidity	max. 85 % (no condensation)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch





Interface module, for direct wiring (3 conductors), 8 channels, with integrated status indication, 10-pole connector acc. to DIN 41651

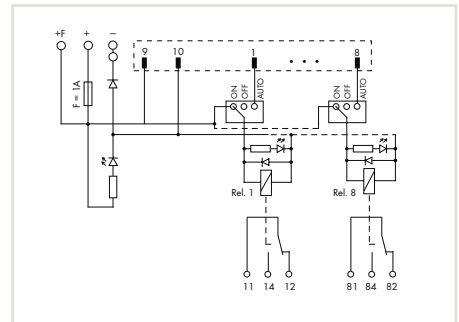
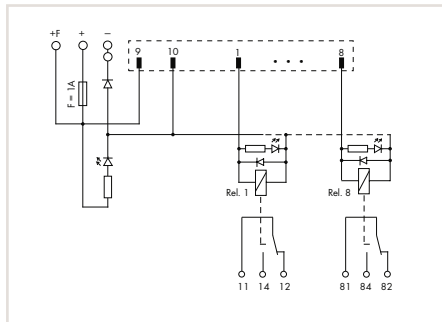
Item No.	Pack. Unit
704-2003	1

Technical Data

Operating voltage	24 VDC (±10 %)
Max. continuous current (per channel)	1 A
Max. total current	2 A
Fuse	2 A
Status indication	LED green : channel LED yellow: Power supply
Power consumption LED	5 mA
Nominal voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2
Ambient operating temperature	-20 ... +50 °C
Dimensions incl. mounting carrier (mm) W x H x D	56 x 63 x 85, height from upper-edge of DIN-rail
Connection technology	Input: 10-pole connector acc. to DIN 41651 Output: CAGE CLAMP®

Interface Modules for System Wiring

704 Series



Relay output module, with miniature switching relay for 8 channels, 1 changeover contact each (1 u) with integrated status indication, 10-pole connector acc. to DIN 41651

Item No.	Pack. Unit
704-5003	1

Relay output module, with miniature switching relay for 8 channels, 1 changeover contact each (1 u) with integrated status indication and manual operation, 10-pole connector acc. to DIN 41651

Item No.	Pack. Unit
704-5013	1

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Technical Data

Contact material	AgNi 90/10
Contact type	1 changeover contact
Operating voltage	24 VDC (±10 %)
Max. switching voltage	250 VAC / 48 VDC
Max. continuous current	5 A
Max. switching power (resistive)	1250 VA / 50 W
Status indication	LED green : Channel LED yellow: Power supply
Mechanical life	10 x 10 ⁶ switching operations
Dielectric strength contact-coil (AC, 1 min)	4 kV
Dielectric strength contact-contact	1 kV
Fuse	Supply: 1 A Relay output:
Pollution degree	2
Ambient operating temperature	-25 ... +40 °C
Dimensions incl. mounting carrier and relay (mm) W x H x D	70 x 65 x 105, height from upper-edge of DIN-rail
Connection technology	Input: 10-pole connector acc. to DIN 41651 Output: CAGE CLAMP®

Contact material	AgNi 90/10
Contact type	1 changeover contact
Operating voltage	24 VDC (±10 %)
Max. switching voltage	250 VAC / 48 VDC
Max. continuous current	5 A
Max. switching power (resistive)	1250 VA / 50 W
Status indication	LED green : channel LED yellow: Power supply
Mechanical life	10 x 10 ⁶ switching operations
Dielectric strength contact-coil (AC, 1 min)	4 kV
Dielectric strength contact-contact	1 kV
Fuse	Supply: 1 A Relay output:
Pollution degree	2
Ambient operating temperature	-25 ... +40 °C
Dimensions incl. mounting carrier and relay (mm) W x H x D	75 x 65 x 105, height from upper-edge of DIN-rail
Connection technology	Input: 10-pole connector acc. to DIN 41651 Output: CAGE CLAMP®

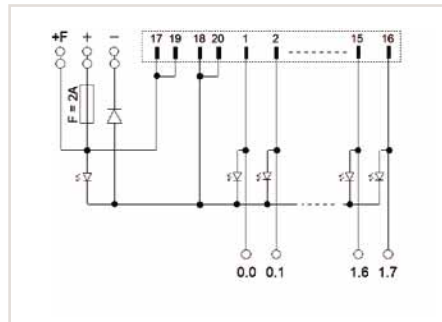
Contact material	AgNi 90/10
Contact type	1 changeover contact
Operating voltage	24 VDC (±10 %)
Max. switching voltage	250 VAC / 48 VDC
Max. continuous current	5 A
Max. switching power (resistive)	1250 VA / 50 W
Status indication	LED green : channel LED yellow: Power supply
Mechanical life	10 x 10 ⁶ switching operations
Dielectric strength contact-coil (AC, 1 min)	4 kV
Dielectric strength contact-contact	1 kV
Fuse	Supply: 1 A Relay output:
Pollution degree	2
Ambient operating temperature	-25 ... +40 °C
Dimensions incl. mounting carrier and relay (mm) W x H x D	75 x 65 x 105, height from upper-edge of DIN-rail
Connection technology	Input: 10-pole connector acc. to DIN 41651 Output: CAGE CLAMP®

Accessories (Selection)

Spare relay	Item No.	Pack. Unit
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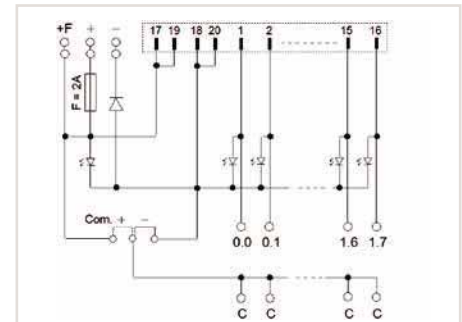
	Item No.	Pack. Unit
	857-152	1

	Item No.	Pack. Unit
	857-152	1



Interface module,
for direct wiring (1 conductor),
16 channels, with integrated status indication,
20-pole connector acc. to DIN 41651

Item No.	Pack. Unit
704-2004	1



Interface module,
for direct wiring (2 conductors),
16 channels, with integrated status indication,
20-pole connector acc. to DIN 41651

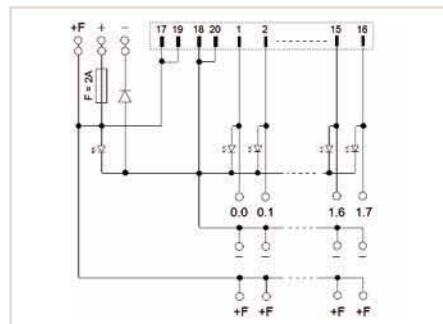
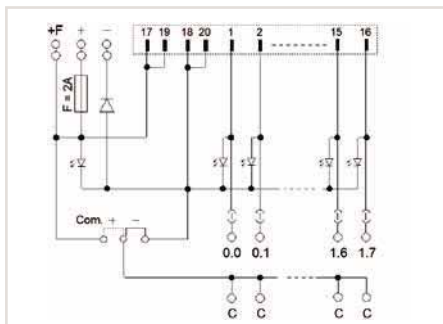
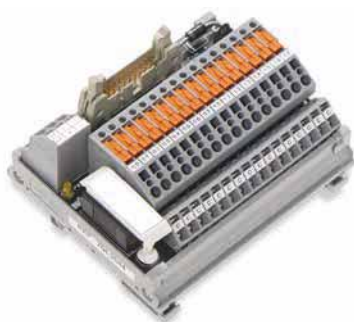
Item No.	Pack. Unit
704-2024	1

Technical Data

Operating voltage	24 VDC ($\pm 10\%$)	24 VDC ($\pm 10\%$)
Max. continuous current (per channel)	1 A	1 A
Max. total current	2 A	2 A
Fuse	2 A	2 A
Status indication	LED green : channel LED yellow: Power supply	LED green : channel LED yellow: Power supply
Power consumption LED	5 mA	5 mA
Nominal voltage	50 V	50 V
Rated surge voltage	0.8 kV	0.8 kV
Pollution degree	2	2
Ambient operating temperature	-20 ... +50 °C	-20 ... +50 °C
Dimensions incl. mounting carrier (mm) W x H x D	55 x 50 x 85, height from upper-edge of DIN-rail	85 x 50 x 85, height from upper-edge of DIN-rail
Connection technology	Input: 20-pole connector acc. to DIN 41651 Output: CAGE CLAMP®	Input: 20-pole connector acc. to DIN 41651 Output: CAGE CLAMP®

Interface Modules for System Wiring

704 Series



Interface module, for direct wiring (2 conductors), 16 channels, with integrated status indication and disconnection, 20-pole connector acc. to DIN 41651

Item No.	Pack. Unit
704-2044	1

Interface module, for direct wiring (3 conductors), 16 channels, with integrated status indication, 20-pole connector acc. to DIN 41651

Item No.	Pack. Unit
704-2054	1

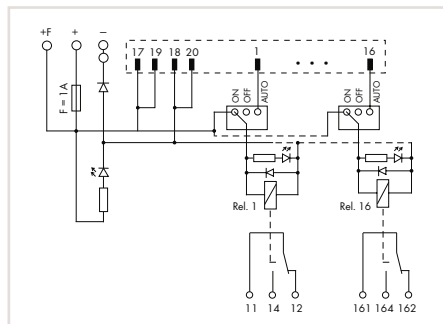
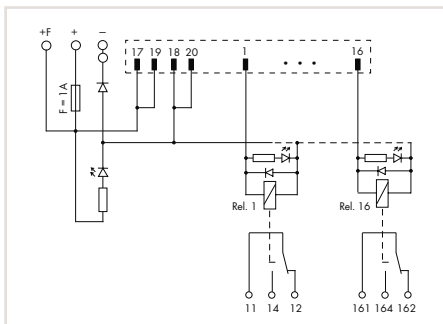
7

Technical Data

Operating voltage	24 VDC (±10 %)
Max. continuous current (per channel)	1 A
Max. total current	2 A
Fuse	2 A
Status indication	LED green : channel LED yellow: Power supply
Power consumption LED	5 mA
Nominal voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2
Ambient operating temperature	-20 ... +50 °C
Dimensions incl. mounting carrier (mm) W x H x D	99 x 50 x 85, height from upper-edge of DIN-rail
Connection technology	Input: 20-pole connector acc. to DIN 41651 Output: CAGE CLAMP®

Operating voltage	24 VDC (±10 %)
Max. continuous current (per channel)	1 A
Max. total current	2 A
Fuse	2 A
Status indication	LED green : channel LED yellow: Power supply
Power consumption LED	5 mA
Nominal voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2
Ambient operating temperature	-20 ... +50 °C
Dimensions incl. mounting carrier (mm) W x H x D	85 x 50 x 85, height from upper-edge of DIN-rail
Connection technology	Input: 20-pole connector acc. to DIN 41651 Output: CAGE CLAMP®

Operating voltage	24 VDC (±10 %)
Max. continuous current (per channel)	1 A
Max. total current	2 A
Fuse	2 A
Status indication	LED green : channel LED yellow: Power supply
Power consumption LED	5 mA
Nominal voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2
Ambient operating temperature	-20 ... +50 °C
Dimensions incl. mounting carrier (mm) W x H x D	85 x 50 x 85, height from upper-edge of DIN-rail
Connection technology	Input: 20-pole connector acc. to DIN 41651 Output: CAGE CLAMP®



Relay output module, with miniature switching relay for 16 channels, 1 changeover contact each (1 u) with integrated status indication, 20-pole connector acc. to DIN 41651

Item No.	Pack. Unit
704-5024	1

Relay output module, with miniature switching relay for 16 channels, 1 changeover contact each (1 u) with integrated status indication and manual operation, 20-pole connector acc. to DIN 41651

Item No.	Pack. Unit
704-5044	1

Technical Data

Contact material	AgNi 90/10
Contact type	1 changeover contact
Operating voltage	24 VDC (±10 %)
Max. switching voltage	250 VAC / 48 VDC
Max. continuous current	5 A
Max. switching power (resistive)	1250 VA / 50 W
Status indication	LED green : channel LED yellow: Power supply
Mechanical life	10 x 10 ⁶ switching operations
Dielectric strength contact-coil (AC, 1 min)	4 kV
Dielectric strength contact-contact	1 kV
Fuse	Supply: 1 A Relay output:
Pollution degree	2
Ambient operating temperature	-25 ... +40 °C
Dimensions incl. mounting carrier and relay (mm) W x H x D	111 x 65 x 105, height from upper-edge of DIN-rail
Connection technology	Input: 20-pole connector acc. to DIN 41651 Output: CAGE CLAMP®

Contact material	AgNi 90/10
Contact type	1 changeover contact
Operating voltage	24 VDC (±10 %)
Max. switching voltage	250 VAC / 48 VDC
Max. continuous current	5 A
Max. switching power (resistive)	1250 VA / 50 W
Status indication	LED green : channel LED yellow: Power supply
Mechanical life	10 x 10 ⁶ switching operations
Dielectric strength contact-coil (AC, 1 min)	4 kV
Dielectric strength contact-contact	1 kV
Fuse	Supply: 1 A Relay output:
Pollution degree	2
Ambient operating temperature	-25 ... +40 °C
Dimensions incl. mounting carrier and relay (mm) W x H x D	121 x 65 x 105, height from upper-edge of DIN-rail
Connection technology	Input: 20-pole connector acc. to DIN 41651 Output: CAGE CLAMP®

Accessories (Selection)

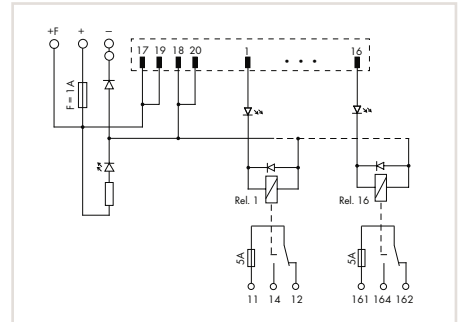
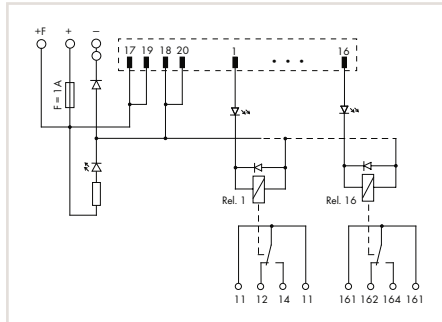
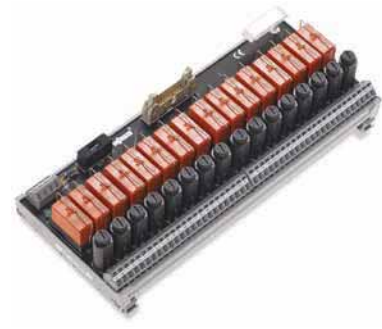
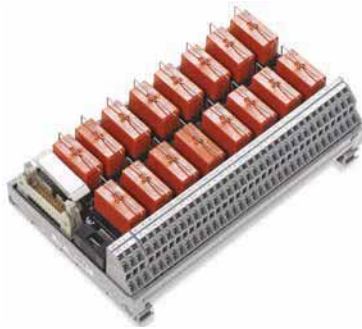
Spare relay	Item No.	Pack. Unit
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	Item No.	Pack. Unit
	857-152	1

	Item No.	Pack. Unit
	857-152	1

Interface Modules for System Wiring

704 Series



Relay output module, with miniature switching relay for 16 channels, 1 changeover contact each (1 u) with integrated status indication, 20-pole connector acc. to DIN 41651

	Item No.	Pack. Unit
with miniature switching relay	704-5004	1
without miniature switching relay	704-5014	

Relay output module, with miniature switching relay for 16 channels, 1 changeover contact each (1 u) with integrated status indication and output fuse, 20-pole connector acc. to DIN 41651

	Item No.	Pack. Unit
with miniature switching relay	704-5034	1

7

Technical Data

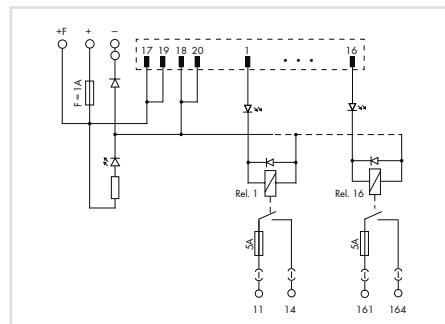
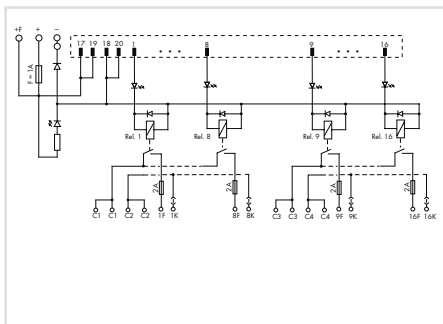
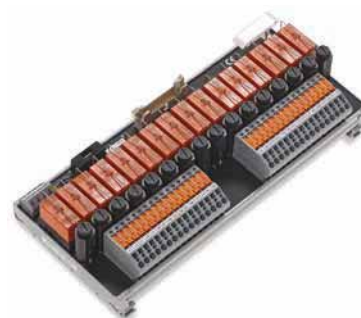
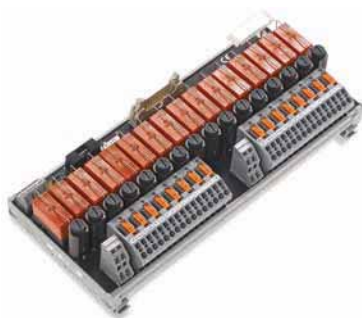
Contact material	AgNi 90/10
Contact type	1 changeover contact
Operating voltage	24 VDC (±10 %)
Max. switching voltage	250 VAC / 48 VDC
Max. continuous current	5 A
Make current	2 s 16 A
Max. switching power (resistive)	1250 VA / 50 W
Status indication	LED green : channel LED yellow: Power supply
Mechanical life	30 x 10 ⁶ switching operations
Dielectric strength contact-coil (AC, 1 min)	3 kV
Dielectric strength contact-contact	1 kV
Fuse	Supply: 1 A Relay output:
Pollution degree	2
Ambient operating temperature	-25 ... +50 °C
Dimensions incl. mounting carrier and relay (mm) W x H x D	180 x 50 x 105, height from upper-edge of DIN-rail
Connection technology	Input: 20-pole connector acc. to DIN 41651 Output: CAGE CLAMP®

Contact material	AgNi 90/10
Contact type	1 changeover contact
Operating voltage	24 VDC (±10 %)
Max. switching voltage	250 VAC / 48 VDC
Max. continuous current	5 A
Make current	2 s 16 A
Max. switching power (resistive)	1250 VA / 50 W
Status indication	LED green : channel LED yellow: Power supply
Mechanical life	30 x 10 ⁶ switching operations
Dielectric strength contact-coil (AC, 1 min)	4 kV
Dielectric strength contact-contact	1 kV
Fuse	Supply: 1 A Relay output: 5 A
Pollution degree	2
Ambient operating temperature	-25 ... +50 °C
Dimensions incl. mounting carrier and relay (mm) W x H x D	247 x 55 x 105, height from upper-edge of DIN-rail
Connection technology	Input: 20-pole connector acc. to DIN 41651 Output: CAGE CLAMP®

Accessories (Selection)

	Item No.	Pack. Unit
Spare relay	857-154	1

	Item No.	Pack. Unit
Spare relay	857-154	1



Relay output module, with miniature switching relay for 16 channels, 1 make contact each (1 a) with integrated status indication, disconnect terminal block and output fuse, 20-pole connector acc. to DIN 41651

Relay output module, with miniature switching relay for 16 channels, 1 make contact each (1 a) with integrated status indication, double disconnect terminal block and output fuse, 20-pole connector acc. to DIN 41651

Item No.	Pack. Unit
704-5054	1

Item No.	Pack. Unit
704-5074	1

Technical Data

Contact material	AgNi 90/10
Contact type	1 make contact
Operating voltage	24 VDC (±10 %)
Max. switching voltage	250 VAC / 48 VDC
Max. continuous current	2 A
Max. switching power (resistive)	500 VA / 50 W
Status indication	LED green : channel LED yellow: Power supply
Mechanical life	30 x 10 ⁶ switching operations
Dielectric strength contact-coil (AC, 1 min)	4 kV
Dielectric strength contact-contact	1 kV
Fuse	Supply: 1 A Relay output: 2 A
Pollution degree	2
Ambient operating temperature	-25 ... +50 °C
Dimensions incl. mounting carrier and relay (mm) W x H x D	240 x 55 x 105, height from upper-edge of DIN-rail
Connection technology	Input: 20-pole connector acc. to DIN 41651 Output: CAGE CLAMP®

Contact material	AgNi 90/10
Contact type	1 make contact
Operating voltage	24 VDC (±10 %)
Max. switching voltage	250 VAC / 48 VDC
Max. continuous current	5 A
Max. switching power (resistive)	1250 VA / 50 W
Status indication	LED green : channel LED yellow: Power supply
Mechanical life	30 x 10 ⁶ switching operations
Dielectric strength contact-coil (AC, 1 min)	4 kV
Dielectric strength contact-contact	1 kV
Fuse	Supply: 1 A Relay output: 5 A
Pollution degree	2
Ambient operating temperature	-25 ... +50 °C
Dimensions incl. mounting carrier and relay (mm) W x H x D	240 x 55 x 105, height from upper-edge of DIN-rail
Connection technology	Input: 20-pole connector acc. to DIN 41651 Output: CAGE CLAMP®

Accessories (Selection)

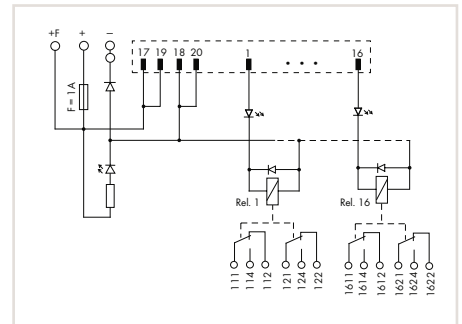
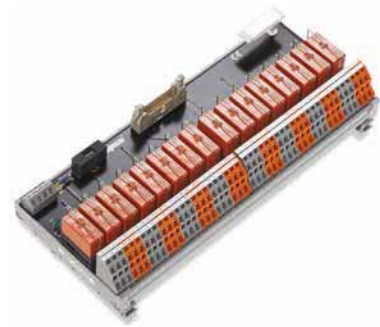
Spare relay	Item No.	Pack. Unit
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Spare relay	857-154	1
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Spare relay	857-154	1
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Interface Modules for System Wiring

704 Series



Relay output module,
with miniature switching relay for 16 channels,
2 changeover contacts each (2 u) with integrated
status indication,
20-pole connector acc. to DIN 41651

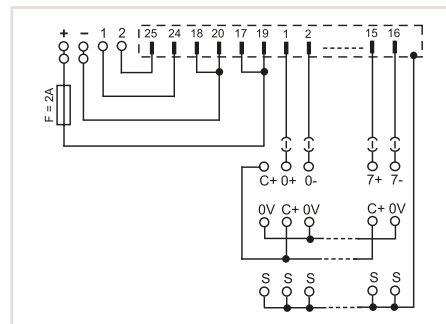
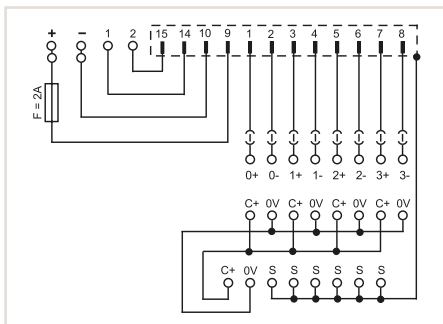
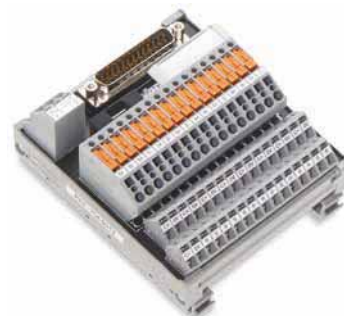
Item No.	Pack. Unit
704-5064	1

Technical Data

Contact material	AgNi 90/10
Contact type	2 changeover contacts
Operating voltage	24 VDC ($\pm 10\%$)
Max. switching voltage	250 VAC / 48 VDC
Max. continuous current	5 A
Make current	2 s 8 A
Max. switching power (resistive)	1000 VA / 50 W
Status indication	LED green : channel LED yellow: Power supply
Mechanical life	30×10^6 switching operations
Dielectric strength contact-coil (AC, 1 min)	4 kV
Dielectric strength contact-contact	1 kV
Fuse	Supply: 1 A Relay output:
Pollution degree	2
Ambient operating temperature	-25 ... +50 °C
Dimensions incl. mounting carrier and relay (mm) W x H x D	247 x 50 x 105, height from upper-edge of DIN-rail
Connection technology	Input: 20-pole connector acc. to DIN 41651 Output: CAGE CLAMP®

Accessories (Selection)

Item No.	Pack. Unit
788-156	1



Interface module, for analog sensors (2 and 4 conductors), 4 channels, with integrated disconnection, 15-pole D-sub male connector

Interface module, for analog sensors (2 and 4 conductors), 8 channels, with integrated disconnection, 25-pole D-sub male connector

Item No.	Pack. Unit
704-8012	1

Item No.	Pack. Unit
704-8013	1

Technical Data

Operating voltage	48 VDC (max.)
Max. output current (per channel)	1 A
Fuse	2 A (supply)
Nominal voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2
Ambient operating temperature	-20 ... +50 °C
Dimensions incl. mounting carrier (mm) W x H x D	66 x 50 x 105, height from upper-edge of DIN-rail
Connection technology	Input: 15-pole D-Sub male connector Output: CAGE CLAMP®

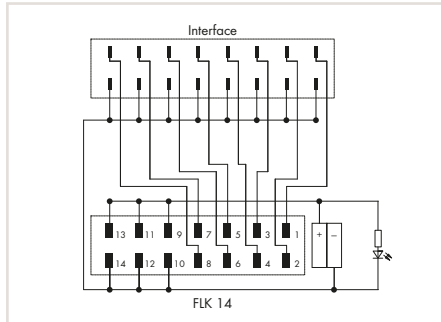
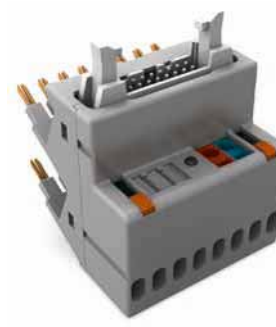
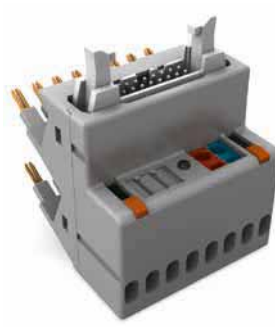
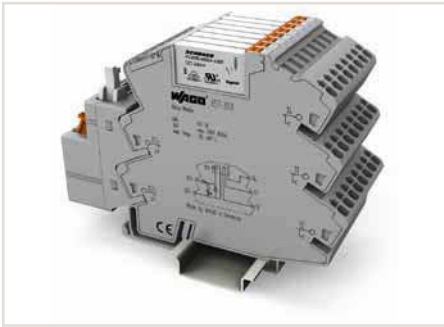
Operating voltage	48 VDC (max.)
Max. output current (per channel)	1 A
Fuse	2 A (supply)
Nominal voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2
Ambient operating temperature	-20 ... +50 °C
Dimensions incl. mounting carrier (mm) W x H x D	92 x 50 x 105, height from upper-edge of DIN-rail
Connection technology	Input: 25-pole D-Sub male connector Output: CAGE CLAMP®

Operating voltage	48 VDC (max.)
Max. output current (per channel)	1 A
Fuse	2 A (supply)
Nominal voltage	50 V
Rated surge voltage	0.8 kV
Pollution degree	2
Ambient operating temperature	-20 ... +50 °C
Dimensions incl. mounting carrier (mm) W x H x D	92 x 50 x 105, height from upper-edge of DIN-rail
Connection technology	Input: 25-pole D-Sub male connector Output: CAGE CLAMP®

Interface Modules for System Wiring

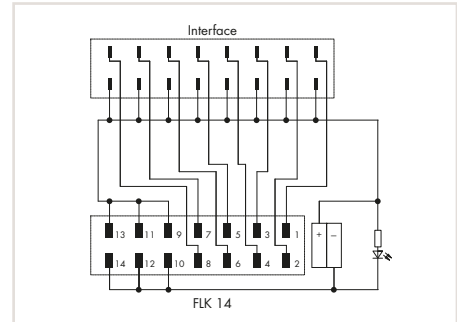
Interface Adapter

857 Series



8-channel adapter, with 14-pole connector, acc. to DIN 41651, high-side switching input

Item No.	Pack. Unit
857-981	1



8-channel adapter, with 14-pole connector, acc. to DIN 41651, high-side switching output

Item No.	Pack. Unit
857-982	1

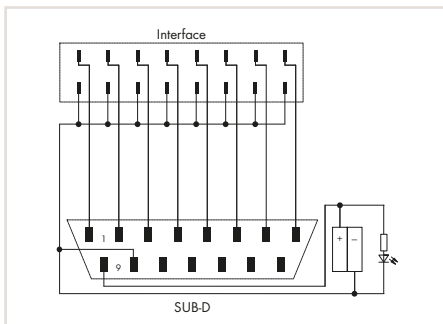
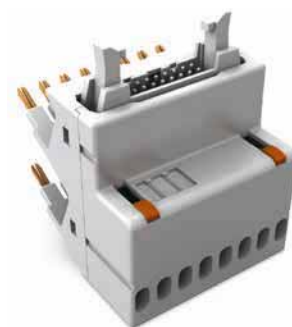
7

Technical Data

Connection type, signal level	14-pole connector acc. to DIN 41651
Performance level	3
Contact resistance	≤ 20 mΩ
Current carrying capacity	1 A
Test voltage	500 V / 50 Hz / 1 Min.
Nominal supply voltage U _N	24 VDC
Supply voltage range	16.8 ... 31.2 V
Max. total current	3 A
Status indication	LED, green
Connection type, supply	CAGE CLAMP® (231 Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch

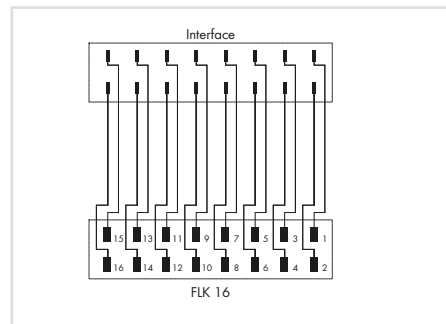
Connection type, signal level	14-pole connector acc. to DIN 41651
Performance level	3
Contact resistance	≤ 20 mΩ
Current carrying capacity	1 A
Test voltage	500 V / 50 Hz / 1 Min.
Nominal supply voltage U _N	24 VDC
Supply voltage range	16.8 ... 31.2 V
Max. total current	3 A
Status indication	LED, green
Connection type, supply	CAGE CLAMP® (231 Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch

Connection type, signal level	14-pole connector acc. to DIN 41651
Performance level	3
Contact resistance	≤ 20 mΩ
Current carrying capacity	1 A
Test voltage	500 V / 50 Hz / 1 Min.
Nominal supply voltage U _N	24 VDC
Supply voltage range	16.8 ... 31.2 V
Max. total current	3 A
Status indication	LED, green
Connection type, supply	CAGE CLAMP® (231 Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch



8-channel adapter, with D-sub male connector, high-side switching input

Item No.	Pack. Unit
857-986	1



8-channel adapter, with 16-pole connector, acc. to DIN 41651, analog

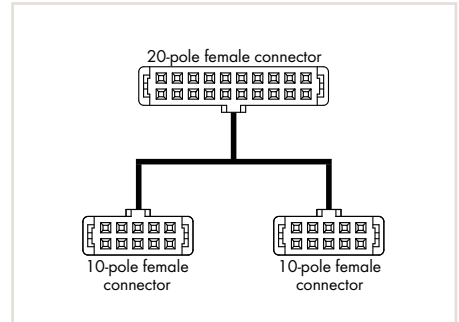
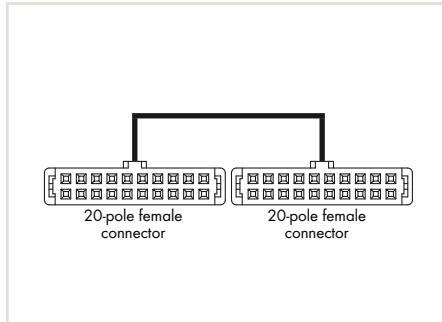
Item No.	Pack. Unit
857-980	1

Technical Data

Connection type, signal level	15-pole D-sub male connector
Performance level	2
Contact resistance	≤ 10 mΩ
Current carrying capacity	1 A
Test voltage	500 V / 50 Hz / 1 min.
Nominal supply voltage U _N	24 VDC
Supply voltage range	16.8 ... 31.2 V
Max. total current	3 A
Status indication	LED, green
Connection type, supply	CAGE CLAMP® (231 Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Overvoltage category	
Pollution degree	

Connection type, signal level	16-pole connector acc. to DIN 41651
Performance level	3
Contact resistance	≤ 20 mΩ
Current carrying capacity	1 A
Test voltage	500 V / 50 Hz / 1 min.
Nominal supply voltage U _N	
Supply voltage range	
Max. total current	
Status indication	
Connection type, supply	
Conductor range	
Strip length	
Overvoltage category	III
Pollution degree	2

WAGO Interface Cables for 289, 704 Series, in Connection with WAGO-I/O-SYSTEM 750 706 Series



WAGO Interface Cable, 20/20		
Length	Item No.	Pack. Unit
1 m	706-3057/300-100	1
2 m	706-3057/300-200	1
3 m	706-3057/300-300	1

WAGO Interface Cable, 20/2x10		
Length	Item No.	Pack. Unit
1 m	706-7753/302-100	1
2 m	706-7753/302-200	1

WAGO Interface Cables provide fast and easy connection of WAGO I/O modules equipped with a HE 10 connector (750-1400, -1402, -1500, -1501, -1502) to appropriate interface or relay modules (16-channel) featuring a 20-pole HE 10 connector.

WAGO Interface Cables provide fast and easy connection of WAGO I/O modules equipped with a HE 10 connector (750-1400, -1402, -1500, -1501, -1502) to appropriate interface or relay modules featuring a 10-pole HE 10 connector. For example, this cable connects 2 relay modules (8-channel) to a WAGO I/O module.

Technical Data

Ports	2 x 20-pole connector acc. to DIN 41651
Wire cross-section	0.14 mm ² LiYY
Color code	acc. to DIN VDE 47100
Current per channel	1 A (max.)
Operating temperature	-25 ... +70 °C
Protection type	IP20

Ports	1 x 20-pole / 2 x 10-pole connector acc. to DIN 41651
Wire cross-section	0.14 mm ² LiYY
Color code	acc. to DIN VDE 47100
Current per channel	1 A (max.)
Operating temperature	-25 ... +70 °C
Protection type	IP20

Ports	1 x 20-pole / 2 x 10-pole connector acc. to DIN 41651
Wire cross-section	0.14 mm ² LiYY
Color code	acc. to DIN VDE 47100
Current per channel	1 A (max.)
Operating temperature	-25 ... +70 °C
Protection type	IP20

7

WAGO Interface Cables for 289, 704 Series, in Connection with Siemens S7-300 706 Series



WAGO Interface Cable, 2 x T16E		
Length	Item No.	Pack. Unit
1 m	706-2300/100-100	1
2 m	706-2300/100-200	1
3 m	706-2300/100-300	1

WAGO Interface Cable, T16E		
Length	Item No.	Pack. Unit
1 m	706-2300/101-100	1
2 m	706-2300/101-200	1
3 m	706-2300/101-300	1

Technical Data

Ports	1 x Fujitsu FCN-367-J40 2 x 20-pole connector acc. to DIN 41651
Wire cross-section	0.14 mm ² LiYY
Color code	acc. to DIN VDE 47100
Operating voltage	60 V
Current per channel	1 A (max.)
Operating temperature	-20 ... +50 °C
Protection type	IP20

Ports	1 x Siemens 6ES7-392-1BJ00-0AA0 1 x 20-pole connector acc. to DIN 41651
Wire cross-section	0.14 mm ² LiYY
Color code	acc. to DIN VDE 47100
Operating voltage	60 V
Current per channel	1 A (max.)
Operating temperature	-20 ... +50 °C
Protection type	IP20

7



Similar to picture

WAGO Interface Cable, 2 x T16S		
Length	Item No.	Pack. Unit
1 m	706-2300/200-100	1
2 m	706-2300/200-200	1
3 m	706-2300/200-300	1

WAGO Interface Cable, T8S		
Length	Item No.	Pack. Unit
1 m	706-2300/201-100	1
2 m	706-2300/201-200	1
3 m	706-2300/201-300	1

Technical Data

Ports	1 x Fujitsu FCN-367-J40 2 x 20-pole connector acc. to DIN 41651
Wire cross-section	0.14 mm ² LiYY
Color code	acc. to DIN VDE 47100
Operating voltage	60 V
Current per channel	1 A (max.)
Operating temperature	-20 ... +50 °C
Protection type	IP20

Ports	1 x Siemens 6ES7-392-1BJ00-0AA0 1 x 10-pole connector acc. to DIN 41651
Wire cross-section	0.14 mm ² LiYY
Color code	acc. to DIN VDE 47100
Operating voltage	60 V
Current per channel	1 A (max.)
Operating temperature	-20 ... +50 °C
Protection type	IP20



WAGO Interface Cable,
T16ES

Length	Item No.	Pack. Unit
1 m	706-2300/300-100	1
2 m	706-2300/300-200	1
3 m	706-2300/300-300	1



WAGO Interface Cable,
2 x T16ES

Length	Item No.	Pack. Unit
1 m	706-2300/301-100	1
2 m	706-2300/301-200	1
3 m	706-2300/301-300	1

Technical Data

Ports	1 x Siemens 6ES7-392-1BJ00-0AA0 1 x 20-pole connector acc. to DIN 41651
Wire cross-section	0.14 mm ² LiYY
Color code	acc. to DIN VDE 47100
Operating voltage	60 V
Current per channel	1 A (max.)
Operating temperature	-20 ... +50 °C
Protection type	IP20

Ports	1 x Siemens 6ES7-392-1BM00-0AA0 2 x 20-pole connector acc. to DIN 41651
Wire cross-section	0.14 mm ² LiYY
Color code	acc. to DIN VDE 47100
Operating voltage	60 V
Current per channel	1 A (max.)
Operating temperature	-20 ... +50 °C
Protection type	IP20



WAGO Interface Cable,
A8E

Length	Item No.	Pack. Unit
1 m	706-2300/400-100	1
2 m	706-2300/400-200	1
3 m	706-2300/400-300	1

Technical Data

Ports	1 x Siemens 6ES7-392-1BJ00-0AA0 1 x 25-pole D-sub female connector
Wire cross-section	0.25 mm ² Li YCY
Color code	acc. to DIN VDE 47100
Operating voltage	35 V
Current per channel	2 A (max.)
Operating temperature	-20 ... +50 °C
Protection type	IP20

WAGO Interface Cables for 289, 704 Series, in connection with Siemens S7-300 706 Series



WAGO Interface Cable, A8EI1		
Length	Item No.	Pack. Unit
1 m	706-2300/404-100	1
2 m	706-2300/404-200	1
3 m	706-2300/404-300	1



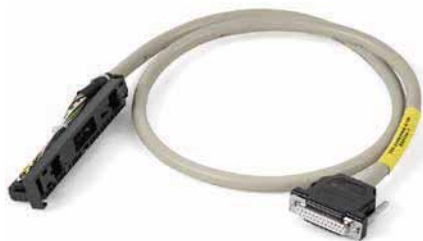
WAGO Interface Cable, A8EI2		
Length	Item No.	Pack. Unit
1 m	706-2300/406-100	1
2 m	706-2300/406-200	1
3 m	706-2300/406-300	1

Technical Data

Ports	1 x Siemens 6ES7-392-1BM00-0AA0 1 x 25-pole D-sub female connector
Wire cross-section	0.25 mm ² Li YCY
Color code	acc. to DIN VDE 47100
Operating voltage	35 V
Current per channel	2 A (max.)
Operating temperature	-20 ... +50 °C
Protection type	IP20

Ports	1 x Siemens 6ES7-392-1BM00-0AA0 1 x 25-pole D-sub female connector
Wire cross-section	0.25 mm ² Li YCY
Color code	acc. to DIN VDE 47100
Operating voltage	35 V
Current per channel	2 A (max.)
Operating temperature	-20 ... +50 °C
Protection type	IP20

7



WAGO Interface Cable, A4SI		
Length	Item No.	Pack. Unit
1 m	706-2300/500-100	1
2 m	706-2300/500-200	1
3 m	706-2300/500-300	1



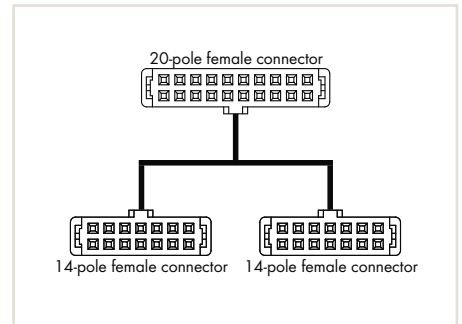
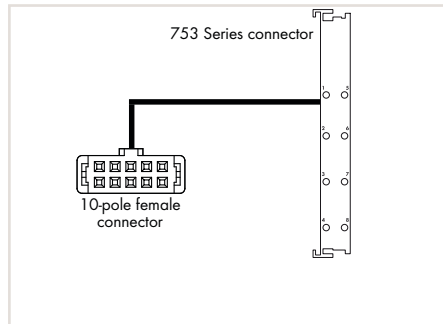
WAGO Interface Cable, A8SI		
Length	Item No.	Pack. Unit
1 m	706-2300/502-100	1
2 m	706-2300/502-200	1
3 m	706-2300/502-300	1

Technical Data

Ports	1 x Siemens 6ES7-392-1BJ00-0AA0 1 x 15-pole D-sub female connector
Wire cross-section	0.25 mm ² Li YCY
Color code	acc. to DIN VDE 47100
Operating voltage	35 V
Current per channel	2 A (max.)
Operating temperature	-20 ... +50 °C
Protection type	IP20

Ports	1 x Siemens 6ES7-392-1BM00-0AA0 1 x 25-pole D-sub female connector
Wire cross-section	0.25 mm ² Li YCY
Color code	acc. to DIN VDE 47100
Operating voltage	35 V
Current per channel	2 A (max.)
Operating temperature	-20 ... +50 °C
Protection type	IP20

WAGO Interface Cables for Interface Adapters, 857 Series 706 Series



WAGO Interface Cable, 14/14		
Length	Item No.	Pack. Unit
1 m	706-753/300-100	1
2 m	706-753/300-200	1
3 m	706-753/300-300	1

WAGO Interface Cable, 20/2x14		
Length	Item No.	Pack. Unit
1 m	706-7753/304-100	1
2 m	706-7753/304-200	1
3 m	706-7753/304-300	1

WAGO Interface Cables provide fast and easy connection of WAGO I/O modules equipped with connectors. The following WAGO I/O modules and adapters are compatible:
 750-1500 (16 DO) --> 857-981 (DO)
 750-1502 (8 DO / 8 DI) --> 857-981 (DO) and 857-982 (DI)

Suitable for system wiring when combined with Interface Adapter (Item No. 857-981 and 857-982)

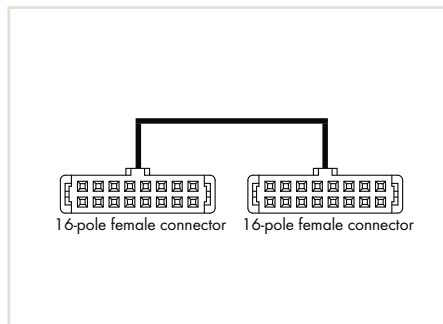
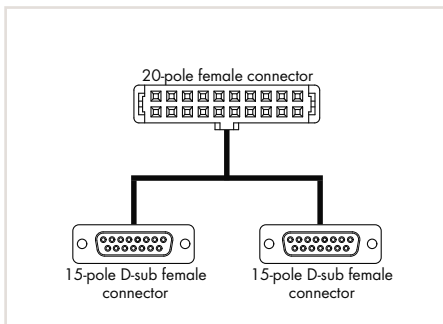
Suitable for system wiring when combined with Interface Adapters (Item No. 857-981 and 857-982)

Technical Data

Ports	2 x 14-pole connector acc. to DIN 41651
Wire cross-section	0.14 mm ² LiYY
Color code	acc. to DIN VDE 47100
Current per channel	1 A (max.)
Operating temperature	-25 ... +70 °C
Protection type	IP20

Ports	1 x 20-pole connector / 2 x 14-pole connector acc. to DIN 41651
Wire cross-section	0.14 mm ² LiYY
Color code	acc. to DIN VDE 47100
Current per channel	1 A (max.)
Operating temperature	-25 ... +70 °C
Protection type	IP20

7



WAGO Interface Cable, 20/2x15

Length	Item No.	Pack. Unit
1 m	706-7753/306-100	1
2 m	706-7753/306-200	1
3 m	706-7753/306-300	1

WAGO Interface Cable, 16/16

Length	Item No.	Pack. Unit
1 m	706-753/301-100	1
2 m	706-753/301-200	1
3 m	706-753/301-300	1

WAGO Interface Cables provide fast and easy connection of WAGO I/O modules equipped with connectors. The following WAGO I/O modules and D-sub adapters are compatible:
750-1500 (16 DO) --> 857-986 (DO)

Suitable for system wiring when combined with Interface Adapter (Item No. 857-986)

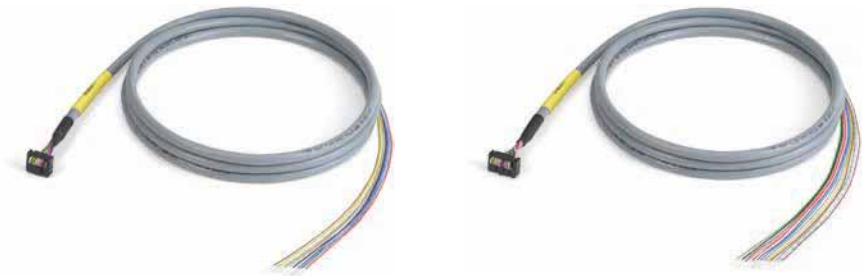
Suitable for system wiring when combined with Interface Adapter (Item No. 857-980)

Technical Data

Ports	1 x 20-pole connector acc. to DIN 41651 / 2 x 15-pole D-sub female connector acc. to DIN 41652
Wire cross-section	0.14 mm ² LiYY
Color code	acc. to DIN VDE 47100
Current per channel	1 A (max.)
Operating temperature	-25 ... +70 °C
Protection type	IP20

Ports	2 x 16-pole connector acc. to DIN 41651
Wire cross-section	0.14 mm ² LiYY
Color code	acc. to DIN VDE 47100
Current per channel	1 A (max.)
Operating temperature	-25 ... +70 °C
Protection type	IP20

WAGO Interface Cables for Interface Adapters, 857 Series 706 Series



Color coding acc. to DIN VDE 47100		HE 10 14-pole Contact number
white		1
brown		2
green		3
yellow		4
grey		5
pink		6
blue		7
red		8
black		9
violet		10

Color coding acc. to DIN VDE 47100		HE 10 16-pole Contact number
white		1
brown		2
green		3
yellow		4
grey		5
pink		6
blue		7
red		8
black		9
violet		10
grey/pink		11
red/blue		12
white/green		13
brown/green		14

WAGO Interface Cable, 10-pole/free open end		
Length	Item No.	Pack. Unit
2 m	706-100/1301-200	1

WAGO Interface Cable, 14-pole/one free cable end		
Length	Item No.	Pack. Unit
2 m	706-100/1303-200	1

Technical Data

Ports	10-pole connector HE 10/one free cable end
Wire cross-section	0.14 mm ² LiYY
Color code	acc. to DIN VDE 47100
Current per channel	1 A (max.)
Operating temperature	-25 ... +70 °C
Protection type	IP20

Ports	14-pole connector HE 10/one free cable end
Wire cross-section	0.14 mm ² LiYY
Color code	acc. to DIN VDE 47100
Current per channel	1 A (max.)
Operating temperature	-25 ... +70 °C
Protection type	IP20

7



Color coding acc. to DIN VDE 47100		HE 10 16-pole Contact number
white		1
brown		2
green		3
yellow		4
grey		5
pink		6
blue		7
red		8
black		9
violet		10
grey/pink		11
red/blue		12
white/green		13
brown/green		14
white/yellow		15
yellow/brown		16

Color coding acc. to DIN VDE 47100		HE 10 20-pole Contact number
white		1
brown		2
green		3
yellow		4
grey		5
pink		6
blue		7
red		8
black		9
violet		10
grey/pink		11
red/blue		12
white/green		13
brown/green		14
white/yellow		15
yellow/brown		16
white/grey		17
grey/brown		18
white/pink		19
pink/brown		20

**WAGO Interface Cable,
16-pole/one free open end**

Length	Item No.	Pack. Unit
2 m	706-100/1602-200	1

**WAGO Interface Cable,
20-pole/free open end**

Length	Item No.	Pack. Unit
2 m	706-100/1300-200	1

Technical Data

Ports	16-pole connector HE 10/one free cable end
Wire cross-section	0.14 mm ² LiYY
Color code	acc. to DIN VDE 47100
Current per channel	1 A (max.)
Operating temperature	-25 ... +70 °C
Protection type	IP20

Ports	20-pole connector HE 10/one free cable end
Wire cross-section	0.14 mm ² LiYY
Color code	acc. to DIN VDE 47100
Current per channel	1 A (max.)
Operating temperature	-25 ... +70 °C
Protection type	IP20



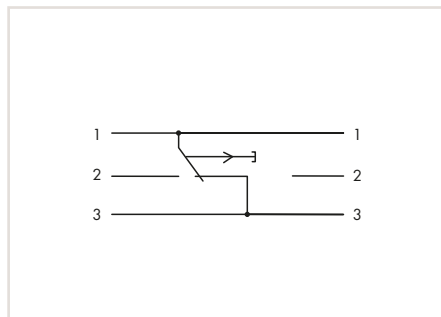
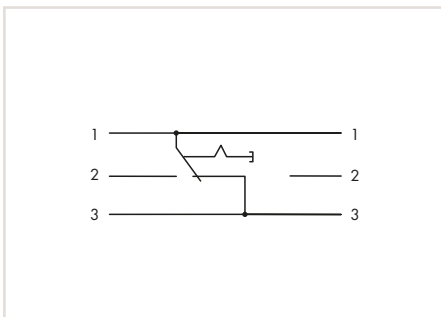
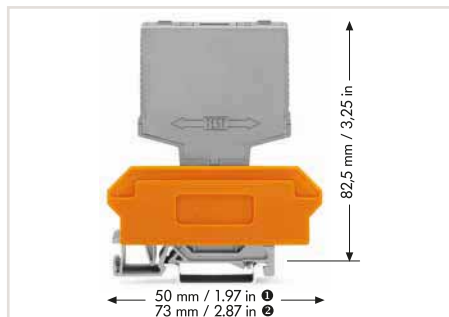
Interface Modules with Specialty Functions

Interface Modules with Specialty Functions

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Pluggable Modules – Switches

286 Series



Switching module, with changeover rocker switch, switching voltage: 250 VAC, switching current: 6 A

Item No.	Pack. Unit
286-895	1

Switching module, with momentary switch, switching voltage: 250 VAC, switching current: 6 A

Item No.	Pack. Unit
286-896	1

Technical Data

Max. switching voltage	24 VDC / 250 VAC
Switching current, resistive	AC 6 A
Switching current, inductive	AC 4 A
Electrical life	≥ 50,000 switching operations
Contact gap	≥ 3 mm
Isolation voltage	1250 V
Ambient operating temperature	-20 ... +40 °C
Standards/Approvals	Switch tested acc. to EN 61058-1

Max. switching voltage	24 VDC / 250 VAC
Switching current, resistive	AC 6 A
Switching current, inductive	AC 4 A
Electrical life	≥ 50,000 switching operations
Contact gap	≥ 3 mm
Isolation voltage	1250 V
Ambient operating temperature	-20 ... +40 °C
Standards/Approvals	Switch tested acc. to EN 61058-1

Max. switching voltage	24 VDC / 250 VAC
Switching current, resistive	AC 6 A
Switching current, inductive	AC 4 A
Electrical life	≥ 50,000 switching operations
Contact gap	≥ 3 mm
Isolation voltage	1250 V
Ambient operating temperature	-20 ... +40 °C
Standards/Approvals	Switch tested acc. to EN 61058-1

Accessories

Terminal block	Width	Item No.	Pack. Unit
with 2-conductor terminal blocks, orange separator ①	17 mm	280-619	1
with 4-conductor terminal blocks, orange separator ②	17 mm	280-609	1
with 4-conductor marker plate ②	20 mm	280-763	1
Conductor range: 0.08 ... 2.5 mm ² / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch			

Width	Item No.	Pack. Unit
17 mm	280-619	1
17 mm	280-609	1
20 mm	280-763	1

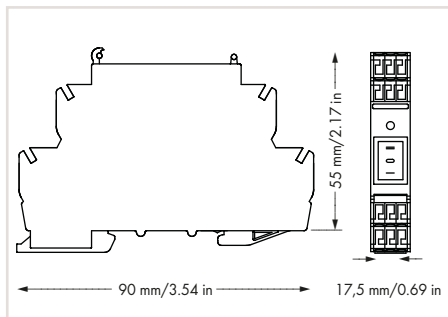
Width	Item No.	Pack. Unit
17 mm	280-619	1
17 mm	280-609	1
20 mm	280-763	1

WSB marker card	Marking	Item No.	Pack. Unit
5 cards, each containing 10 strips with 10 markers	S	209-682	
	1 ... 10	209-702	

Marking	Item No.	Pack. Unit
S	209-682	
1 ... 10	209-702	

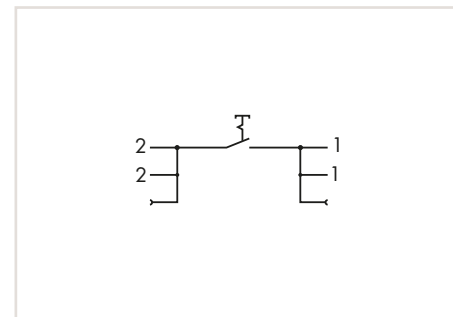
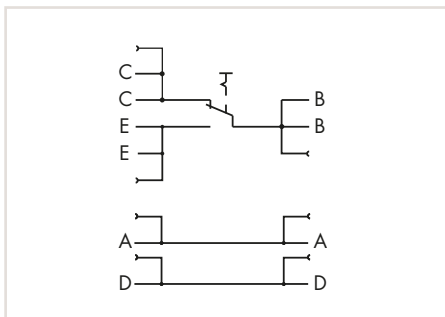
Marking	Item No.	Pack. Unit
S	209-682	
1 ... 10	209-702	

Switching Modules in a DIN-Rail-Mount Enclosure 789 Series



Technical Data

Contacts	
Contact material	Ag alloy
Operating voltage	250 VAC
Peak inrush current	100 A capacitive
Contact resistance	< 100 mΩ (12 V / DC 1 A, new condition)
Insulation resistance	> 100 MΩ (DC 500 V, new condition)
Contact gap	≥ 3 mm
General Specifications	
Dielectric strength open contact	1.25 kV _{rms}
Nominal voltage	250 V
Rated impulse voltage	4 kV
Pollution degree	2
Ambient operating temperature at U _N	-20 ... +55 °C
Storage temperature	-40 ... +80 °C
Dimensions (mm) W x H x D	17.5 x 55 x 90, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Standards/Approvals	EN 50178; EN 60664-1; EN 61058-1



Switching module,
with changeover rocker switch,
switching voltage: 250 VAC,
switching current: 10 A

Item No.	Pack. Unit
789-800	1

Switching module,
with off switch,
switching voltage: 250 VAC,
switching current: 16 A

Item No.	Pack. Unit
789-801	1

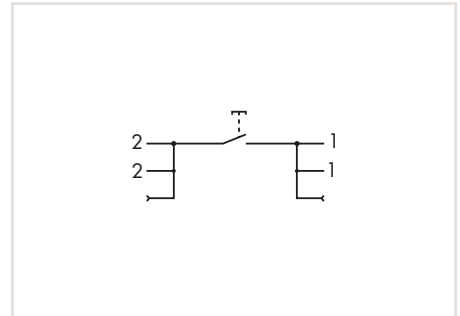
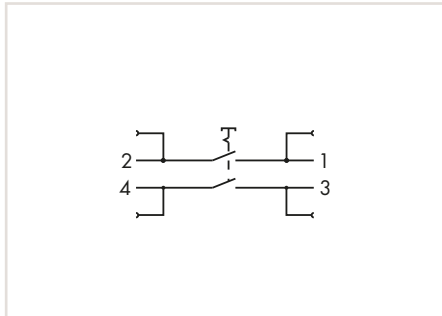
Specific Electrical Data

Max. switching power (resistive)
Mechanical life
Electrical life

10 A
1 x 10 ⁵ switching operations
1 x 10 ⁴ switching operations

16 A
5 x 10 ⁴ switching operations
1 x 10 ⁴ switching operations

Switching Modules in a DIN-Rail-Mount Enclosure 789 Series



Switching module,
with 2-pole off switch,
switching voltage: 250 VAC,
switching current: 16 A

	Item No.	Pack. Unit
	789-802	1

Switching module,
with momentary off switch,
switching voltage: 250 VAC,
switching current: 16 A

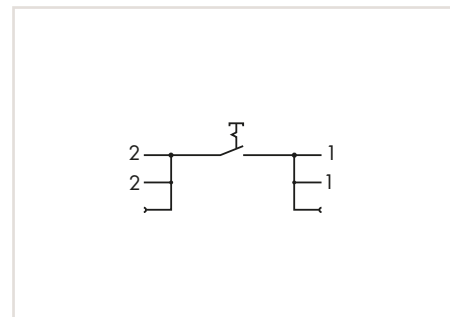
	Item No.	Pack. Unit
	789-803	1

Specific Electrical Data

Max. switching power (resistive)	16 A
Mechanical life	5 x 10 ⁴ switching operations
Electrical life	1 x 10 ⁴ switching operations

Max. switching power (resistive)	16 A
Mechanical life	5 x 10 ⁴ switching operations
Electrical life	1 x 10 ⁴ switching operations

Max. switching power (resistive)	16 A
Mechanical life	5 x 10 ⁴ switching operations
Electrical life	1 x 10 ⁴ switching operations



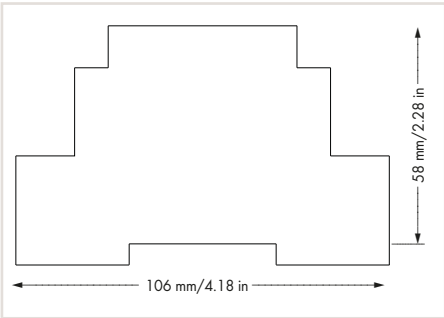
Switching module, with momentary off switch, switching voltage: 250 VAC, switching current: 16 A

	Item No.	Pack. Unit
	789-804	1

Specific Electrical Data

Max. switching power (resistive)	16 A
Mechanical life	5 x 10 ⁴ switching operations
Electrical life	1 x 10 ⁴ switching operations

Manual Control Modules in a DIN-Rail-Mount Enclosure 789 Series

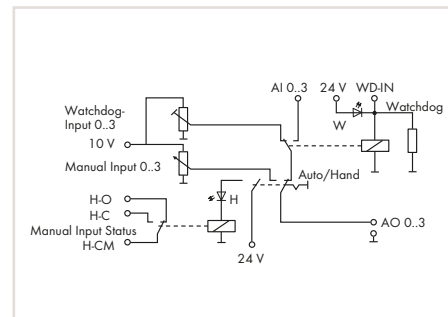
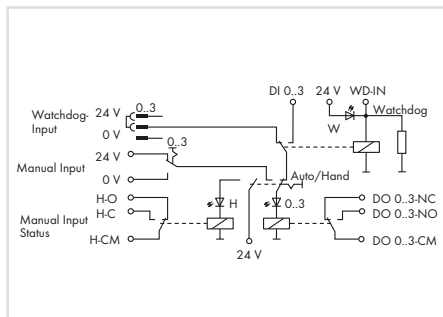


The digital manual control module 789-810 controls the different outputs 0 ... 3 and indicates their status via a green LED and the changeover contact of the power relay. Depending on both the manual/automatic switch and watchdog input, the states 0 or 1 are transmitted in an electrically isolated form to the output via a relay.

The analog manual control module 789-811 controls the different analog outputs 0 ... 3. Depending on both the manual/automatic switch and watchdog input, the voltages set between 0 ... 10 V are transmitted to the output.

Technical Data

Power supply	24 VDC ±20 %
Ambient operating temperature	0 ... +50 °C
Storage temperature	-25 ... +70 °C
Dimensions (mm) W x H x D	106 x 58 x 90, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 734 and 231 Series)
Conductor range	0.08 ... 1.5 mm ² / 28 ... 14 AWG 0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	7 mm / 0.28 inch 8 ... 9 mm / 0.31 ... 0.35 inch
Inputs	
No. 1/10	24 V Operating voltage supply
No. 2	GND ground
No. 11	WD-IN; Watchdog input; 24 V/max. 20 mA
Outputs	
No. 7	H-C; Manual operation "closed"
No. 8	H-CM; Manual operation "common"
No. 9	H-O; Manual operation "open"



Manual control module, 4 digital outputs		
	Item No.	Pack. Unit
	789-810	1

Manual control module, 4 analog outputs		
	Item No.	Pack. Unit
	789-811	1

Technical Data

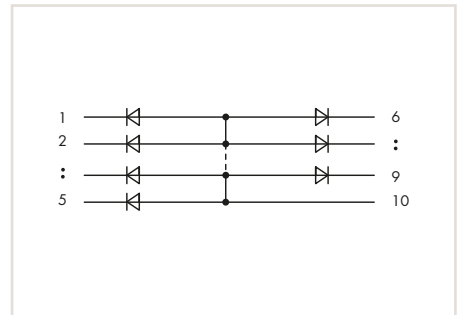
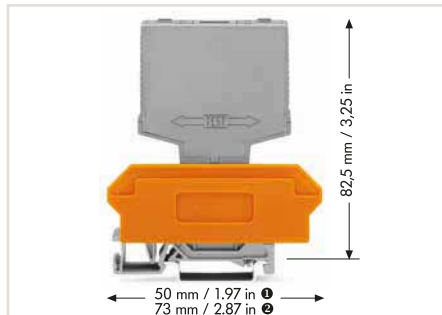
Dielectric strength input/output	4 kV
Inputs	DI-0 ... 3; input 0 ... 3; 24 V/max. 20 mA
No. 3 ... 6	
Outputs	DO-0 ... 3-NC; break contact; channel 0 ... 3
No. 12/15/18/21	
No. 13/16/19/22	DO-0 ... 3-CM; common; channel 0 ... 3
No. 14/17/20/23	DO-0 ... 3-NO; make contact; channel 0 ... 3
Max. switching voltage channel no. 12-23	250 VAC / 30 VDC
Max. switching current channel no. 12-23	8 AAC/ 8 ADC

No. 12/15/18/21	DO-0 ... 3-NC; break contact; channel 0 ... 3
No. 13/16/19/22	DO-0 ... 3-CM; common; channel 0 ... 3
No. 14/17/20/23	DO-0 ... 3-NO; make contact; channel 0 ... 3
Max. switching voltage channel no. 12-23	250 VAC / 30 VDC
Max. switching current channel no. 12-23	8 AAC/ 8 ADC

No. 12/15/18/21	AI-0 ... 3; input 0 ... 3; 0-10 V/max. 20 mA
No. 13/16/19/22	GND
No. 14/17/20/23	AO-0 ... 3; output 0 ... 3; 0-10 V/max. 20 mA
Max. switching voltage channel no. 12-23	GND
Max. switching current channel no. 12-23	

Pluggable Modules – Diode Gates

286 Series



* Max. admissible current acc. to the manufacturer's data sheet. With all diodes loaded, the continuous current must be reduced.

Component module with diode, diode 1N4007, with common anode, pluggable on rail-mount terminal block

Module Width	Diodes	Item No.	Pack. Unit
10 mm/0.394 inch	3	286-803	1
15 mm/0.591 inch	5	286-805	1
20 mm/0.787 inch	7	286-807	1
25 mm/0.984 inch	9	286-809	1

Technical Data

Operating voltage	250 VAC/DC
Peak reverse voltage, periodic	1000 V
Rectified current for each diode, resistive *	1 A
Nominal voltage	250 V
Rated impulse voltage	4 kV
Pollution degree	2
Ambient operating temperature	-25 ... +40 °C

Accessories (selection)

WSB marker card

5 cards, each containing 10 strips with 10 markers

Marking	Item No.	Pack. Unit
V	209-784	5
1 ... 10	209-702	5
+/-	209-652	5

Terminal block

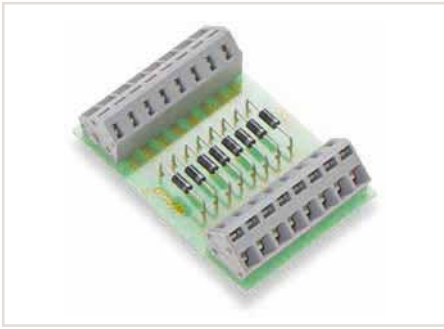
with 2-conductor terminal blocks, orange separator ①	12 mm	280-618	1
with 4-conductor terminal blocks, orange separator ②	12 mm	280-608	1
with 4-conductor marker plate ②	15 mm	280-762	1
with 2-conductor terminal blocks, orange separator ①	17 mm	280-619	1
with 4-conductor terminal blocks, orange separator ②	17 mm	280-609	1
with 4-conductor marker plate ②	20 mm	280-763	1
with 2-conductor terminal blocks, orange separator ①	22 mm	280-638	1
with 4-conductor terminal blocks, orange separator ②	22 mm	280-628	1
with 4-conductor marker plate ②	25 mm	280-764	1
with 2-conductor terminal blocks, orange separator ①	27 mm	280-639	1
with 4-conductor terminal blocks, orange separator ②	27 mm	280-629	1
with 4-conductor marker plate ②	30 mm	280-765	1

Conductor range: 0.08 ... 2.5 mm² / 28 ... 14 AWG;
Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch

Width	Item No.	Pack. Unit
12 mm	280-618	1
12 mm	280-608	1
15 mm	280-762	1
17 mm	280-619	1
17 mm	280-609	1
20 mm	280-763	1
22 mm	280-638	1
22 mm	280-628	1
25 mm	280-764	1
27 mm	280-639	1
27 mm	280-629	1
30 mm	280-765	1

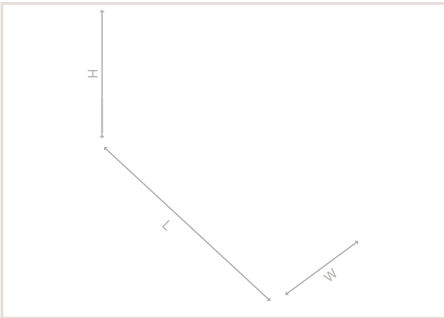
DIN-Rail-Mount Diode Gate Modules

289 Series



Technical Data

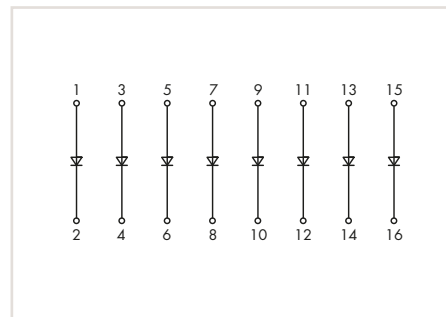
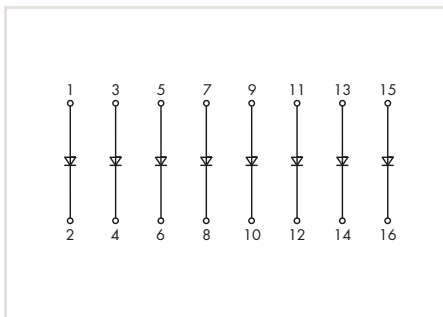
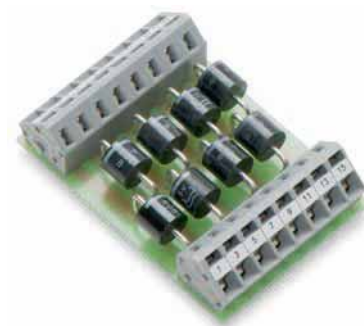
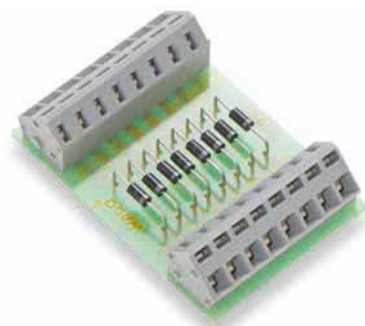
Nominal voltage	250 V
Rated impulse voltage	4 kV
Pollution degree	2
Protection type	IP00
Connection technology	CAGE CLAMP® (WAGO 236 Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch



Notice:

Live parts are likely to be touched! Contact protection must be provided by the equipment manufacturer, e.g., using a 709 Series WAGO Cover (see Accessories) or a similar cover. The installation regulations for the particular application must be observed.

* Max. admissible current acc. to the manufacturer's data sheet. With all diodes loaded, the continuous current must be reduced.



* Max. admissible current acc. to the manufacturer's data sheet. With all diodes loaded, the continuous current must be reduced.

Component module with diode, with 8 x diode 1N4007		
	Item No.	Pack. Unit
	289-101	1

Component module with diode, with 8 x diode P600B		
	Item No.	Pack. Unit
	289-103	1

Specific Technical Data

Operating voltage	250 VAC/DC
Peak reverse voltage, periodic	1000 V
Rectified current for each diode, resistive *	1 A
Rectified current per diode	50 µA
Forward voltage for each diode	1.1 V
Forward current for each diode (resistive)	1 A
Ambient operating temperature	-25 ... +40 °C
Dimensions incl. mounting carrier and universal mounting feet (mm) W x H x D	47 x 31.5 x 65.5, height from upper-edge of DIN-rail

Operating voltage	100 VAC/DC
Peak reverse voltage, periodic	100 V
Rectified current for each diode, resistive *	6 A
Rectified current per diode	5 µA
Forward voltage for each diode	1 V
Forward current for each diode (resistive)	6 A
Ambient operating temperature	-25 ... +30 °C
Dimensions incl. mounting carrier and universal mounting feet (mm) W x H x D	47 x 31.5 x 65.5, height from upper-edge of DIN-rail

Accessories

Mounting carrier, for screw-fixing or DIN-rail mounting (with snap-fit universal mounting feet), to be ordered separately	white	288-001	1
Universal mounting foot; snap-fit type; suitable for DIN 15, 32 and 35 rails		288-002	10
Cover carrier, type 1 (57.5 x 128 mm)		709-167	10
Cover, transparent, type 1, 1 m long		709-153	10

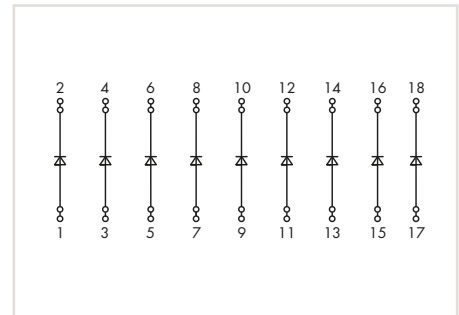
Color	Item No.	Pack. Unit
white	288-001	1
	288-002	10
	709-167	10
	709-153	10

Color	Item No.	Pack. Unit
white	288-001	1
	288-002	10
	709-167	10
	709-153	10

**TS = Tragschiene

DIN-Rail-Mount Diode Gate Modules

289 Series



* Max. admissible current acc. to the manufacturer's data sheet. With all diodes loaded, the continuous current must be reduced.

Component module with diode, with 9 x diode 1N5408

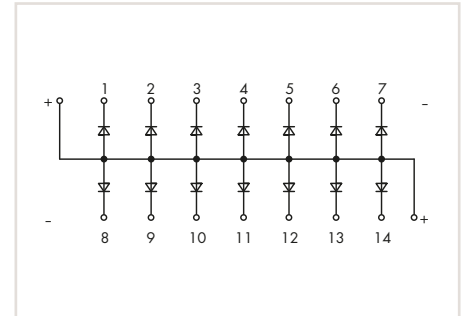
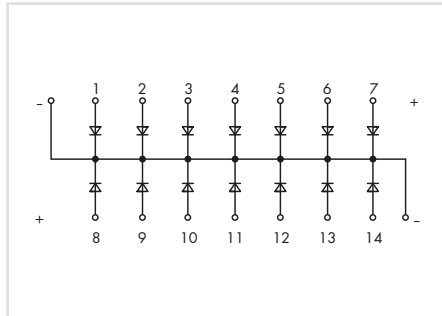
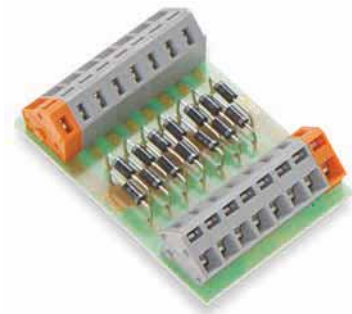
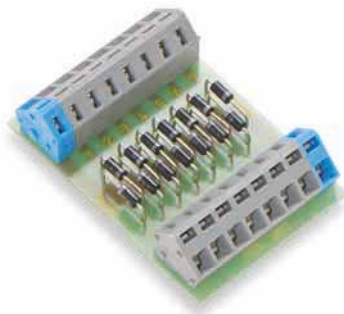
Item No.	Pack. Unit
289-105	1

Specific Technical Data

Operating voltage	250 VAC/DC
Peak reverse voltage, periodic	1000 V
Rectified current for each diode, resistive *	3 A
Rectified current per diode	10 µA
Forward voltage for each diode	1.3 V
Forward current for each diode (resistive)	3 A
Ambient operating temperature	-25 ... +40 °C
Dimensions incl. mounting carrier and universal mounting feet (mm) W x H x D	51 x 48 x 85, height from upper-edge of DIN-rail

Accessories

	Color	Item No.	Pack. Unit
Marking strip, for mounting carrier	white	709-198	1
	transparent	709-197	1
Cover carrier, type 1 (57.5 x 128 mm)		709-167	10
Cover, transparent, type 1, 1 m long		709-153	10



* Max. admissible current acc. to the manufacturer's data sheet. With all diodes loaded, the continuous current must be reduced.

Component module with diode, with 14 x diode 1N4007, with common cathode		
	Item No.	Pack. Unit
	289-111	1

Component module with diode, with 14 x diode 1N4007, with common anode		
	Item No.	Pack. Unit
	289-121	1

Specific Technical Data

Operating voltage	250 VAC/DC
Peak reverse voltage, periodic	1000 V
Rectified current for each diode, resistive *	1 A
Rectified current per diode	50 µA
Forward voltage for each diode	1.1 V
Forward current for each diode (resistive)	1 A
Ambient operating temperature	-25 ... +40 °C
Dimensions incl. mounting carrier and universal mounting feet (mm) W x H x D	45.5 x 32 x 65.5, height from upper-edge of DIN-rail

Operating voltage	250 VAC/DC
Peak reverse voltage, periodic	1000 V
Rectified current for each diode, resistive *	1 A
Rectified current per diode	50 µA
Forward voltage for each diode	1.1 V
Forward current for each diode (resistive)	1 A
Ambient operating temperature	-25 ... +40 °C
Dimensions incl. mounting carrier and universal mounting feet (mm) W x H x D	45.5 x 32 x 65.5, height from upper-edge of DIN-rail

Accessories

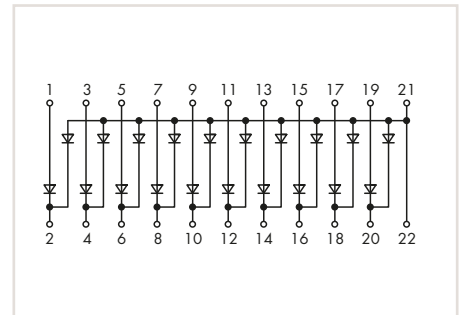
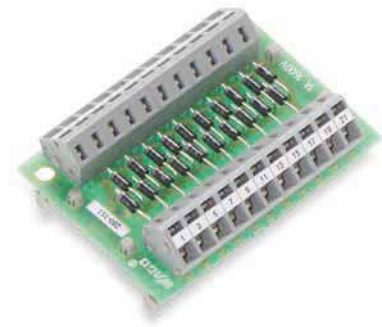
Mounting carrier, for screw-fixing or DIN-rail mounting (with snap-fit universal mounting feet), to be ordered separately		
Universal mounting foot; snap-fit type; suitable for DIN 15, 32 and 35 rails		
Cover carrier, type 1 (57.5 x 128 mm)		
Cover, transparent, type 1, 1 m long		

Color	Item No.	Pack. Unit
white	288-001	1
	288-002	10
	709-167	10
	709-153	10

Color	Item No.	Pack. Unit
white	288-001	1
	288-002	10
	709-167	10
	709-153	10

DIN-Rail-Mount Diode Gate Modules

289 Series



* Max. admissible current acc. to the manufacturer's data sheet. With all diodes loaded, the continuous current must be reduced.

Component module with diode,
with 20 x diode EM 513

Item No.	Pack. Unit
289-151	1

Technical Data

Operating voltage	250 VAC/DC
Peak reverse voltage, periodic	1600 V
Rectified current for each diode, resistive *	1 A
Rectified current per diode	< 50 μ A
Forward voltage for each diode	1.1 V
Forward current for each diode (resistive)	1 A
Ambient operating temperature	-25 ... +40 °C
Dimensions incl. mounting carrier and feet (mm) W x H x D	69 x 21 x 50, height from upper-edge of DIN-rail

Accessories

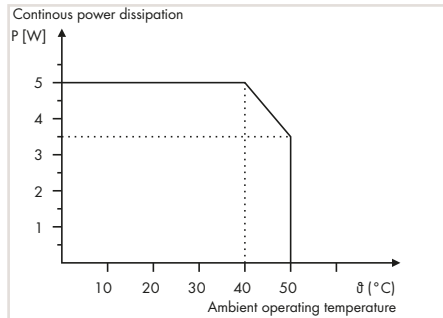
	Color	Item No.	Pack. Unit
Marking strip, for mounting carrier	white	709-198	1
	transparent	709-197	1
Cover carrier, type 1 (57.5 x 128 mm)		709-167	10
Cover, transparent, type 1, 1 m long		709-153	10

DIN-Rail-Mount Resistor Modules

289 Series



Picture of 289-128/003-000



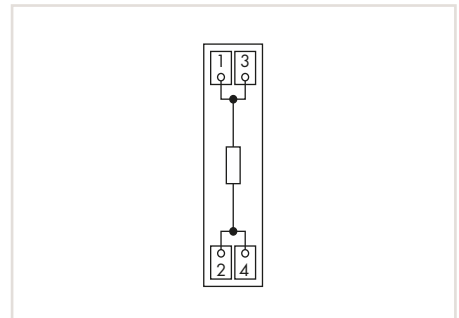
Derating

***Notice:**

Live parts are likely to be touched! Contact protection must be provided by the equipment manufacturer, e.g., using a 709 Series WAGO cover (see Accessories) or a similar cover. The installation regulations for the particular application must be observed.

Depending on operating conditions, the components' temperature may exceed the limit temperature for accessible parts.

For other resistors, please contact factory!



Component module, with resistor, with 1 9K1 resistor, 5 Watt, in mounting carrier

Resistor	Item No.	Pack. Unit
100R	289-128/005-000	1
270R	289-128/006-000	1
2K4	289-128/001-000	1
4K7	289-128/002-000	1
6K8	289-128/003-000	1
9K1	289-128	1

Technical Data

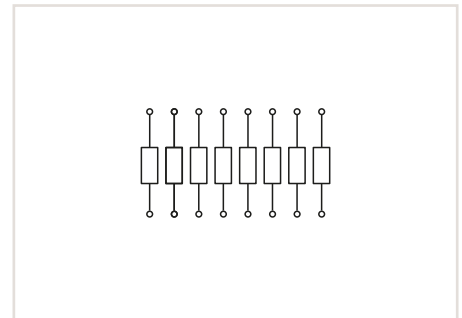
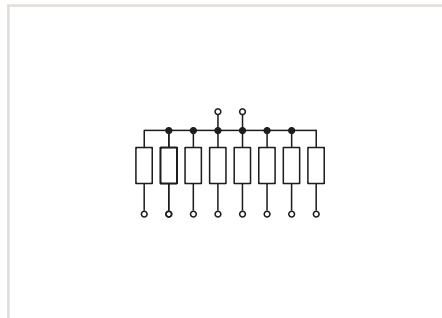
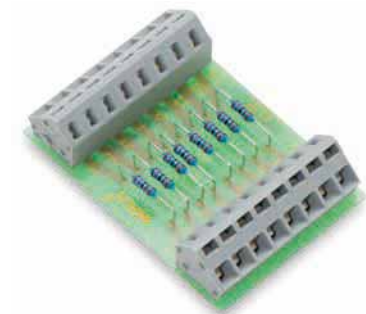
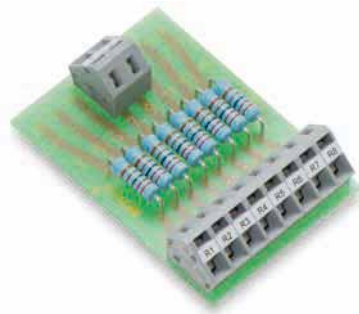
Temperature coefficient	50 ppm
Tolerance	±10 %
Power dissipation	5 W (max.)
Protection type	IP00*
Ambient operating temperature	-20 ... +50 °C (Derating must be observed)
Storage temperature	-40 ... +70 °C
Dimensions (mm) W x H x D incl. mounting carrier or feet	13 x 34 x 85, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 236 Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG (12 AWG: THHN, THWN)
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch

Accessories

	Color	Item No.	Pack. Unit
Cover carrier, type 1 (57.5 x 128 mm)		709-167	10
Cover, transparent, type 1, 1 m long		709-153	10

DIN-Rail-Mount Resistor Modules

289 Series



* Max. admissible power dissipation of a single resistor. With all resistors loaded, the max. admissible power dissipation must be reduced.

For other resistors, please contact factory!

Component module, with resistor, with 8 2K2 resistors, 1 Watt, commoned

Item No.	Pack. Unit
289-113	1

Component module, with resistor, with 8 2K7 resistors, 0.6 Watt

Item No.	Pack. Unit
289-114	1

Technical Data

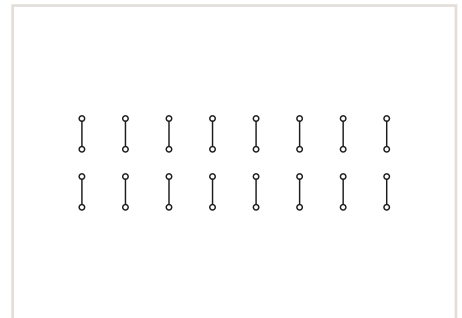
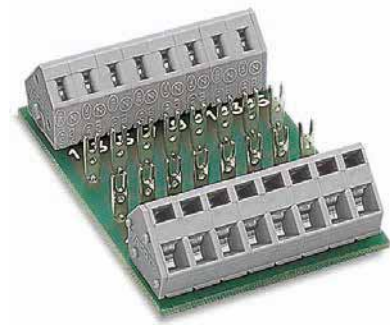
Operating voltage	40 VAC/DC
Resistor type	DIN 0414
Temperature coefficient	50 ppm
Tolerance	±1%
Power dissipation *	1 W (max.)
Ambient operating temperature	-25 ... +40 °C
Dimensions incl. mounting carrier and universal mounting feet (mm) W x H x D	45.5 x 32 x 65.5, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 236 Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch

Operating voltage	40 VAC/DC
Resistor type	DIN 0207
Temperature coefficient	50 ppm
Tolerance	±1%
Power dissipation *	0.6 W (max.)
Ambient operating temperature	-25 ... +40 °C
Dimensions incl. mounting carrier and universal mounting feet (mm) W x H x D	45.5 x 32 x 65.5, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 236 Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch

Accessories

	Color	Item No.	Pack. Unit	Color	Item No.	Pack. Unit
Mounting carrier, for screw-fixing or DIN-rail mounting (with snap-fit universal mounting feet), to be ordered separately	white	288-001	1	white	288-001	1
Universal mounting foot; snap-fit type; suitable for DIN 15, 32 and 35 rails		288-002	10		288-002	10

DIN-Rail-Mount Modules for Building Custom Circuits 289 Series



*Notice:

Live parts are likely to be touched! Contact protection must be provided by the equipment manufacturer, e.g., using a 709 Series WAGO cover (see Accessories) or a similar cover. The installation regulations for the particular application must be observed.

PCB, for building custom circuits,
with 8 assembly slots

	Item No.	Pack. Unit
	289-102	1
with solder pins	289-131	1

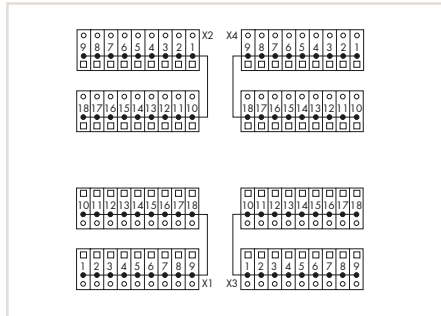
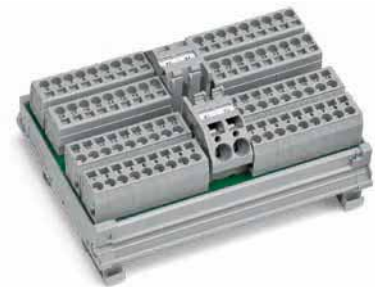
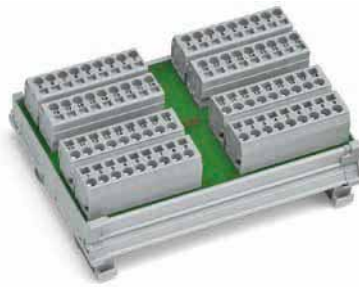
Technical Data

Operating voltage	250 VAC/DC
Nominal current	3 A
Protection type	IP00*
Ambient operating temperature	-25 ... +40 °C
Dimensions incl. mounting carrier and universal mounting feet (mm) W x H x D	45.5 x 32 x 62.5, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 236 Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch

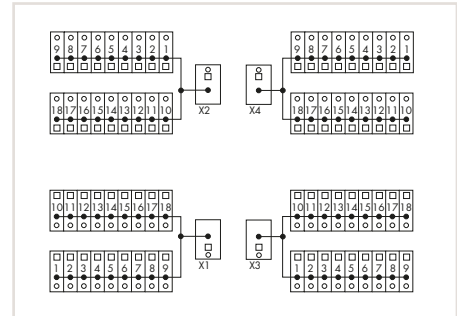
Accessories

	Item No.	Pack. Unit
Mounting carrier, for screw-fixing or DIN-rail mounting (with snap-fit universal mounting feet), to be ordered separately	288-001	1
Universal mounting foot; snap-fit type; suitable for DIN 15, 32 and 35 rails	288-002	10
Cover carrier, type 1 (57.5 x 128 mm)	709-167	10
Cover, transparent, type 1, 1 mm long	709-153	10

DIN-Rail-Mount Potential Multiplication Modules 288 Series



Potential multiplication module, 4 potentials, with each 18 connection points		
	Item No.	Pack. Unit
	288-825	1



Potential multiplication module, 4 potentials, with each 19 connection points		
	Item No.	Pack. Unit
	288-837	1

Technical Data

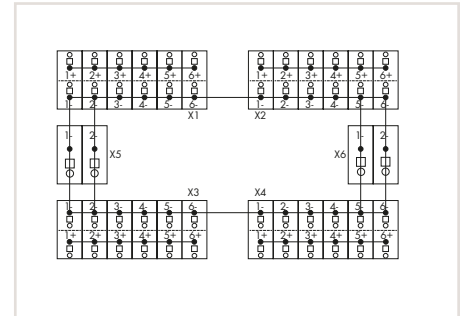
Max. operating voltage per potential	250 VAC/DC	250 VAC/DC
Max. total current per potential	12 A	32 A
Max. current per connection	12 A	12 A
Nominal voltage	250 V	250 V
Rated impulse voltage	4 kV	4 kV
Pollution degree	2	2
Ambient operating temperature	-20 ... +50 °C	-20 ... +50 °C
Storage temperature	-40 ... +80 °C	-40 ... +80 °C
Dimensions (mm) W x H x D incl. mounting carrier or feet	85 x 45 x 115, height from upper-edge of DIN-rail	85 x 45 x 115, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP® (WAGO 739 Series)	Power supply: CAGE CLAMP® (WAGO 745 Series) Connection points: CAGE CLAMP® (WAGO 739 -Series)
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG (12 AWG: THHN, THWN)	Power supply: 0.2 ... 6 mm ² / 24 ... 10 AWG Connection points: 0.08 ... 2.5 mm ² / 28 ... 12 AWG (12 AWG: THHN, THWN)
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch	Power supply: 11 ... 12 mm / 0.43 ... 0.47 inch Connection points: 8 ... 9 mm / 0.31 ... 0.35 inch

Accessories (selection)

	Item No.	Pack. Unit		Item No.	Pack. Unit
Comb-style jumper bar, 2-way	745-382	250		745-382	250



- May be used with electronic circuit breakers for 24 and 0 VDC power distribution, as a substitute for DIN-railmount terminal blocks
- 4 potential groups for 4 output circuits
- 6 connection points per potential group for plus and minus
- Features on-unit commoned minus potential with commoning option to adjacent modules via 745-682 comb-style jumper bar
- On-unit marker carrier



Potential multiplication module,
4 potentials,
with each 6 connection points

Item No.	Pack. Unit
288-867	1

Technical Data

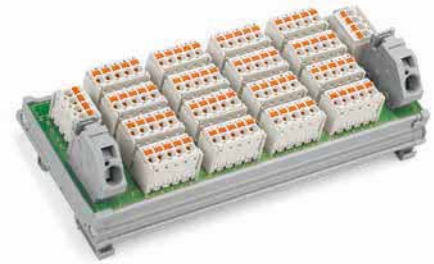
Operating voltage	24 VDC
Number of potentials	4
Max. total current per potential	10 A
Max. current per connection	10 A
Max. total current 0 V	40 A
Nominal voltage	50 V
Rated impulse voltage	0.8 kV
Pollution degree	2
Ambient operating temperature	-20 ... +50 °C
Storage temperature	-40 ... +70 °C
Dimensions incl. mounting carrier and universal mounting feet (mm) W x H x D	70 x 50 x 105, height from upper-edge of DIN-rail
Mounting type	DIN-rail mounting (EN 60715)
Connection technology	Connection points: CAGE CLAMP® (WAGO 736Series) Minus potential: CAGE CLAMP® (WAGO 745 Series)
Conductor range	Connection points: 0.08 ... 2.5 mm ² / 28 ... 12 AWG (12 AWG: THHN, THWN) Minus potential: 0.2 ... 16 mm ² / 24 ... 6 AWG
Strip length	Connection points: 5 ... 6 mm / 0.2 ... 0.24 inch Minus potential: 12 ... 13 mm / 0.47 ... 0.51 inch

Accessories (selection)

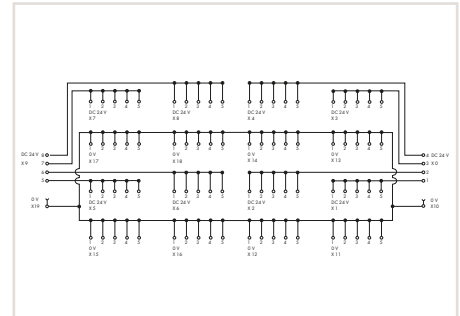
Item No.	Pack. Unit
745-682	250

Comb-style jumper bar, 2-way

DIN-Rail-Mount Potential Multiplication Modules 288 Series



- May be used with electronic circuit breakers for 24 and 0 VDC power distribution, as a substitute for DIN-rail mounted terminal blocks
 - Possible prewiring and galvanic isolation of current paths thanks to pluggable *picoMAX*® female connectors
 - Optional coding pins (2092-1610) protect against any inadvertent mixing of female connectors
 - Optional gripping plates with sliding connector release (2092-1601/002-000 or 2092-1602/002-000) provide conductor strain relief
 - Commoning option to adjacent modules via 745-682 comb-style jumper
- (Derating for commoning:
-1 A / K > 60 °C ambient temperature)



Potential multiplication module,
8 potentials,
with each 6 connection points,
with 42 ground connection points

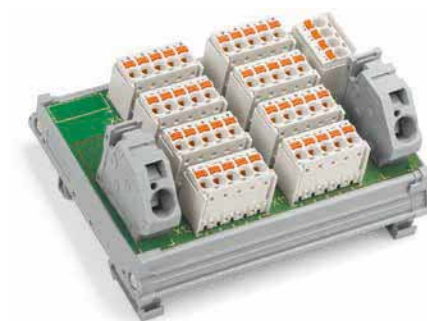
	Item No.	Pack. Unit
	288-870/000-040	1

Technical Data

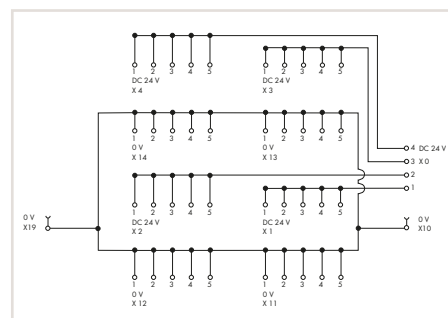
Max. operating voltage per potential	24 VDC
Number of potentials	8
Max. total current per potential	10 A
Max. current per connection	10 A
Max. total current 0 V	76 A
Ambient operating temperature	-25 ... +70 °C (no condensation)
Storage temperature	-40 ... +85 °C
Dimensions incl. mounting carrier and universal mounting feet (mm) W x H x D	85 x 49 x 154, height from upper-edge of DIN-rail
Mounting type	DIN-rail mounting (EN 60715)
Connection technology	Power supply 0 V: CAGE CLAMP® (WAGO 745 Series) Power supply 24 V, connection points: Push-in CAGE CLAMP® (<i>picoMAX</i> ® 5.0, WAGO 2092 Series)
Conductor range	Power supply 0 V: 0.2 ... 16 mm² / 24 ... 6 AWG Power supply 24 V, connection points: 0.2 ... 2.5 mm² / 24 ... 12 AWG (12 AWG: THHN, THWN)
Strip length	Power supply 0 V: 12 ... 13 mm / 0.47 ... 0.51 inch Power supply 24 V, connection points: 9 ... 10 mm / 0.35 ... 0.39 inch
Mating direction	Power supply 0 V: 45° Power supply 24 V, connection points: vertical

Accessories (selection)

	Item No.	Pack. Unit
Comb-style jumper bar, 2-way	745-682	400
Coding key carrier	2092-1610	100
Gripping plate, with sliding connector release, 3- to 4-pole	2092-1601/002-000	100
Gripping plate, with sliding connector release, 5- to 8-pole	2092-1602/002-000	100



- May be used with electronic circuit breakers for 24 and 0 VDC power distribution, as a substitute for DIN-rail mounted terminal blocks
- Possible prewiring and galvanic isolation of current paths thanks to pluggable *picoMAX*® female connectors
- Optional coding pins (2092-1610) protect against any inadvertent mixing of female connectors
- Optional gripping plates with sliding connector release (2092-1601/002-000 or 2092-1602/002-000) provide conductor strain relief
- Commoning option to adjacent modules via 745-682 comb-style jumper



Potential multiplication module,
4 potentials,
with each 6 connection points,
with 22 ground connection points

	Item No.	Pack. Unit
	288-870/000-030	1

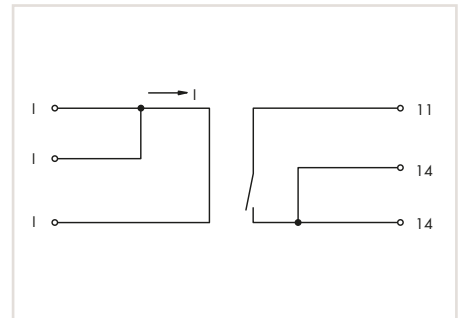
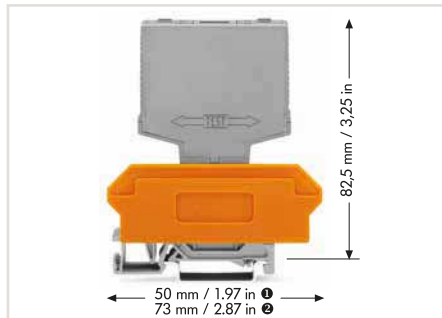
Technical Data

Max. operating voltage per potential	24 VDC
Number of potentials	4
Max. total current per potential	10 A
Max. current per connection	10 A
Max. total current 0 V	40 A
Ambient operating temperature	-25 ... +70 °C (no condensation)
Storage temperature	-40 ... +85 °C
Dimensions incl. mounting carrier and universal mounting feet (mm) W x H x D	85 x 49 x 100, height from upper-edge of DIN-rail
Mounting type	DIN-rail mounting (EN 60715)
Connection technology	Power supply 0 V: CAGE CLAMP® (WAGO 745 Series) Power supply 24 V, connection points: Push-in CAGE CLAMP® (<i>picoMAX</i> ® 5.0, WAGO 2092 Series)
Conductor range	Power supply 0 V: 0.2 ... 16 mm ² / 24 ... 6 AWG Power supply 24 V, connection points: 0.2 ... 2.5 mm ² / 24 ... 12 AWG (12 AWG: THHN, THWN)
Strip length	Power supply 0 V: 12 ... 13 mm / 0.47 ... 0.51 inch Power supply 24 V, connection points: 9 ... 10 mm / 0.35 ... 0.39 inch
Mating direction	Power supply 0 V: 45° Power supply 24 V, connection points: vertical

Accessories (selection)

	Item No.	Pack. Unit
Comb-style jumper bar, 2-way	745-682	400
Coding key carrier	2092-1610	100
Gripping plate, with sliding connector release, 3- to 4-pole	2092-1601/002-000	100
Gripping plate, with sliding connector release, 5- to 8-pole	2092-1602/002-000	100

Pluggable Modules – Current Flow Monitoring 286 Series



DC current flow monitoring module,
0.4 ... 3.5 A,
1 make contact (1 a),
module width 15 mm / 0.591 inch

	Item No.	Pack. Unit
	286-662	1

Technical Data

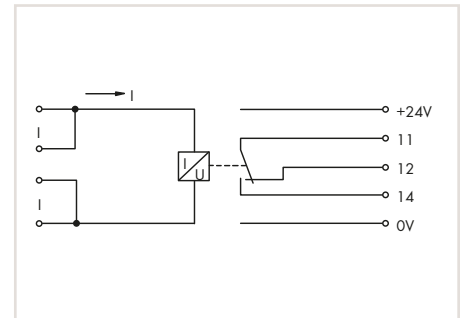
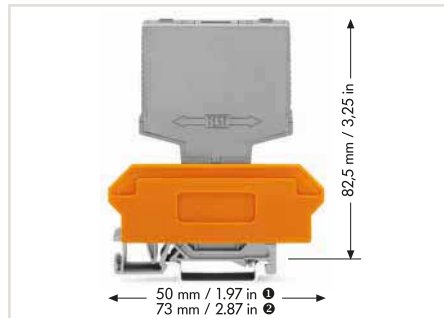
Current monitoring range	0.4 ... 3.5 A DC (-20 ... +40 °C); 0.4 ... 3 A DC (-20 ... +60 °C); 0.4 ... 2 A DC (-20 ... +70 °C)
Voltage range	12 ... 28 VDC
Nominal power consumption min./max.	45 mW / 630 mW
Turn on / off point	0.35 A / 0.07 A
Voltage drop	24 ... 210 mV
Reaction time	0.5 ms
Output	1 make contact
Switching current	0.5 A
Switching voltage	200 VDC
Switching power	10 W (max.)
Dielectric strength input/output	1.5 kV
Ambient operating temperature	-25 ... +40 °C

Accessories (selection)

WSB marker card	Marking	Item No.	Pack. Unit
5 cards, each containing 10 strips with 10 markers	U	209-789	5
	1 ... 10	209-702	5
	Lin, Lin, Lout, 11, 14, 14, Lin, Lin, Lout	249-654	5
	Lin, Lin, Lout, Lout, 24V, 11, 12, 14, 0V	209-997	5

Terminal block	Width	Item No.	Pack. Unit
with 2-conductor terminal blocks, orange separator ①	17 mm	280-619	1
with 4-conductor terminal blocks, orange separator ②	17 mm	280-609	1
with 4-conductor marker plate ②	20 mm	280-763	1

Conductor range: 0.08 ... 2.5 mm² / 28 ... 14 AWG;
Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch



AC current flow monitoring module,
1 ... 10 A adjustable,
1 changeover contact (1 u),
module width 25 mm / 0.984 inch

	Item No.	Pack. Unit
	286-665	1

Technical Data

Current monitoring range	1 ... 10 A AC
Nominal power consumption min./max.	23 mVA / 8.5 VA
Switching threshold	min. 1 A (adjustable)
Voltage drop	23 ... 850 mV
Reaction time	200 ms
Output	1 changeover contact
Operating voltage	24 VDC
Power consumption	28 mA
Switching current	5 A
Switching voltage	250 VAC
Switching power	1250 VA
Dielectric strength input/output	1.5 kV
Nominal voltage	250 V
Rated impulse voltage	2.5 kV
Pollution degree	2
Ambient operating temperature	-25 ... +40 °C
Storage temperature	-40 ... +70 °C
Indication	Current < Switching threshold LED red, relay switched

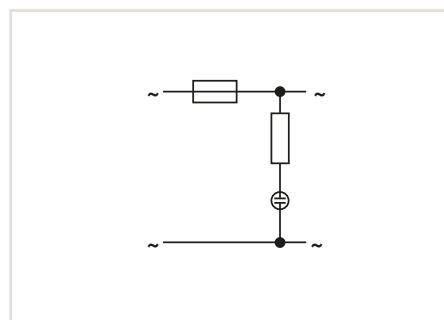
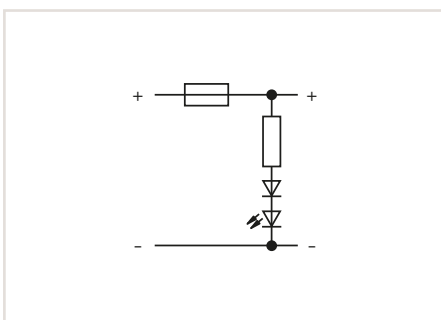
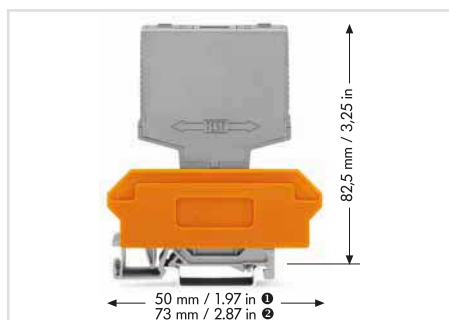
Accessories (selection)

WSB marker card	Marking	Item No.	Pack. Unit
5 cards, each containing 10 strips with 10 markers	U	209-789	5
	1 ... 10	209-702	5
	Lin, Lin, Lout, 11, 14, 14, Lin, Lin, Lout	249-654	5
	Lin, Lin, Lout, Lout, 24V, 11, 12, 14, 0V	209-997	5

Terminal block	Width	Item No.	Pack. Unit
with 2-conductor terminal blocks, orange separator ①	27 mm	280-639	1
with 4-conductor terminal blocks, orange separator ②	27 mm	280-629	1
with 4-conductor marker plate ③	30 mm	280-765	1

Conductor range: 0.08 ... 2.5 mm² / 28 ... 14 AWG;
Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch

Pluggable Modules – Fuses 286 Series



Component module, with fuse, for 5 x 20 mm microfuse, nominal voltage: 24 VAC/DC, green LED

Item No.	Pack. Unit
286-890	1

Component module, with fuse, for 5 x 20 mm microfuse, nominal voltage: 230 VAC/DC, green Neon lamp

Item No.	Pack. Unit
286-891	1

Technical Data

Operating voltage	24 VAC/DC
Max.use capacity	6.3 A
Operating power	100 mW
Nominal voltage	250 V
Rated impulse voltage	4 kV
Pollution degree	3
Ambient operating temperature	-25 ... +40 °C
Leakage current in case of blown fuse	5 mA
Test voltage	2.5 kV

Operating voltage	230 VAC/DC
Max.use capacity	6.3 A
Operating power	100 mW
Nominal voltage	250 V
Rated impulse voltage	4 kV
Pollution degree	3
Ambient operating temperature	-25 ... +40 °C
Leakage current in case of blown fuse	0.5 mA
Test voltage	2.5 kV

Accessories (selection)

WSB marker card
5 cards, each containing 10 strips with 10 markers

Marking	Item No.	Pack. Unit
F1 ... F10	209-787	5
1 ... 10	209-702	5
+/-	209-652	5

Marking	Item No.	Pack. Unit
F1 ... F10	209-787	5
1 ... 10	209-702	5
+/-	209-652	5

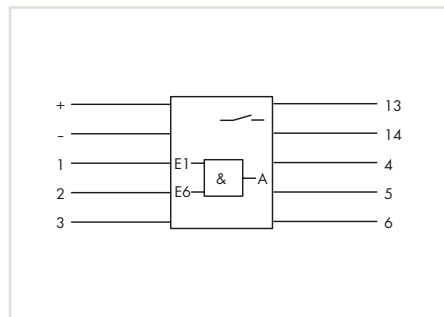
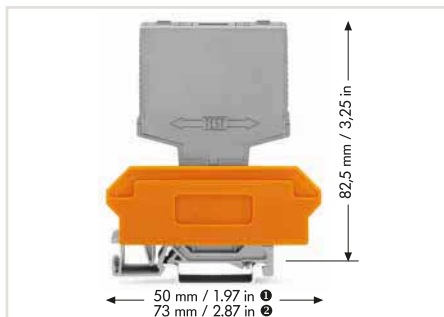
Terminal block
with 2-conductor terminal blocks, orange separator ①
with 4-conductor terminal blocks, orange separator ②
with 4-conductor marker plate ②
Conductor range: 0.08 ... 2.5 mm ² / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch

Width	Item No.	Pack. Unit
12 mm	280-618	1
12 mm	280-608	1
15 mm	280-762	1

Width	Item No.	Pack. Unit
12 mm	280-618	1
12 mm	280-608	1
15 mm	280-762	1

Pluggable Modules – AND Gate

286 Series



AND gate module, with 6 inputs

Item No.	Pack. Unit
286-826	1

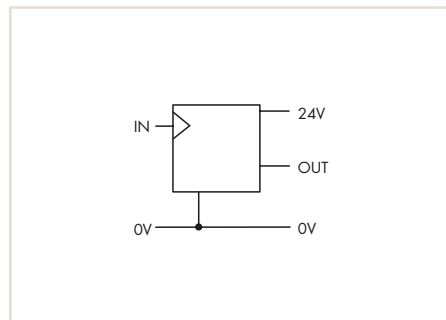
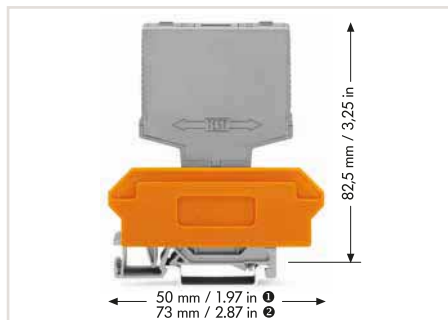
Technical Data

Operating voltage	24 VDC
Operating voltage range	24 ... 27.5 VDC
Gate voltage - input	24 VDC
Power consumption at U_N	max. 34.6 mA
Relay output	1 make contact
Max. switching voltage	250 VAC/120 VDC
Max. continuous current	3 A
Max. switching power (resistive)	120 W / 750 VA
Dielectric strength input/output	2.5 kV
Nominal voltage	250 V
Rated impulse voltage	4 kV
Pollution degree	2
Ambient operating temperature	-25 ... +40 °C

Accessories (selection)

Accessories	Marking	Item No.	Pack. Unit
WSB marker card 5 cards, each containing 10 strips with 10 markers	D	209-783	5
	1 ... 10	209-702	5
	+, -, 1, 2, 3, 13, 14, 4, 5, 6	249-608	5
Terminal block with 2-conductor terminal blocks, orange separator ① with 4-conductor terminal blocks, orange separator ② with 4-conductor marker plate ② Conductor range: 0.08 ... 2.5 mm ² / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch	Width	Item No.	Pack. Unit
	27 mm	280-639	1
	27 mm	280-629	1
	30 mm	280-765	1

Pluggable Modules – Flip-Flop 286 Series



Flip-Flop module,
nominal voltage: 24 VDC

Item No.	Pack. Unit
286-825	1

Technical Data

Input voltage	24 VDC ($\pm 10\%$)
Input current	0.25 mA
Input voltage ("high" signal)	> 7 V
Input voltage ("low" signal)	< 3 V
Pulse frequency	5 kHz
Min. output voltage	$U_B - 1.5 V$
Max. output current	0.5 A
Operating voltage	24 VDC
Operating voltage range	20 ... 30 VDC
Power consumption	7.5 mA
Reverse voltage transistor	80 V
Test voltage input/output	2.5 kV
Nominal voltage	250 V
Rated impulse voltage	4 kV
Pollution degree	2
Ambient operating temperature	0 ... +55 °C

Accessories (selection)


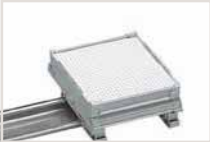
Terminal block	Width	Item No.	Pack. Unit
with 2-conductor terminal blocks, orange separator ①	17 mm	280-619	1
with 4-conductor terminal blocks, orange separator ②	17 mm	280-609	1
with 4-conductor marker plate ②	20 mm	280-763	1

Conductor range: 0.08 ... 2.5 mm² / 28 ... 14 AWG;
Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch



Empty Housings

Empty Housings

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	Empty Component Plug Housings 280, 286, 786 Series Empty Component Plug Housings for Building Custom Circuits 532 Empty Component Plug Housings for Building Custom Circuits 534
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	Empty Housings, 789 Series DIN-Rail Mount Enclosures 538 Accessories, 789 Series 539
	Mounting Carriers, 209, 210, 288 Series Mounting Carriers, for DIN-Rail Mount PCBs 540 Mounting Carriers and Feet, for DIN-Rail Mount PCBs 542

Modular Empty Housings Overview and Configuration 2857 Series

Pluggable *picoMAX*®
Connectors

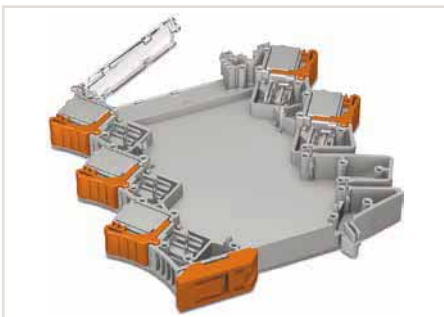
Fixed *picoMAX*® connections

Connector-free slot

All are freely selectable for
each connection point



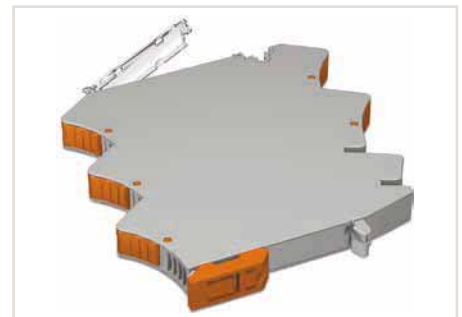
9 Supplied as a pre-assembled unit



1. Pre-assembled unit










2. Insert and solder the PCB.



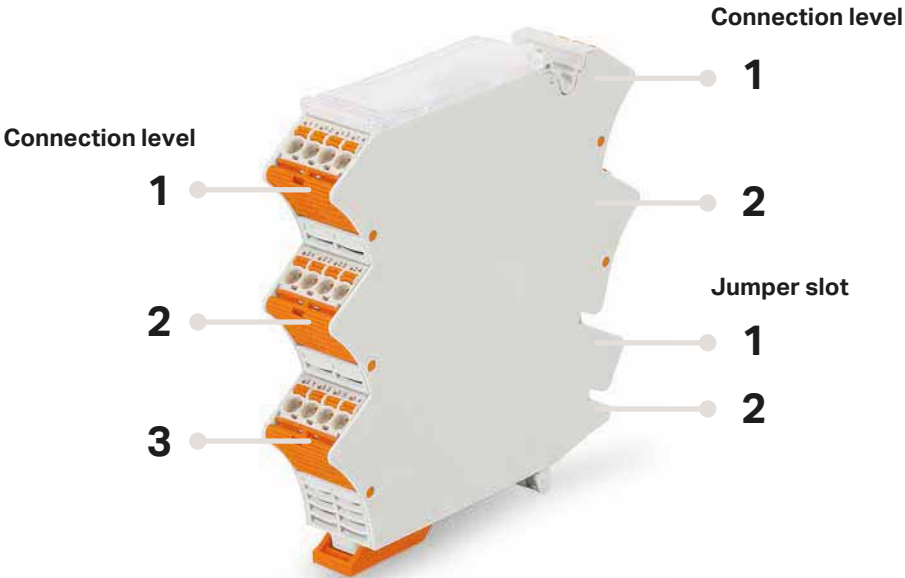
3. Snap on the side wall.

Housing configuration:

Housing width: 12.5 mm/0.49 in.	 2857-101	 2857-102	 2857-103	-
Housing width: 22.5 mm/0.89 in.	 2857-121	 2857-122	 2857-123	 2857-124
Connection levels	2-2	3-2	3-3	1-1
Jumper slots	2-2	0-2	0-0	2-2

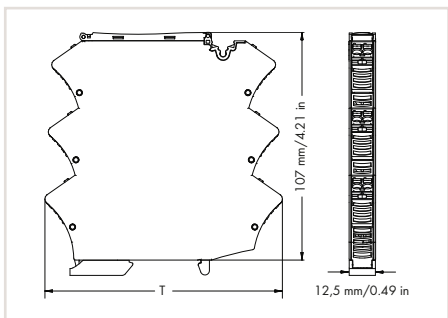
Mixed configuration (fixed/removable/empty slot) upon request.

Example of connection level and jumper slot assignment:



Connection levels	3-2
Jumper slots	0-2

Modular Empty Housings 2857 Series



Features:


- *picoMAX*® female connectors, with coding keys, 4-pole
- Pre-assembled unit
- Flexible conductor termination
- Customizable connection levels
- Various marking options available
- Sealable, transparent cover
- Commoning via 859-402 jumpers


Technical data, *picoMAX*® 5.0 female connector with conductor termination

Technical Data	
Pin spacing	5 mm / 0.197 inch
Ratings per	IEC/EN 60664-1
Rated voltage (III / 3)	250 V
Rated impulse voltage (III / 3)	4 kV
Rated voltage (III / 2)	320 V
Rated impulse voltage (III / 2)	4 kV
Rated voltage (II / 2)	630 V
Rated impulse voltage (II / 2)	4 kV
Rated current	16 A
Approvals per	UL 1059
Rated voltage UL (Use Group B)	300 V
Rated current UL (Use Group B)	15 A
Rated voltage UL (Use Group D)	300 V
Rated current UL (Use Group D)	10 A
Approvals per	CSA
Rated voltage CSA (Use Group B)	300 V
Rated current CSA (Use Group B)	15 A
Rated voltage CSA (Use Group D)	300 V
Rated current CSA (Use Group D)	10 A
Conductor data	
Connection technology	Push-in CAGE CLAMP®
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Conductor cross-sections	
Solid conductor	0.2 ... 2.5 mm ² / 24 ... 12 AWG
Fine-stranded conductor	0.2 ... 2.5 mm ² / 24 ... 12 AWG
Fine-stranded conductor with insulated ferrule	0.2 ... 1.5 mm ² / 24 ... 16 AWG
Fine-stranded conductor with uninsulated ferrule	0.2 ... 2.5 mm ² / 24 ... 14 AWG
Material data	
Clamping spring material	Chrome nickel spring steel (CrNi)
Contact material	Electrolytic copper (Ecu)
Contact plating	Tin-plated
Insulating material	Polyphthalamide (PPA GF)
Flammability class per UL 94	V0

Technical data, empty housing

Material data	
Housing material	PC
Flammability rating	V0
Environmental requirements	
Ambient operating temperature	-40 ... +70 °C
Storage temperature	-40 ... +85 °C

 Additional technical data, see *picoMAX*® catalog.

 Marking strips, WMB and WMB Inline, see page 608



Modular empty housing, for DIN-35 rail, housing width: 12.5 mm		
Description	Item No.	Pack. Unit
2-2 connection levels, 2-2 jumper slots	2857-101	10
3-2 connection levels, 0-2 jumper slots	2857-102	10
3-3 connection levels, 0-0 jumper slots	2857-103	10
Technical Data, Empty Housing		
Dimensions (mm) W x H x D	12.5 x 107 x 108(2857-101) 12.5 x 107 x 110 (2857-102) 12.5 x 107 x 112(2857-103) Height from upper-edge of DIN-rail	
Power loss	2 W	

Accessories

Description	Item No.	Pack. Unit
Coding pin carrier	2092-1610	1
Jumpers	859-402	1

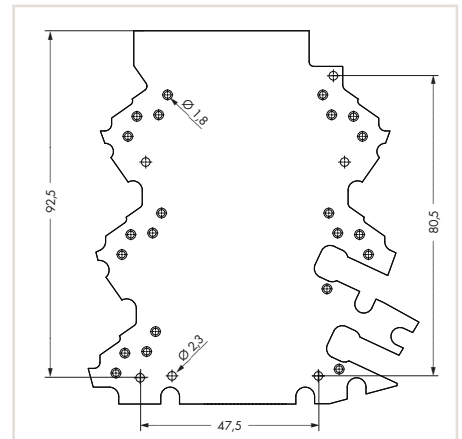
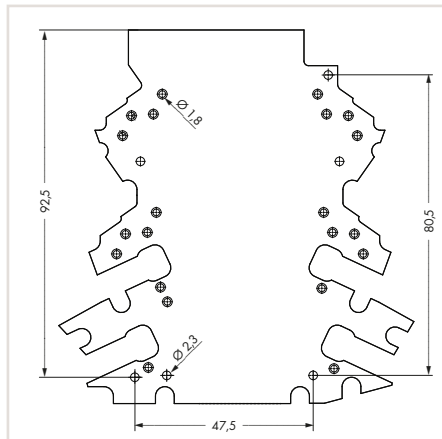
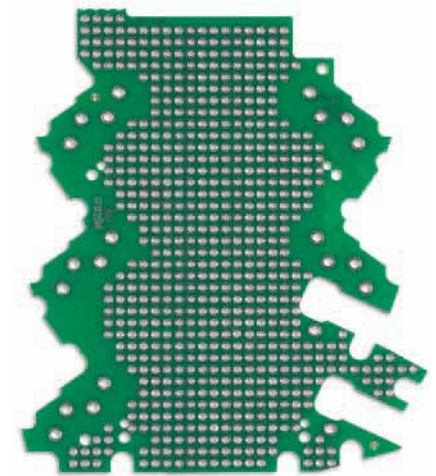
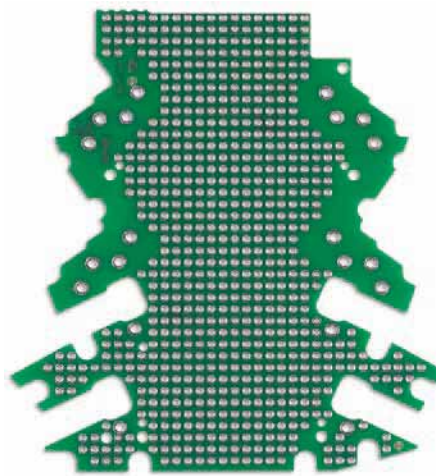


Modular empty housing, for DIN-35 rail, housing width: 22.5 mm		
Description	Item No.	Pack. Unit
2-2 connection levels, 2-2 jumper slots	2857-121	5
3-2 connection levels, 0-2 jumper slots	2857-122	5
3-3 connection levels, 0-0 jumper slots	2857-123	5
1-1 connection levels, 2-2 jumper slots	2857-124	5
Technical Data, Empty Housing		
Dimensions (mm) W x H x D	22.5 x 107 x 108 (2857-121) 22.5 x 107 x 110 (2857-122) 22.5 x 107 x 112 (2857-123) 22.5 x 107 x 105 (2857-124) Height from upper-edge of DIN-rail	
Power loss	3 W	

Accessories

Description	Item No.	Pack. Unit
Coding pin carrier	2092-1610	1
Jumpers	859-402	1

Stripboards, for Modular Empty Housings 2857 Series



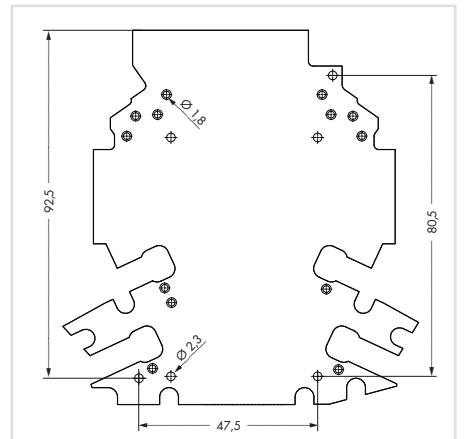
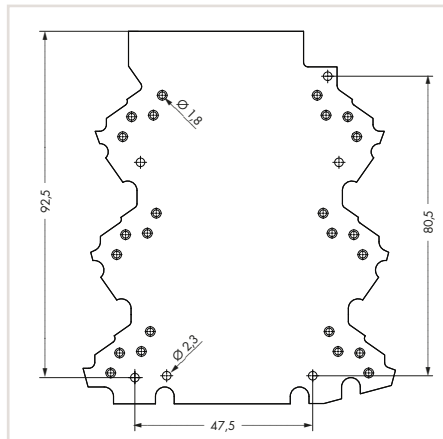
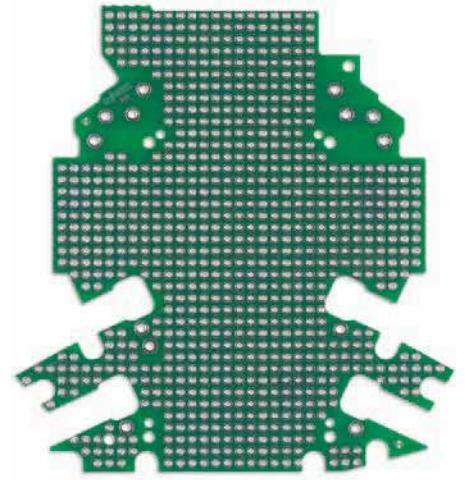
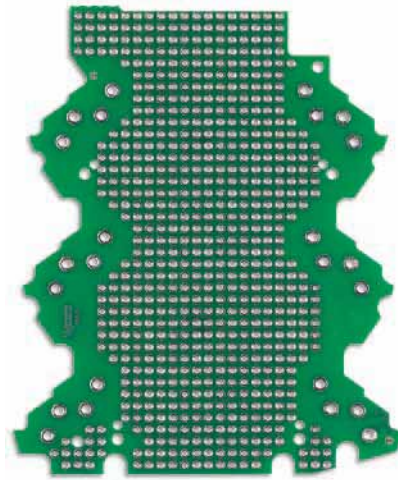
Stripboard, for installation in 12.5 mm and 22.5 mm empty housings		
	Item No.	Pack. Unit
	2857-191/3140-000	5 (5 x 1)

Stripboard, for installation in 12.5 mm and 22.5 mm empty housings		
	Item No.	Pack. Unit
	2857-192/3140-000	5 (5 x 1)

Technical Data

Connection levels	2-2
Jumper slots	2-2

Connection levels	3-2
Jumper slots	0-2



Stripboard, for installation in 12.5 mm and 22.5 mm empty housings		
	Item No.	Pack. Unit
	2857-193/3140-000	5 (5 x 1)

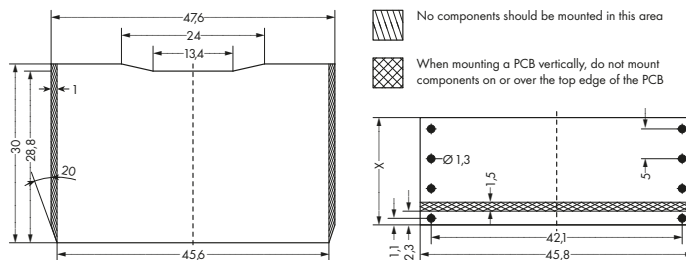
Stripboard, for installation in 12.5 mm and 22.5 mm empty housings		
	Item No.	Pack. Unit
	2857-194/3140-000	5 (5 x 1)

Technical Data

Connection levels	3-3
Jumper slots	0-0

1-1	
2-2	

Empty Component Plug Housings for Building Custom Circuits Series 286/786



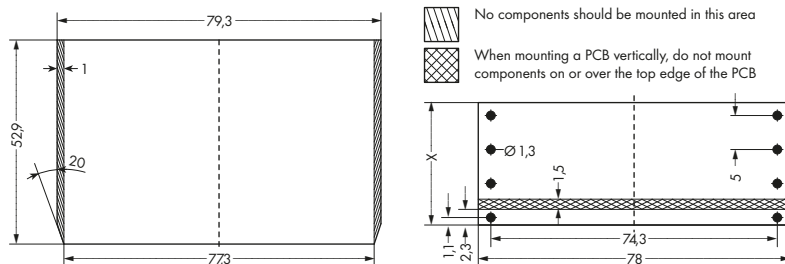
Module width	10	15	20	25
Component height	4.2	9.2	14.2	19.2
X = total height of PCB	8	13	18	23

286 Series, empty component plug

Type	Pole	Width	Item No.	Pack. Unit
9	4	10 mm wide / 0.394 inch	286-110	1
10	6	15 mm / 0.591 inch	286-111	1
11	8	20 mm / 0.787 inch	286-112	1
12	10	25 mm / 0.984 inch	286-113	1

Technical Data

Rated voltage	250 V
Rated impulse voltage	4 KV
Pollution degree	3
Per contact	6 A
Module height	82.5 mm/3.25 inch (from upper-edge of DIN-35 rail)



Module width	15	20	25
Component height	9.2	14.2	19.2
X = total height of PCB	13	18	23

786 Series, empty component plug

Type	Pole	Width	Item No.	Pack. Unit
14	6	15 mm / 0.591 inch	786-101	1
15	8	20 mm / 0.787 inch	786-102	1
16	10	25 mm / 0.984 inch	786-103	1

Technical Data

Rated voltage	250 V
Rated impulse voltage	4 KV
Pollution degree	3
Per contact	6 A
Module height	82.5 mm/3.25 inch (from upper-edge of DIN-35 rail)

Accessories

Unlocking pliers for component plug housing



	Item No.	Pack. Unit
	210-492	1

WSB Quick marking system,
10 strips with 10 markers,
white, with black printing



Marking	Item No.	Pack. Unit
plain	209-501	5 cards
1 ... 10 (10 x)	209-702	5 cards

Terminal block

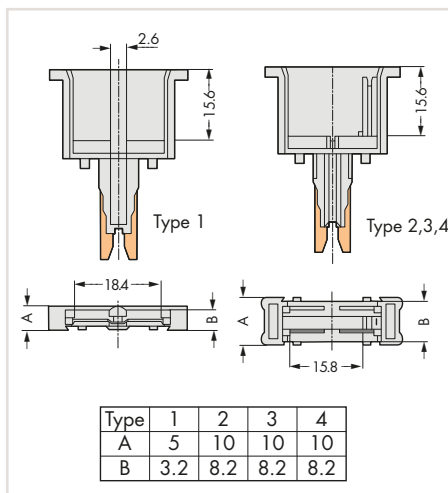


Description	Width	Item No.	Pack. Unit
Terminal block			
With 2-conductor terminals, orange separator plate	12 mm	280-618	1
With 4-conductor terminals, orange separator plate	12 mm	280-608	1
Terminal block			
With 2-conductor terminals, orange separator plate	17 mm	280-619	1
With 4-conductor terminals, orange separator plate	17 mm	280-609	1
Terminal block			
With 2-conductor terminals, orange separator plate	22 mm	280-638	1
With 4-conductor terminals, orange separator plate	22 mm	280-628	1
Terminal block			
With 2-conductor terminals, orange separator plate	27 mm	280-639	1
With 4-conductor terminals, orange separator plate	27 mm	280-629	1

Conductor range: 0.08 ... 2.5 mm² / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch

Empty Component Plug Housings for Building Custom Circuits

280 Series



Empty component plug			
	Description	Item No.	Pack. Unit
Type 1	2-pole, 5 mm / 0.197 in. wide; inside dimensions of plug W/H/D 3.2/15/15 mm (0.126/0.591/0.591 inch)	280-801	100
Type 2	2-pole, 10 mm / 0.394 in. wide; inside dimensions of plug W/H/D 8.2/15/15 mm (0.323/0.591/0.591 inch)	280-802	50
Type 3	4-pole, 10 mm / 0.394 in. wide; inside dimensions of plug W/H/D 8.2/15/15 mm (0.323/0.591/0.591 inch)	280-804	50

Technical Data

Rated voltage	250 V
Rated impulse voltage	4 kV
Pollution degree	3
Per contact	6 A (max.)



2-conductor carrier terminal block



3-conductor carrier terminal block



4-conductor carrier terminal block

Carrier terminal block			
	Description	Item No.	Pack. Unit
2-conductor carrier terminal block	gray, terminal block width 5 mm / 0.197 inch, marking on both sides	280-616	100
2-conductor carrier terminal block	gray, terminal block width 5 mm / 0.197 inch, marking in center position	280-916	100
3-conductor carrier terminal block	gray, terminal block width 5 mm / 0.197 inch	280-610	100
4-conductor carrier terminal block	gray, terminal block width 5 mm / 0.197 inch, marking on both sides	280-606	100
4-conductor carrier terminal block	gray, terminal block width 5 mm / 0.197 inch, marking in center position	280-686	100

Technical Data

Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 in



Empty component plug

	Description	Item No.	Pack. Unit
Type 4	2-pole, 10 mm / 0.394 in. wide; inside dimensions of plug W/H/D 8.2/15/15 mm (0.323/0.591/0.591 inch)	280-803	50

Technical Data	
Rated voltage	250 V
Rated impulse voltage	4 KV
Pollution degree	3
Per contact	6 A (max.)

Type 2,3,4

Type	1	2	3	4
A	5	10	10	10
B	3.2	8.2	8.2	8.2



2-conductor through terminal block



3-conductor through terminal block



4-conductor through terminal block



2-conductor through terminal block

Through terminal block

	Description	Item No.	Pack. Unit
2-conductor, front-entry wiring	gray, terminal block width 5 mm / 0.197 inch, marking on both sides	280-601	100
2-conductor, front-entry wiring	gray, terminal block width 5 mm / 0.197 inch, marking in center position	280-901	100
3-conductor front-entry wiring	gray, terminal block width 5 mm / 0.197 inch	280-681	100

Technical Data	
Conductor range	0.08 ... 2.5 mm ² / 28 ... 12 AWG (12 AWG: THHN, THWN)
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

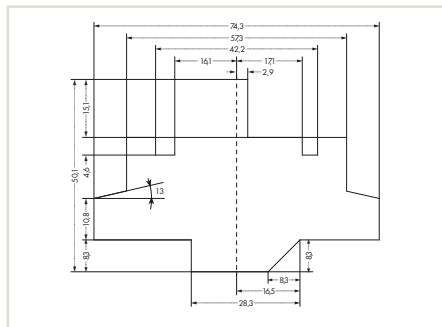
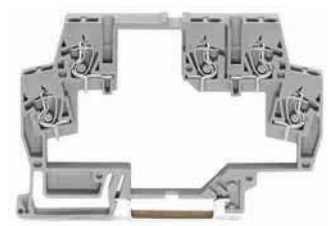
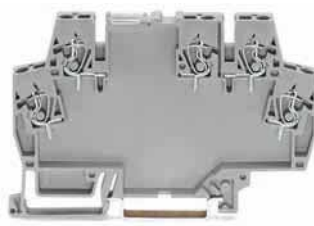
Through terminal block

	Description	Item No.	Pack. Unit
4-conductor, front-entry wiring	gray, terminal block width 5 mm / 0.197 inch, marking on both sides	280-621	100
4-conductor, front-entry wiring	gray, terminal block width 5 mm / 0.197 inch, marking in center position	280-833	100
2-conductor, front-entry wiring	gray, terminal block width 5 mm / 0.197 inch	280-101	100

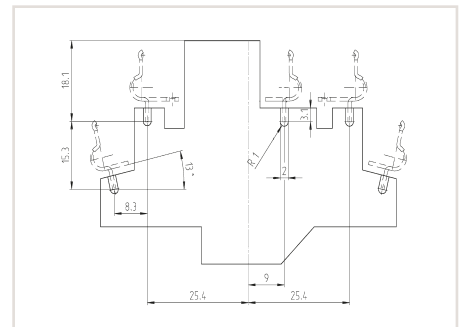
Technical Data	
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch

Empty Electronic Terminal Block Housings

859 Series



PCB dimensions



PCB dimensions

Modular housing for mounting electronic components in a rail-mounted terminal block

	Item No.	Pack. Unit
	859-110	1

Frame to enlarge the terminal block width

	Item No.	Pack. Unit
	859-501	1

Technical Data

Housing material	PA 66
Flammability rating	V0 (UL94)
Color	gray
Protection type	IP20
Ambient operating temperature	-25 ... + 70 °C
Storage temperature	-40 ... +85 °C
Width	6 mm
Mounting position	any
Dimensions (W x H x D)	6 x 56 x 91 mm, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch

Housing material	PA 66
Flammability rating	V0 (UL94)
Color	gray
Protection type	IP20
Ambient operating temperature	-25 ... + 70 °C
Storage temperature	-40 ... +85 °C
Width	8 mm
Mounting position	any
Dimensions (W x H x D)	6 x 56 x 91 mm, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch

Accessories

859 Series

End and intermediate plate



Description	Item No.	Pack. Unit
End and intermediate plate, 1 mm/ 0.039 in. thick, gray	859-525	100 (4x25)

Comb-style jumper bar, light gray, insulated, 18 A



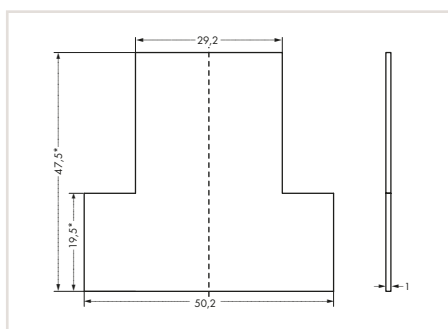
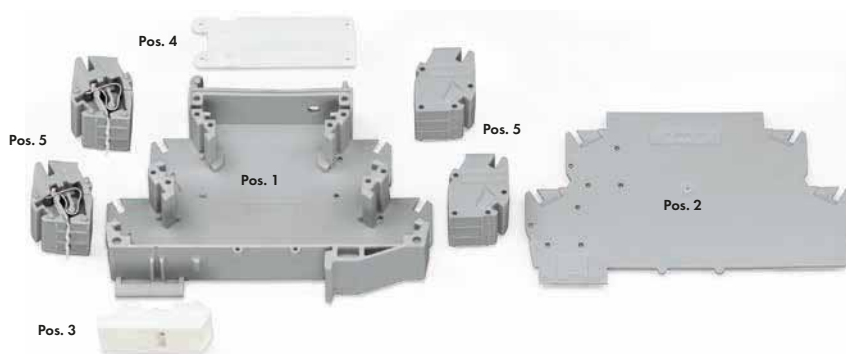
Description	Item No.	Pack. Unit
2-way	859-402	200 (8x25)
3-way	859-403	200 (8x25)
4-way	859-404	200 (8x25)
5-way	859-405	200 (8x25)
6-way	859-406	100 (4x25)
7-way	859-407	100 (4x25)
8-way	859-408	100 (4x25)
9-way	859-409	100 (4x25)
10-way	859-410	100 (4x25)
Item no. suffixes for colored push-in type jumper bars	yellow	... /000-029
	red	... /000-005
	blue	... /000-006

Test pin



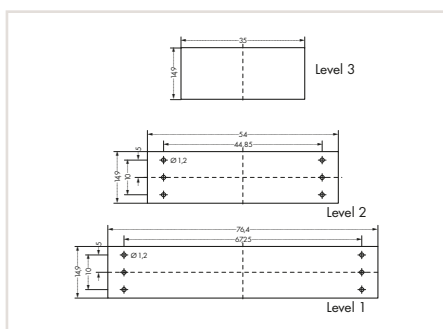
Description	Item No.	Pack. Unit
Test pin, 1 mm Ø, with solder connection for test cable	100 (100x1)	1

DIN-Rail Mount Enclosures 789 Series

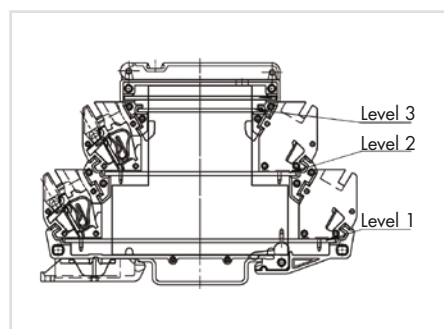


PCB dimensions, for horizontal mounting

* less 4.5 mm when mounting a vertical PCB on level 1



PCB dimensions, for vertical mounting: (PCB thickness max. 1.5 mm) in level 1; (PCB thickness max. 1 mm) in level 2 and 3



Modular housing for mounting electronic components in a rail-mounted terminal block

Description	Pos.	Item No.	Pack. Unit
Housing 55 mm	1	789-120	1
Top cover 55 mm	2	789-122	1
Transparent cover	4	789-124	1
Release mechanism	3	789-126	1
Terminal block, 3-pole: CCC*	5	789-127	1
Terminal block, 3-pole: COC*	5	789-128	1
Terminal block, 3-pole: CCO*	5	789-129	1
Terminal block, 3-pole: OCC*	5	789-130	1
Terminal block, 3-pole: OCO*	5	789-131	1
Terminal block, 3-pole: OOO*	5	789-132	1
Terminal block, 3-pole: OOC*	5	789-133	1
Terminal block, 3-pole: COO*	5	789-134	1

*C = with clamping spring, O = without clamping spring, enclosure open on the right side

Technical Data

Rated voltage	250 V
Rated impulse voltage	4 kV
Pollution degree	3
Housing material	PA 66
Flammability rating	V0
Color	gray (similar to RAL 7038)
Protection type	IP20
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-40 ... +85 °C
Mounting position	any
Dimensions (W x H x D)	17.5 x 55 x 90 mm, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

Accessories

789 Series

Push-in type jumper bar



Description	Item No.	Pack. Unit
I _N 16 A uninsulated, 12-way, to be cut to the required length	789-112	100 (4x25)

Operating tool with a partially insulated shaft



Description	Item No.	Pack. Unit
Type 2, 3.5 x 0.5 mm blade	210-620	1

Felt-tip pen



Description	Item No.	Pack. Unit
Fiber-tip pen for permanent marking	210-110	1

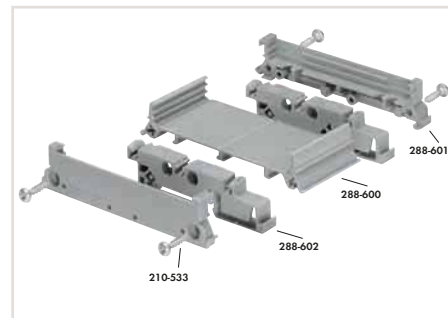
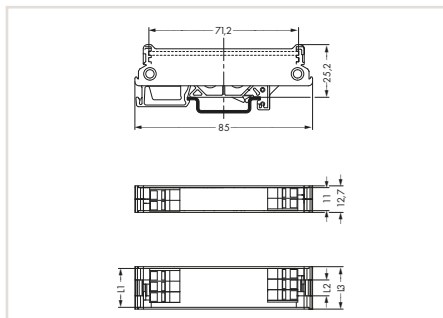
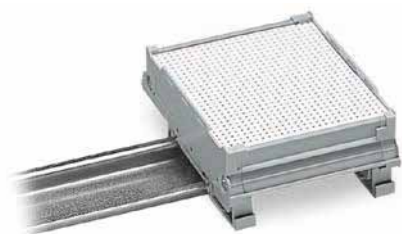
WMB Multi marking system,
10 strips with 10 markers, white, with black printing



Description	Item No.	Pack. Unit
plain	248-501	5 cards
Marking		
1 ... 10 (10 x)	248-502	5 cards
11 ... 20 (10 x)	248-503	5 cards
21 ... 30 (10 x)	248-504	5 cards
31 ... 40 (10 x)	248-505	5 cards
41 ... 50 (10 x)	248-506	5 cards
1 ... 50 (2 x)	248-566	5 cards
K 1 ... K 10 (10 x)	248-450	5 cards
K 11 ... K 20 (10 x)	248-451	5 cards
K 100 (10 x)	248-452	5 cards
U 1 ... U 10 (10 x)	248-453	5 cards
U 11 ... U 20 (10 x)	248-454	5 cards
U 100 (10 x)	248-455	5 cards

DIN-Rail Mount PCB Carriers

288 Series

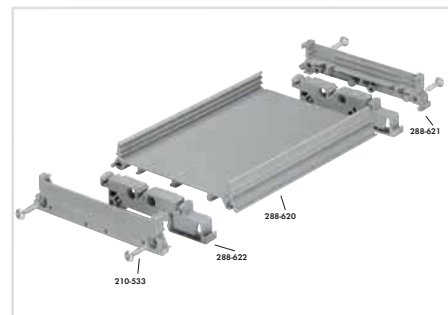
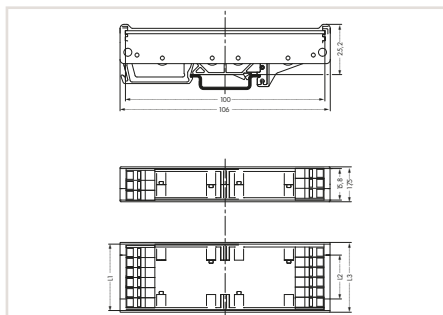


Mounting carrier (size 1)

Length calculation of a complete mounting carrier:

- PCB length: L1
- Base length: L2 = L1 - 11 mm
- Mounting carrier length: L3 = L1 + 2 mm
- Lateral cover (size 1): 6.35 mm thick
- Free space between base and PCB (when using upper PCB groove): 5 mm
- PCB tolerances: 1.5 mm ±0.2 mm (thickness), ±0.2 mm (length/width); -0.1/+0.3 for milling contours

Mounting carrier, size 1		
Description	Item No.	Pack. Unit
Lateral cover, size 1, small, 6.35 mm thick	288-601	1
Mounting foot for DIN-35 rail	288-602	1
Carrier base, size 1, 1 m long	288-600	1



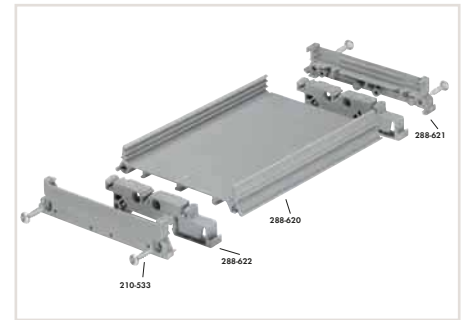
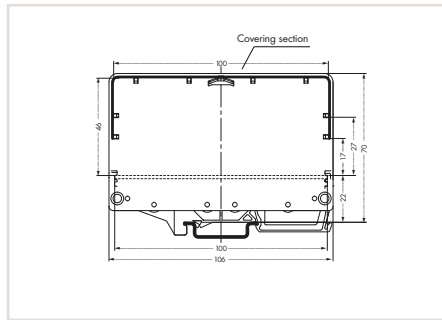
Mounting carrier (size 2)

In order to determine the length of a complete mounting carrier:

- PCB length: L1
- Base length: L2 = L1 - 15.8 mm
- Mounting carrier length: L3 = L1 + 2 mm
- Cover length: L4 = L1
- Lateral cover (size 2): 8.75 mm thick
- Free space between base and PCB (when using upper PCB groove): 5 mm
- PCB tolerances: 1.5 mm ±0.2 mm (thickness), ±0.2 mm (length/width); -0.1/+0.3 for milling contours

Mounting carrier, size 2		
Description	Item No.	Pack. Unit
Lateral cover, size 2, small, 8.75 mm thick	288-621	1
Mounting foot for DIN-35 rail	288-622	1
Carrier base, size 2, 1 m long	288-620	1

9



Mounting carrier Size 2

In order to determine the length of a complete mounting carrier:

- PCB length: L1
- Base length: L2 = L1 - 15.8 mm
- Mounting carrier length: L3 = L1 + 2 mm
- Cover length: L4 = L1
- Lateral cover (size 2): 8.75 mm thick
- Free space between base and PCB (when using upper PCB groove): 5 mm
- PCB tolerances: 1.5 mm ±0.2 mm (thickness), ±0.2 mm (length/width); -0.1/+0.3 for milling contours

Mounting carrier, size 2, with cover		
Description	Item No.	Pack. Unit
Lateral cover, size 2, large, 8.75 mm thick	288-626	1
Cover, size 2, 1 m long	288-627	1

Accessories

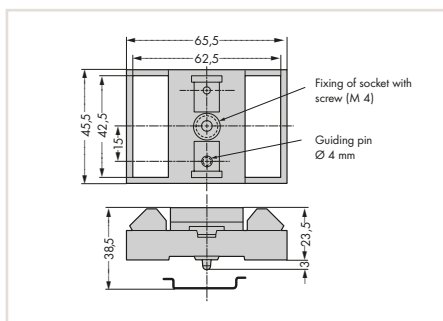
Marking strips



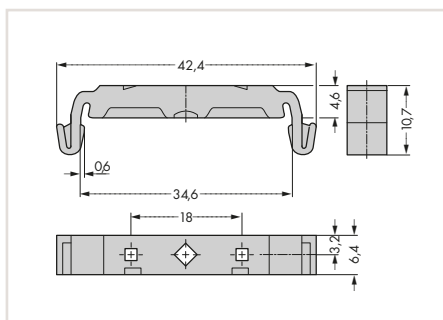
Description	Item No.	Pack. Unit
Phillips screw 2.9 x 13*	210-533	25
Marking strip 7.5 x 0.5 mm, 1 m long, translucent	709-196	1

* Two pieces per lateral cover; for a module length of 35 mm or higher; lateral covers must be riveted for smaller modules. Rivet length depends on module length (rivets are not offered by WAGO).

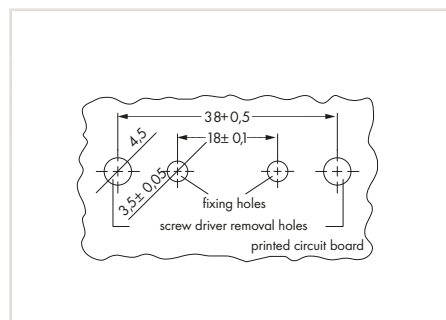
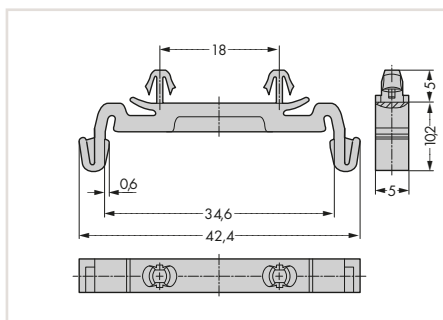
Mounting Carriers and Feet, for DIN-Rail Mounting PCBs 288/209 Series



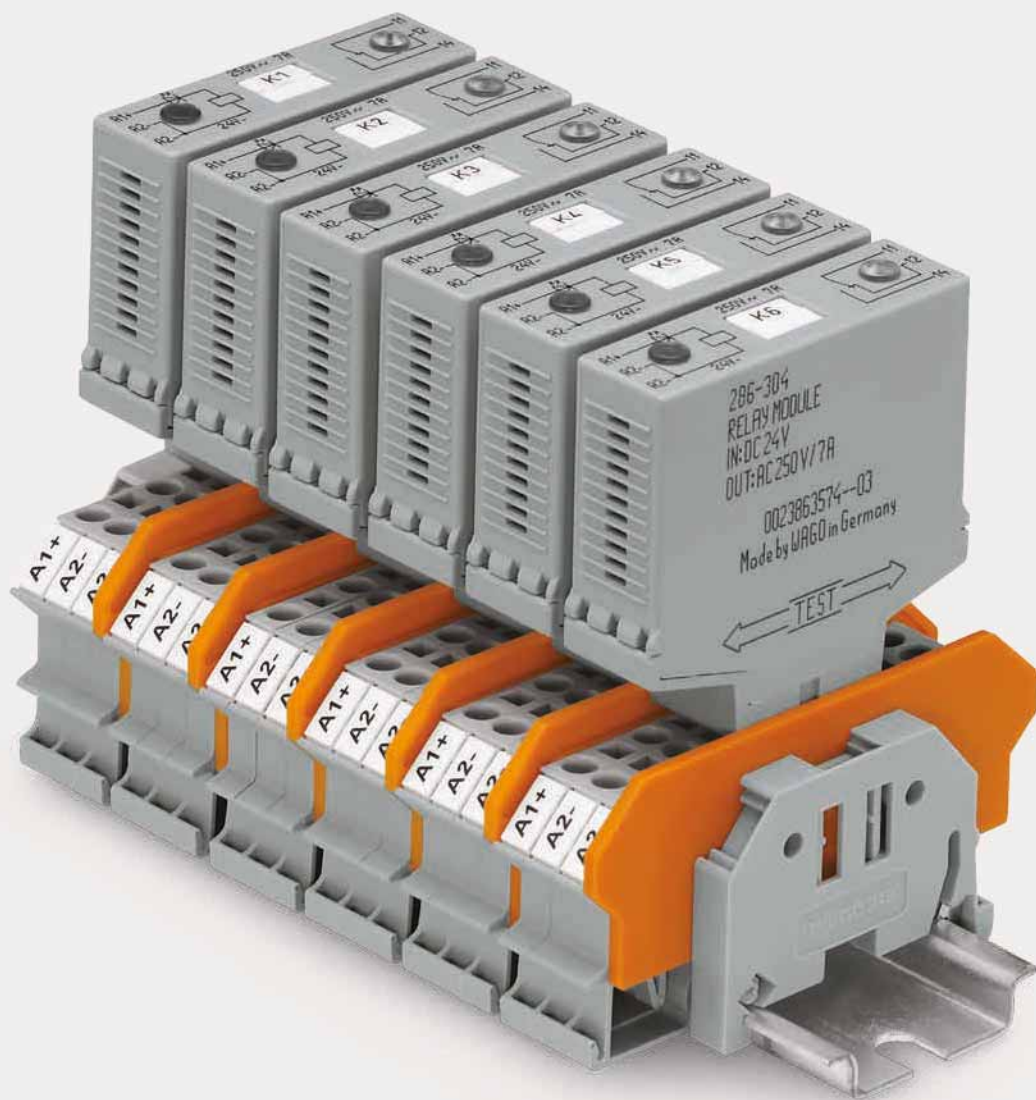
Mounting carrier			
Description	Item No.	Pack. Unit	
Mounting carrier	For screw mounting or DIN-rail mounting via universal snap-on type mounting feet (to be ordered separately)	288-001	1
Universal mounting foot	Snap-on type, for DIN-15, DIN-32 and DIN-35 rails	288-002	10
Mounting carrier for PCBs	Suitable for "Eurocard" (100 x 160 mm)	288-003	1



Mounting foot			
Description	Item No.	Pack. Unit	
Mounting foot	For screw mounting to relay modules, holes for fixing screws 2 mm, PCB hole Ø 3.2 mm/0.126 inch, distance 18 mm/0.709 inch, for mounting on DIN-35 rail	209-120	25
Fixing screw	for mounting foot 209-120	209-119	50


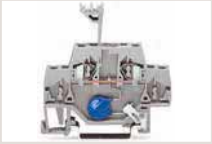




Mounting foot			
Description	Item No.	Pack. Unit	
Mounting foot	For snap-on mounting to relay modules, for fixing hole Ø 3.5 mm/0.138 in., distance 18 mm/0.709 in., for mounting on DIN-35 rail	209-188	25

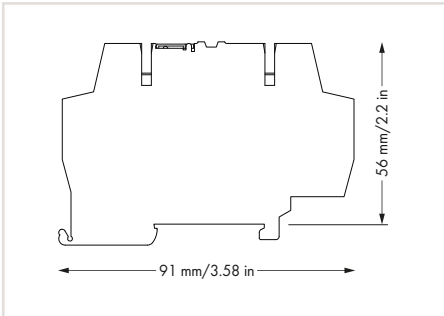


Overvoltage Protection

Overvoltage Protection

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	Pluggable Surge Suppression Modules for Carrier Terminal Blocks, 286 Series	584

Rail-Mount Terminal Blocks with Overvoltage Protection, for DIN-35 Rail 792 Series



Short description:

Surge protection devices for IT systems and devices in the voltage range up to 60 V (except special solutions, e.g. telephone systems with call voltage)

Overvoltage protection is also possible for DIN-35 rail-mount terminal blocks. Multi-stage surge suppression devices in rail-mount terminal blocks (792-80x Series) of just 6 mm width ensure cost-effective protection for control and bus technology (e.g., LON[®] network, PROFIBUS network, binary signals).

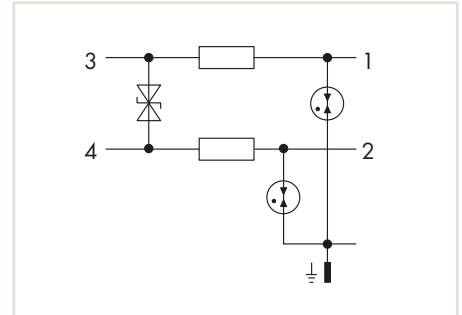
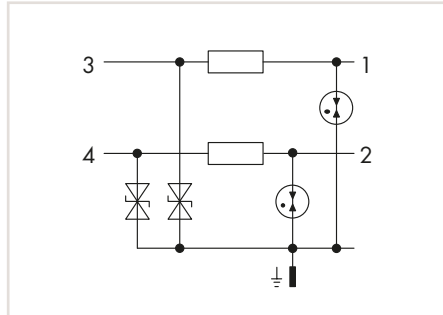
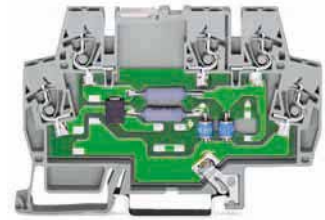
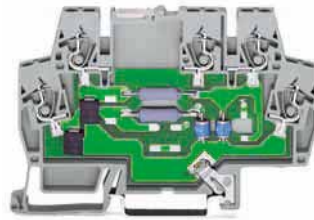
Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

The coordination characteristics give information about the let-through energy of the overvoltage protector and the protection capacity.

Technical Data

Coordination characteristics	X / 1
Protection type	IP00
Degree of protection with end and intermediate plate	IP20
Operating temperature	-40 ... +80 °C
Storage temperature	-40 ... +80 °C
Dimensions W x H x D	6 x 56 x 91 mm, height from upper-edge of DIN-rail
Connection technology	CAGE CLAMP [®]
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Standards/approvals	IEC 61643-21



Surge suppression module for signal circuits, nominal voltage: 24 VDC, for 2 signal paths with common discharge connection, for symmetrical interfaces, 2-stage, 6 mm wide

Nominal Voltage	Item No.	Pack. Unit
24 VDC	792-800	1

Surge suppression module for signal circuits, nominal voltage: 24 VDC, for 2 signal paths with common discharge connection, for asymmetrical interfaces, 2-stage, 6 mm wide

Nominal Voltage	Item No.	Pack. Unit
24 VDC	792-801	1

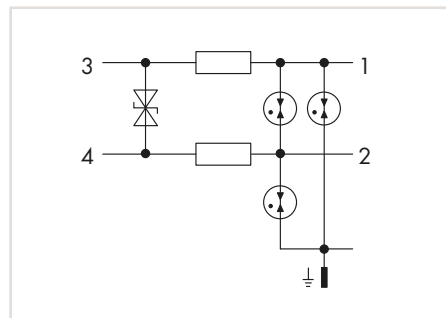
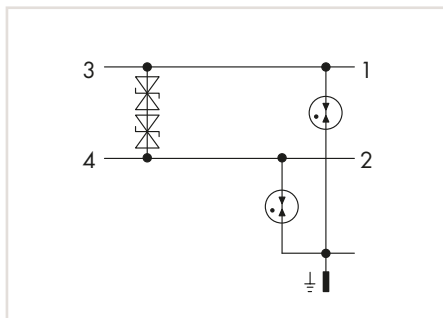
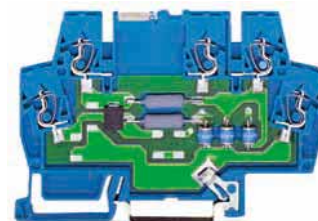
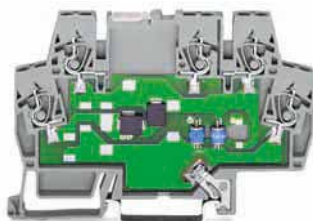
Specific Electrical Data

Nominal voltage	24 VDC
Max. cont. operating voltage	33 VDC / 23 VAC
Nominal current	0.5 A
Nominal discharge current I_{SN} (8/20) μ s	5 kA per line; 10 kA total
Voltage protection level at I_N category C2	≤ 65 V (line/PG); ≤ 110 V (line/line)
Voltage protection level at 1 kV/ μ s category C3	≤ 45 V (line/PG); ≤ 90 V (line/line)
Series impedance per line	1.8 Ω
Response time t_a	≤ 1 ns
Limiting frequency	6 MHz (line/PG)
Capacitance C	≤ 1.0 nF (line/PG); ≤ 0.5 nF (line/line)

Nominal voltage	24 VDC
Max. cont. operating voltage	33 VDC / 23 VAC
Nominal current	0.5 A
Nominal discharge current I_{SN} (8/20) μ s	5 kA per line; 10 kA total
Voltage protection level at I_N category C2	≤ 50 V (line/line); ≤ 750 V (line/PG)
Voltage protection level at 1 kV/ μ s category C3	≤ 45 V (line/line); ≤ 650 V (line/PG)
Series impedance per line	1.8 Ω
Response time t_a	≤ 100 ns (line/PG); ≤ 1 ns (line/line)
Limiting frequency	6 MHz (line/PG)
Capacitance C	≤ 5 pF (line/PG); ≤ 1 nF (line/line)

Nominal voltage	24 VDC
Max. cont. operating voltage	33 VDC / 23 VAC
Nominal current	0.5 A
Nominal discharge current I_{SN} (8/20) μ s	5 kA per line; 10 kA total
Voltage protection level at I_N category C2	≤ 50 V (line/line); ≤ 750 V (line/PG)
Voltage protection level at 1 kV/ μ s category C3	≤ 45 V (line/line); ≤ 650 V (line/PG)
Series impedance per line	1.8 Ω
Response time t_a	≤ 100 ns (line/PG); ≤ 1 ns (line/line)
Limiting frequency	6 MHz (line/PG)
Capacitance C	≤ 5 pF (line/PG); ≤ 1 nF (line/line)

Rail-Mount Terminal Blocks with Overvoltage Protection, for DIN-35 Rail 792 Series



Surge suppression module for signal circuits, nominal voltage: 24 VDC, for 2 signal paths with common discharge connection, for supply lines, 1-stage, 6 mm wide

Nominal Voltage	Item No.	Pack. Unit
24 VDC	792-802	1

Surge suppression module for signal circuits, nominal voltage: 24 VDC, for 2 signal paths with common discharge connection, for symmetrical interfaces, 2-stage, for protecting intrinsically safe circuits, 6 mm wide

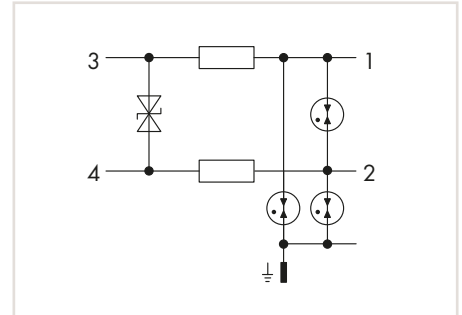
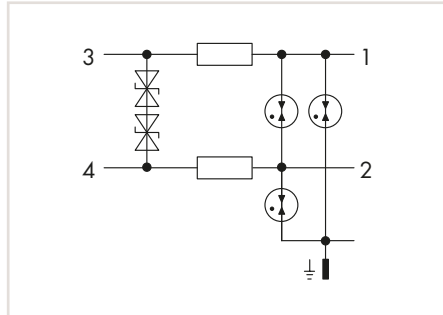
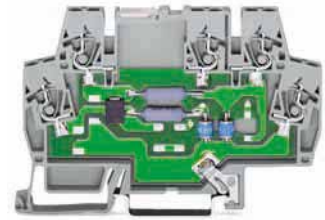
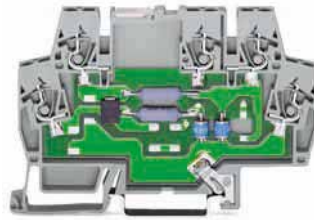
Nominal Voltage	Item No.	Pack. Unit
24 VDC	792-803	1

Specific Electrical Data

Nominal voltage	24 VDC
Max. cont. operating voltage	33 VDC / 23 VAC
Max. input voltage acc. to EN 50020 Ui	
Max. input current acc. to EN 50020 Ii	
Nominal current	10 A
Nominal discharge current I_{SN} (8/20) μ s	5 kA (line/PG); 300 A (line/line)
Voltage protection level at I_N category C2	≤ 50 V (line/line); ≤ 750 V (line/PG)
Voltage protection level at 1 kV/ μ s category C3	≤ 45 V (line/line); ≤ 650 V (line/PG)
Series impedance per line	
Response time t_d	≤ 100 ns (line/PG); ≤ 1 ns (line/line)
Limiting frequency	7 MHz
Capacitance C	≤ 12 pF (line/PG); ≤ 1 nF (line/line)

Nominal voltage	24 VDC
Max. cont. operating voltage	33 VDC / 23 VAC
Max. input voltage acc. to EN 50020 Ui	
Max. input current acc. to EN 50020 Ii	
Nominal current	0.5 A
Nominal discharge current I_{SN} (8/20) μ s	5 kA per line; 10 kA total
Voltage protection level at I_N category C2	≤ 1500 V (line/PG); ≤ 50 V (line/line)
Voltage protection level at 1 kV/ μ s category C3	≤ 1400 V (line/PG); ≤ 45 V (line/line)
Series impedance per line	1.8 Ω
Response time t_d	≤ 100 ns (line/PG); ≤ 1 ns (line/line)
Limiting frequency	6 MHz
Capacitance C	≤ 6 pF (line/PG); ≤ 1 nF (line/line)

Nominal voltage	24 VDC
Max. cont. operating voltage	33 VDC / 23 VAC
Max. input voltage acc. to EN 50020 Ui	
Max. input current acc. to EN 50020 Ii	
Nominal current	0.5 A
Nominal discharge current I_{SN} (8/20) μ s	5 kA per line; 10 kA total
Voltage protection level at I_N category C2	≤ 1500 V (line/PG); ≤ 50 V (line/line)
Voltage protection level at 1 kV/ μ s category C3	≤ 1400 V (line/PG); ≤ 45 V (line/line)
Series impedance per line	1.8 Ω
Response time t_d	≤ 100 ns (line/PG); ≤ 1 ns (line/line)
Limiting frequency	6 MHz
Capacitance C	≤ 6 pF (line/PG); ≤ 1 nF (line/line)



Surge suppression module for signal circuits, nominal voltage: 48 VDC, for 2 signal paths with common discharge connection, for symmetrical interfaces, 2-stage, 6 mm wide

Surge suppression module for signal circuits, nominal voltage: 5 VDC, for 2 signal paths with common discharge connection, for interfaces with high data rates, 2-stage, 6 mm wide

Nominal Voltage	Item No.	Pack. Unit
48 VDC	792-804	1

Nominal Voltage	Item No.	Pack. Unit
5 VDC	792-805	1

Specific Electrical Data

Nominal voltage	48 VDC
Max. cont. operating voltage	55 VDC / 38.5 VAC
Nominal current	1.7 A
Nominal discharge current I_{SN} (8/20) μ s	5 kA per line; 10 kA total
Voltage protection level at I_N category C2	≤ 100 V (line/line); ≤ 750 V (line/PG)
Voltage protection level at 1 kV/ μ s category C3	≤ 70 V (line/line); ≤ 650 V (line/PG)
Series impedance per line	0.4 Ω
Response time t_a	≤ 100 ns (line/line); ≤ 1 ns (line/PG)
Limiting frequency	10 MHz
Capacitance C	≤ 0.6 pF (line/PG); ≤ 10 pF (line/line)

Nominal voltage	5 VDC
Max. cont. operating voltage	6 VDC / 4.2 VAC
Nominal current	0.1 A
Nominal discharge current I_{SN} (8/20) μ s	5 kA per line; 10 kA total
Voltage protection level at I_N category C2	≤ 27 V (line/line); ≤ 50 V (line/PG)
Voltage protection level at 1 kV/ μ s category C3	≤ 14 V (line/line); ≤ 14 V (line/PG)
Series impedance per line	1 Ω
Response time t_a	≤ 1 ns
Limiting frequency	250 MHz / 180 MHz (line/PG)
Capacitance C	≤ 16 pF (line/PG); ≤ 19 pF (line/line)

Nominal voltage	5 VDC
Max. cont. operating voltage	6 VDC / 4.2 VAC
Nominal current	0.1 A
Nominal discharge current I_{SN} (8/20) μ s	5 kA per line; 10 kA total
Voltage protection level at I_N category C2	≤ 27 V (line/line); ≤ 50 V (line/PG)
Voltage protection level at 1 kV/ μ s category C3	≤ 14 V (line/line); ≤ 14 V (line/PG)
Series impedance per line	1 Ω
Response time t_a	≤ 1 ns
Limiting frequency	250 MHz / 180 MHz (line/PG)
Capacitance C	≤ 16 pF (line/PG); ≤ 19 pF (line/line)

Accessories

792 Series

End and intermediate plate, 1 mm thick



Color	Item No.	Pack. Unit
gray	859-525	100 (4*25)

Push-in type jumper bar, light gray, insulated, 18 A



	Item No.	Pack. Unit
2-way	859-402	200 (8x25)
3-way	859-403	200 (8x25)
4-way	859-404	200 (8x25)
5-way	859-405	200 (8x25)
6-way	859-406	100 (4x25)
7-way	859-407	100 (4x25)
8-way	859-408	100 (4x25)
9-way	859-409	100 (4x25)
10-way	859-410	100 (4x25)

Item no. suffixes for colored push-in type jumper bars	Item No.	
yellow	... /000-029	
red	... /000-005	
blue	... /000-006	

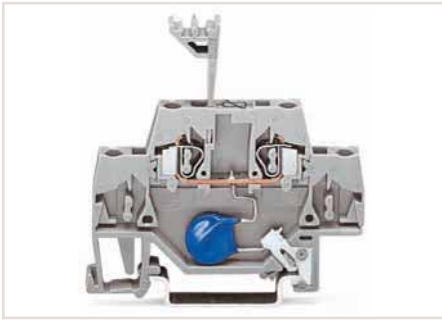
Miniature WSB Quick marking system, 10 strips with 10 markers each, white, with black printing



	Item No.	Pack. Unit	
plain	248-501	5	
Marking	1 ... 10 (10 x)	248-502	5
	11 ... 20 (10 x)	248-503	5
	21 ... 30 (10 x)	248-504	5
	31 ... 40 (10 x)	248-505	5
	41 ... 50 (10 x)	248-506	5
	1 ... 50 (2 x)	248-566	5
	K 1 ... K 10 (10 x)	248-450	5
	K 11 ... K 20 (10 x)	248-451	5
	K 100 (10 x)	248-452	5
	U 1 ... U 10 (10 x)	248-453	5
U 11 ... U 20 (10 x)	248-454	5	
U 100 (10 x)	248-455	5	

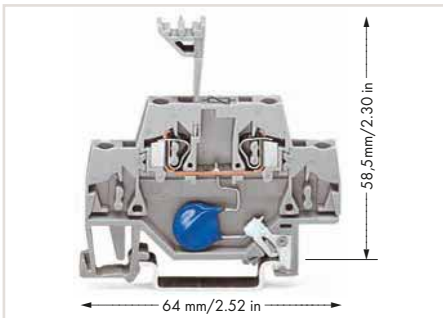
Terminal Blocks with Surge Suppression Device and Direct Connection to the DIN-35 Rail

280 Series



General Specifications

Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch
Terminal block width	5 mm/0.197 inch

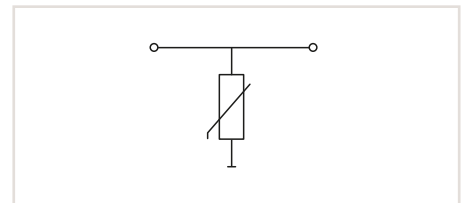
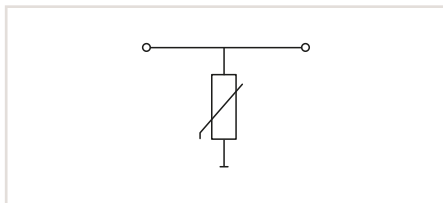
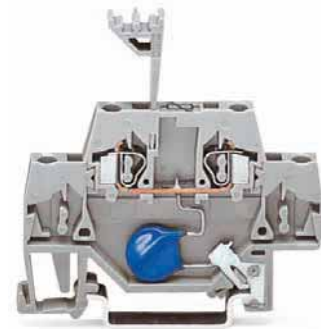
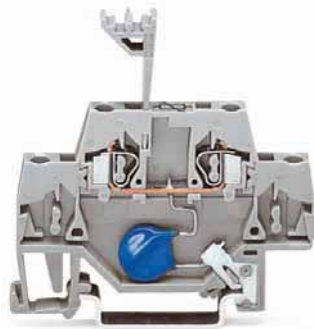


Short description:

Terminal blocks with surge suppression device and direct connection to the DIN-35 rail; these single-stage surge suppression devices are equipped either with 280 Series gas-filled surge arrester (coarse), varistor (medium) or suppressor diode (fine).

Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime



Terminal block, with varistor		
U_{BN}	Item No.	Pack. Unit
24 VDC	280-502/281-609	50

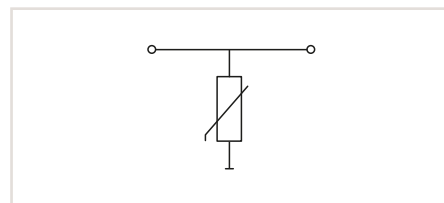
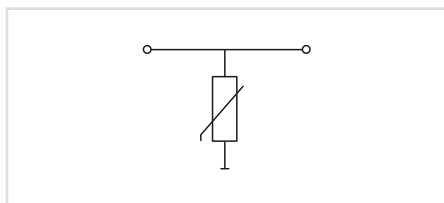
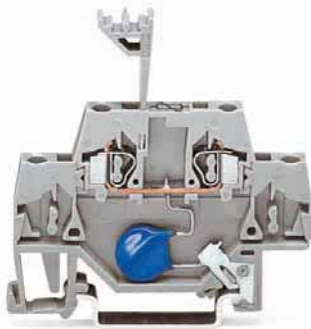
Terminal block, with varistor		
U_{BN}	Item No.	Pack. Unit
48 VDC	280-502/281-610	50

Specific Technical Data

Nominal operating voltage U_{BN}	24 VDC	48 VDC
Max. cont. operating voltage U_c	31 VDC	65 VDC
Nominal discharge current (8/20 μ s) per line I_N	60 A	300 A
Max. discharge current (8/20 μ s) I_{max}	250 A	1.2 kA
Capacitance	≤ 1.25 nF	≤ 0.5 nF
Voltage protection level (8/20 μ s) U_p	77 VDC	135 VDC

Terminal Blocks with Surge Suppression Device and Direct Connection to the DIN-35 Rail

280 Series



Terminal block, with varistor		
U_{BN}	Item No.	Pack. Unit
60 VDC	280-502/281-611	50

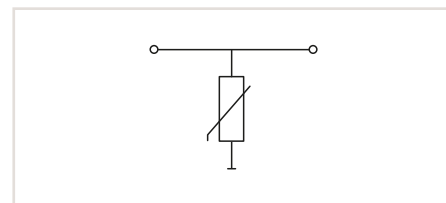
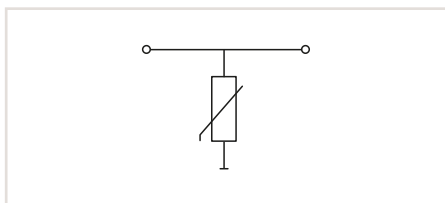
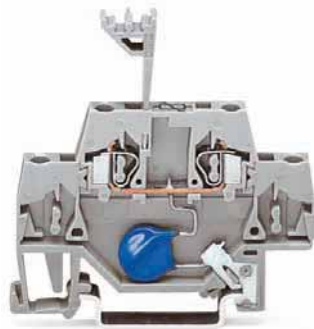
Terminal block, with varistor		
U_{BN}	Item No.	Pack. Unit
110 VDC	280-502/281-612	50

Specific Technical Data

Nominal operating voltage U_{BN}	60 VDC
Max. cont. operating voltage U_C	85 VDC
Nominal discharge current (8/20 μ s) per line I_N	300 A
Max. discharge current (8/20 μ s) I_{max}	1.2 kA
Capacitance	≤ 0.48 nF
Voltage protection level (8/20 μ s) U_p	165 VDC

Nominal operating voltage U_{BN}	110 VDC
Max. cont. operating voltage U_C	150 VDC
Nominal discharge current (8/20 μ s) per line I_N	300 A
Max. discharge current (8/20 μ s) I_{max}	1.2 kA
Capacitance	≤ 0.22 nF
Voltage protection level (8/20 μ s) U_p	300 VAC

Nominal operating voltage U_{BN}	110 VDC
Max. cont. operating voltage U_C	150 VDC
Nominal discharge current (8/20 μ s) per line I_N	300 A
Max. discharge current (8/20 μ s) I_{max}	1.2 kA
Capacitance	≤ 0.22 nF
Voltage protection level (8/20 μ s) U_p	300 VAC



Terminal block, with varistor		
U_{BN}	Item No.	Pack. Unit
24 VAC	280-502/281-613	50

Terminal block, with varistor		
U_{BN}	Item No.	Pack. Unit
115 VAC	280-502/281-614	50

Specific Technical Data

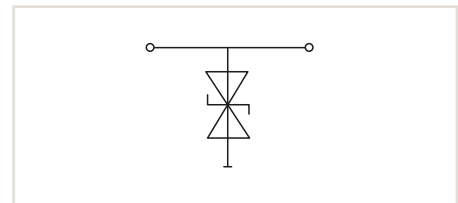
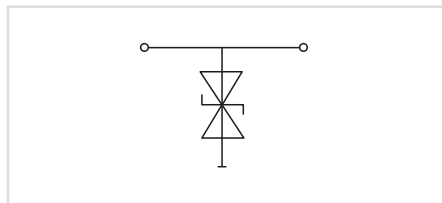
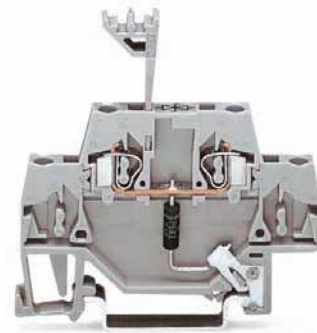
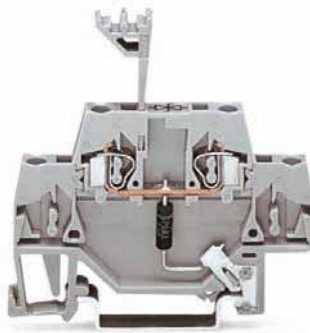
Nominal operating voltage U_{BN}	24 VAC
Max. cont. operating voltage U_c	30 VAC
Nominal discharge current (8/20 μ s) per line I_N	60 A
Max. discharge current (8/20 μ s) I_{max}	250 A
Capacitance	≤ 1.05 nF
Voltage protection level (8/20 μ s) U_p	93 VAC

Nominal operating voltage U_{BN}	115 VAC
Max. cont. operating voltage U_c	140 VAC
Nominal discharge current (8/20 μ s) per line I_N	300 A
Max. discharge current (8/20 μ s) I_{max}	1.2 kA
Capacitance	≤ 0.18 nF
Voltage protection level (8/20 μ s) U_p	360 VAC

Nominal operating voltage U_{BN}	115 VAC
Max. cont. operating voltage U_c	140 VAC
Nominal discharge current (8/20 μ s) per line I_N	300 A
Max. discharge current (8/20 μ s) I_{max}	1.2 kA
Capacitance	≤ 0.18 nF
Voltage protection level (8/20 μ s) U_p	360 VAC

Terminal Blocks with Surge Suppression Device and Direct Connection to the DIN-35 Rail

280 Series



Terminal block, with suppressor		
U_{BN}	Item No.	Pack. Unit
24 VDC	280-502/281-602	50

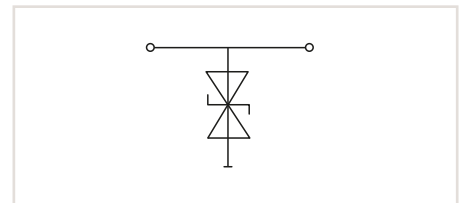
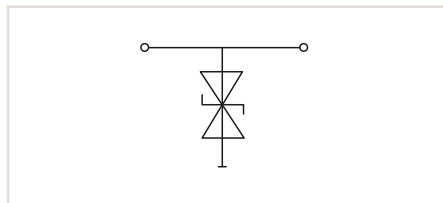
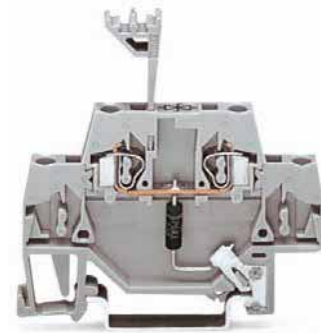
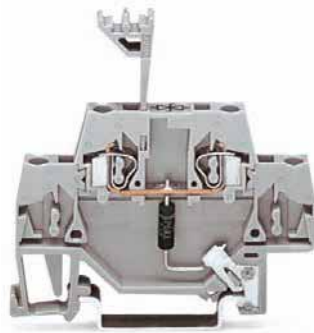
Terminal block, with suppressor		
U_{BN}	Item No.	Pack. Unit
48 VDC	280-502/281-603	50

Specific Technical Data

Nominal operating voltage U_{BN}	24 VDC
Max. cont. operating voltage U_C	30.8 VDC
Nominal discharge current (8/20 μ s) per line I_N	12 A
Capacitance	≤ 1 nF
Voltage protection level (8/20 μ s) U_P	50 VDC

Nominal operating voltage U_{BN}	48 VDC
Max. cont. operating voltage U_C	58 VDC
Nominal discharge current (8/20 μ s) per line I_N	6.5 A
Capacitance	≤ 0.63 nF
Voltage protection level (8/20 μ s) U_P	92 VDC

Nominal operating voltage U_{BN}	48 VDC
Max. cont. operating voltage U_C	58 VDC
Nominal discharge current (8/20 μ s) per line I_N	6.5 A
Capacitance	≤ 0.63 nF
Voltage protection level (8/20 μ s) U_P	92 VDC



Terminal block, with suppressor		
U_{BN}	Item No.	Pack. Unit
60 VDC	280-502/281-604	50

Terminal block, with suppressor		
U_{BN}	Item No.	Pack. Unit
110 VDC	280-502/281-605	50

Specific Technical Data

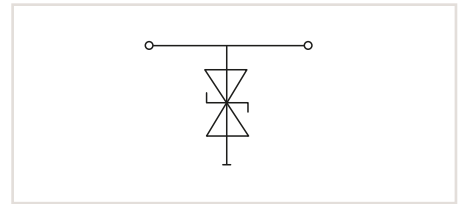
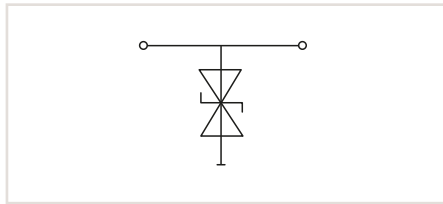
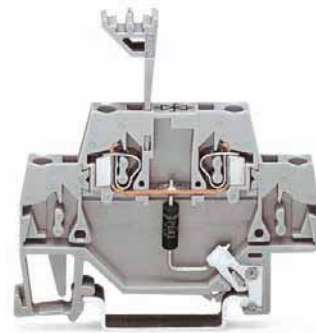
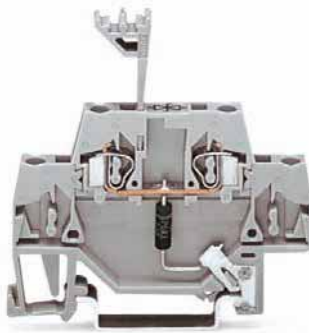
Nominal operating voltage U_{BN}	60 VDC
Max. cont. operating voltage U_c	77 VDC
Nominal discharge current (8/20 μ s) per line I_N	4.8 A
Capacitance	≤ 0.55 nF
Voltage protection level (8/20 μ s) U_P	125 VDC

Nominal operating voltage U_{BN}	110 VDC
Max. cont. operating voltage U_c	136 VDC
Nominal discharge current (8/20 μ s) per line I_N	2.7 A
Capacitance	≤ 0.4 nF
Voltage protection level (8/20 μ s) U_P	219 VDC

Nominal operating voltage U_{BN}	110 VDC
Max. cont. operating voltage U_c	136 VDC
Nominal discharge current (8/20 μ s) per line I_N	2.7 A
Capacitance	≤ 0.4 nF
Voltage protection level (8/20 μ s) U_P	219 VDC

Terminal Blocks with Surge Suppression Device and Direct Connection to the DIN-35 Rail

280 Series



Terminal block, with suppressor		
U_{BN}	Item No.	Pack. Unit
24 VAC	280-502/281-606	50

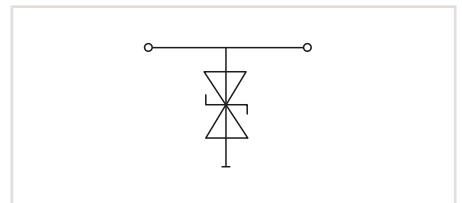
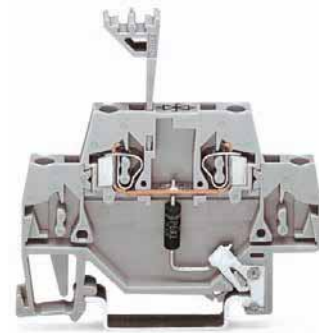
Terminal block, with suppressor		
U_{BN}	Item No.	Pack. Unit
115 VAC	280-502/281-607	50

Specific Technical Data

Nominal operating voltage U_{BN}	24 VAC
Max. cont. operating voltage U_C	28 VAC
Nominal discharge current (8/20 μ s) per line I_N	9.3 A
Capacitance	≤ 0.8 nF
Voltage protection level (8/20 μ s) U_P	65 VAC

Nominal operating voltage U_{BN}	115 VAC
Max. cont. operating voltage U_C	133 VAC
Nominal discharge current (8/20 μ s) per line I_N	1.7 A
Capacitance	≤ 0.35 nF
Voltage protection level (8/20 μ s) U_P	384 VAC

Nominal operating voltage U_{BN}	115 VAC
Max. cont. operating voltage U_C	133 VAC
Nominal discharge current (8/20 μ s) per line I_N	1.7 A
Capacitance	≤ 0.35 nF
Voltage protection level (8/20 μ s) U_P	384 VAC



Terminal block, with suppressor

U_{BN}	Item No.	Pack. Unit
230 VAC	280-502/281-608	50

Specific Technical Data

Nominal operating voltage U_{BN}	230 VAC
Max. cont. operating voltage U_C	253 VAC
Nominal discharge current (8/20 μ s) per line I_N	1.1 A
Capacitance	≤ 0.36 nF
Voltage protection level (8/20 μ s) U_P	548 VAC

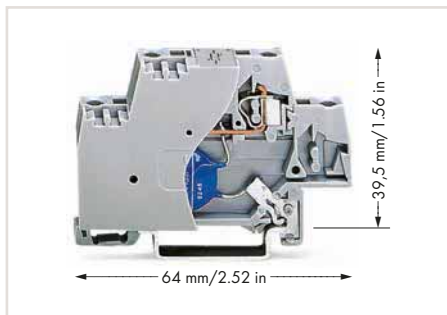
Terminal Blocks with Surge Suppression Device and Direct Connection to the DIN-35 Rail

280 Series



General Specifications

Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch
Terminal block width	10 mm/0.394 inch

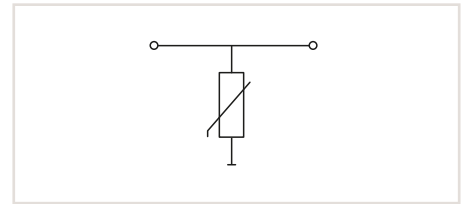
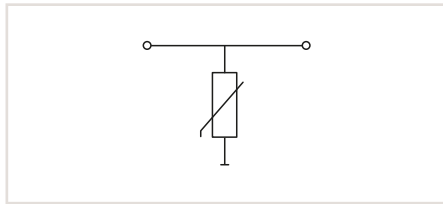
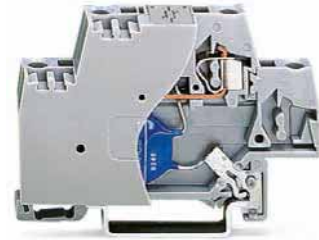
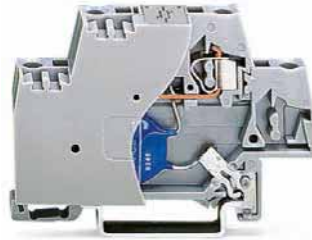


Short description:

Terminal block with surge suppression device and direct connection to the DIN-35 rail; these single-stage surge suppression devices are equipped either with 280 Series gas-filled surge arrester (coarse), varistor (medium) or suppressor diode (fine).

Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime



Terminal block, with varistor and end plate

U_{BN}	Item No.	Pack. Unit
24 VDC	280-502/281-582	25

Terminal block, with varistor and end plate

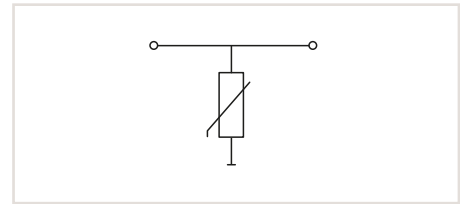
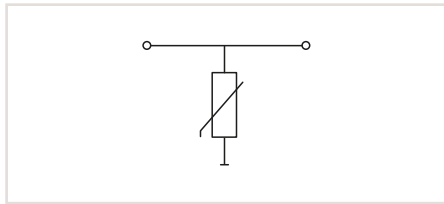
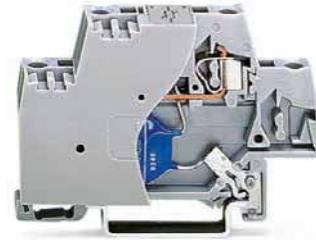
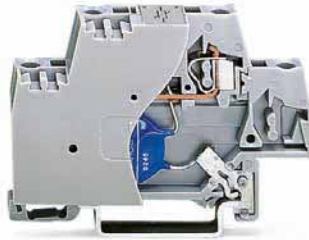
U_{BN}	Item No.	Pack. Unit
48 VDC	280-502/281-583	25

Specific Technical Data

Nominal operating voltage U_{BN}	24 VDC	48 VDC
Max. cont. operating voltage U_c	31 VDC	56 VDC
Nominal discharge current (8/20 μ s) per line I_N	300 A	300 A
Max. discharge current (8/20 μ s) I_{max}	1 kA	1 kA
Capacitance	≤ 4.6 nF	≤ 2.8 nF
Voltage protection level (8/20 μ s) U_p	77 VDC	135 VDC

Terminal Blocks with Surge Suppression Device and Direct Connection to the DIN-35 Rail

280 Series



Terminal block, with varistor and end plate		
U_{BN}	Item No.	Pack. Unit
60 VDC	280-502/281-584	25

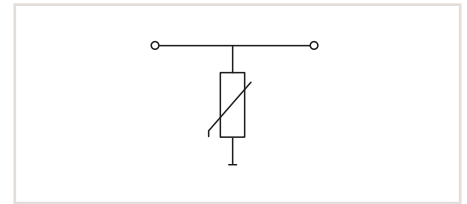
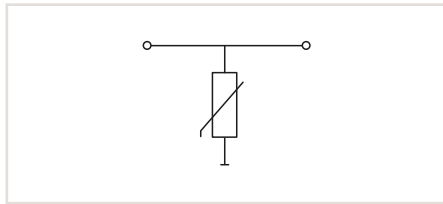
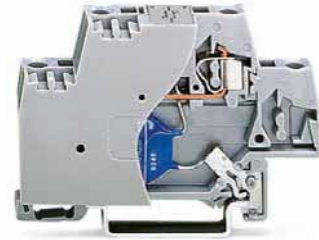
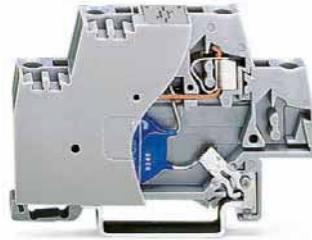
Terminal block, with varistor and end plate		
U_{BN}	Item No.	Pack. Unit
110 VDC	280-502/281-585	25

Specific Technical Data

Nominal operating voltage U_{BN}	60 VDC
Max. cont. operating voltage U_C	85 VDC
Nominal discharge current (8/20 μ s) per line I_N	1 kA
Max. discharge current (8/20 μ s) I_{max}	4.5 kA
Capacitance	≤ 1.7 nF
Voltage protection level (8/20 μ s) U_p	165 VDC

Nominal operating voltage U_{BN}	110 VDC
Max. cont. operating voltage U_C	150 VDC
Nominal discharge current (8/20 μ s) per line I_N	1 kA
Max. discharge current (8/20 μ s) I_{max}	4.5 kA
Capacitance	≤ 0.8 nF
Voltage protection level (8/20 μ s) U_p	300 VDC

Nominal operating voltage U_{BN}	110 VDC
Max. cont. operating voltage U_C	150 VDC
Nominal discharge current (8/20 μ s) per line I_N	1 kA
Max. discharge current (8/20 μ s) I_{max}	4.5 kA
Capacitance	≤ 0.8 nF
Voltage protection level (8/20 μ s) U_p	300 VDC



Terminal block, with varistor and end plate

U_{BN}	Item No.	Pack. Unit
24 VAC	280-502/281-586	25

Terminal block, with varistor and end plate

U_{BN}	Item No.	Pack. Unit
115 VAC	280-502/281-587	25

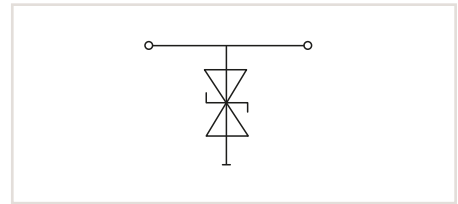
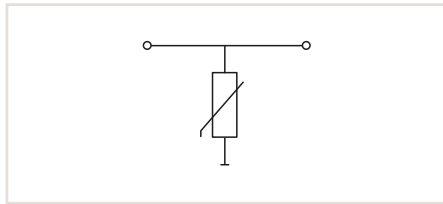
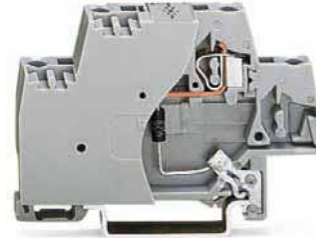
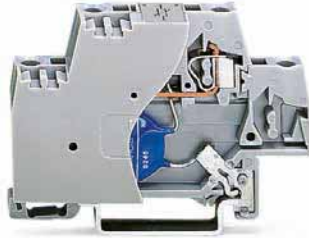
Specific Technical Data

Nominal operating voltage U_{BN}	24 VAC
Max. cont. operating voltage U_c	30 VAC
Nominal discharge current (8/20 μ s) per line I_N	300 A
Max. discharge current (8/20 μ s) I_{max}	1 kA
Capacitance	≤ 3.5 nF
Voltage protection level (8/20 μ s) U_p	93 VAC

Nominal operating voltage U_{BN}	115 VAC
Max. cont. operating voltage U_c	150 VAC
Nominal discharge current (8/20 μ s) per line I_N	1 kA
Max. discharge current (8/20 μ s) I_{max}	4.5 kA
Capacitance	≤ 0.57 nF
Voltage protection level (8/20 μ s) U_p	395 VAC

Terminal Blocks with Surge Suppression Device and Direct Connection to the DIN-35 Rail

280 Series



Terminal block, with varistor and end plate

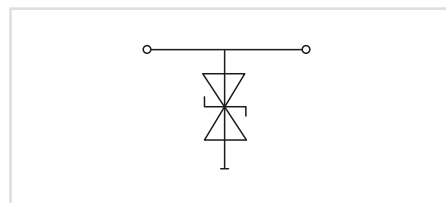
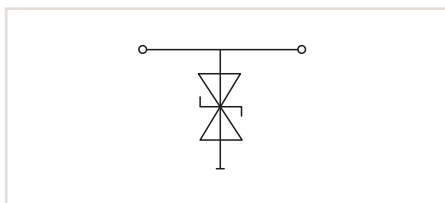
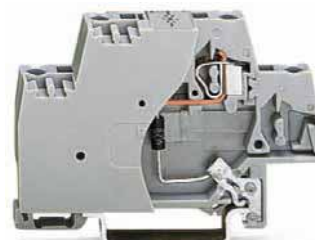
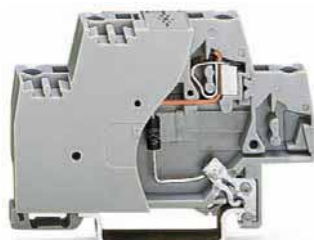
U_{BN}	Item No.	Pack. Unit
230 VAC	280-502/281-588	25

Terminal block, with suppressor diode and end plate

U_{BN}	Item No.	Pack. Unit
24 VDC	280-502/281-589	25

Specific Technical Data

Nominal operating voltage U_{BN}	230 VAC	24 VDC
Max. cont. operating voltage U_C	275 VAC	28 VDC
Nominal discharge current (8/20 μ s) per line I_N	1 kA	169 A
Max. discharge current (8/20 μ s) I_{max}	4.5 kA	
Capacitance	≤ 0.32 nF	≤ 2.7 nF
Voltage protection level (8/20 μ s) U_p	710 VAC	59 VDC



Terminal block, with suppressor diode and end plate		
U_{BN}	Item No.	Pack. Unit
48 VDC	280-502/281-590	25

Terminal block, with suppressor diode and end plate		
U_{BN}	Item No.	Pack. Unit
60 VDC	280-502/281-591	25

Specific Technical Data

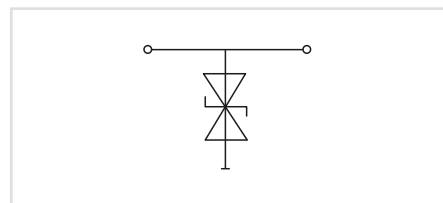
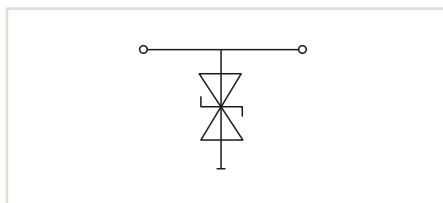
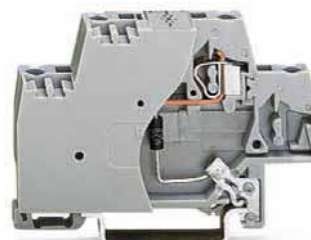
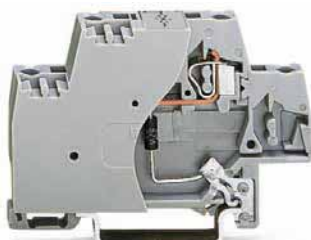
Nominal operating voltage U_{BN}	48 VDC
Max. cont. operating voltage U_c	53 VDC
Nominal discharge current (8/20 μ s) per line I_N	90 A
Capacitance	≤ 1.7 nF
Voltage protection level (8/20 μ s) U_P	111 VDC

Nominal operating voltage U_{BN}	60 VDC
Max. cont. operating voltage U_c	70 VDC
Nominal discharge current (8/20 μ s) per line I_N	69 A
Capacitance	≤ 1.35 nF
Voltage protection level (8/20 μ s) U_P	146 VDC

Nominal operating voltage U_{BN}	60 VDC
Max. cont. operating voltage U_c	70 VDC
Nominal discharge current (8/20 μ s) per line I_N	69 A
Capacitance	≤ 1.35 nF
Voltage protection level (8/20 μ s) U_P	146 VDC

Terminal Blocks with Surge Suppression Device and Direct Connection to the DIN-35 Rail

280 Series



Terminal block, with suppressor diode and end plate

U_{BN}	Item No.	Pack. Unit
110 VDC	280-502/281-592	25

Terminal block, with suppressor diode and end plate

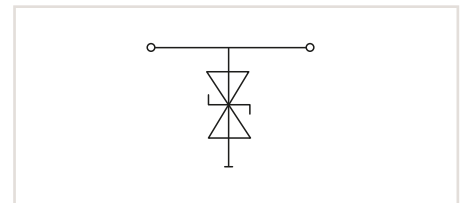
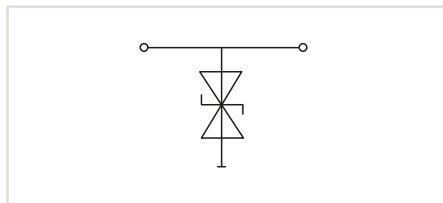
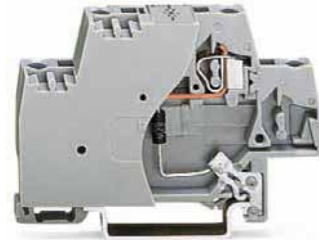
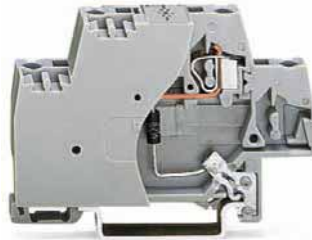
U_{BN}	Item No.	Pack. Unit
24 VAC	280-502/281-593	25

Specific Technical Data

Nominal operating voltage U_{BN}	110 VDC
Max. cont. operating voltage U_C	128 VDC
Nominal discharge current (8/20 μ s) per line I_N	38 A
Capacitance	≤ 0.85 nF
Voltage protection level (8/20 μ s) U_P	265 VDC

Nominal operating voltage U_{BN}	24 VAC
Max. cont. operating voltage U_C	26 VAC
Nominal discharge current (8/20 μ s) per line I_N	143 A
Capacitance	≤ 2.4 nF
Voltage protection level (8/20 μ s) U_P	70 VAC

Nominal operating voltage U_{BN}	24 VAC
Max. cont. operating voltage U_C	26 VAC
Nominal discharge current (8/20 μ s) per line I_N	143 A
Capacitance	≤ 2.4 nF
Voltage protection level (8/20 μ s) U_P	70 VAC



Terminal block, with suppressor diode and end plate

U_{BN}	Item No.	Pack. Unit
115 VAC	280-502/281-594	25

Terminal block, with suppressor diode and end plate

U_{BN}	Item No.	Pack. Unit
230 VAC	280-502/281-595	25

Specific Technical Data

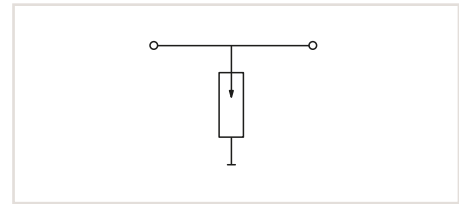
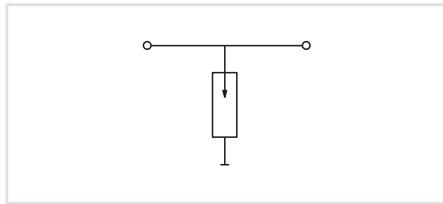
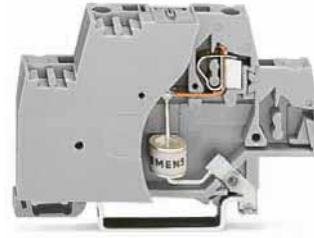
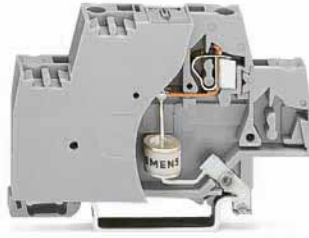
Nominal operating voltage U_{BN}	115 VAC
Max. cont. operating voltage U_c	133 VAC
Nominal discharge current (8/20 μ s) per line I_N	26 A
Capacitance	≤ 0.63 nF
Voltage protection level (8/20 μ s) U_P	388 VAC

Nominal operating voltage U_{BN}	230 VAC
Max. cont. operating voltage U_c	253 VAC
Nominal discharge current (8/20 μ s) per line I_N	14 A
Capacitance	≤ 0.4 nF
Voltage protection level (8/20 μ s) U_P	706 VAC

Nominal operating voltage U_{BN}	230 VAC
Max. cont. operating voltage U_c	253 VAC
Nominal discharge current (8/20 μ s) per line I_N	14 A
Capacitance	≤ 0.4 nF
Voltage protection level (8/20 μ s) U_P	706 VAC

Terminal Blocks with Surge Suppression Device and Direct Connection to the DIN-35 Rail

280 Series



Terminal block, with gas-filled surge arrester

U_{BN}	Item No.	Pack. Unit
24 VAC/DC	280-503/281-579	25

Terminal block, with gas-filled surge arrester

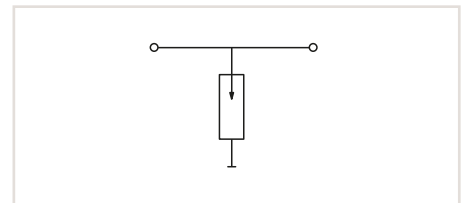
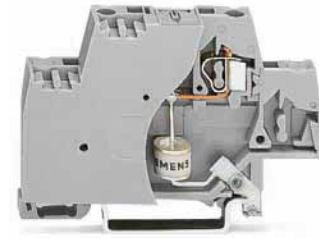
U_{BN}	Item No.	Pack. Unit
115 VAC/DC	280-503/281-580	25

Specific Technical Data

Max. cont. operating voltage U_c	70 VAC/90 VDC
Nominal discharge current (8/20 μ s) per line I_N	5 kA
Capacitance	≤ 2 pF
Voltage protection level (8/20 μ s) U_p	600 VAC

Max. cont. operating voltage U_c	180 VAC/230 VDC
Nominal discharge current (8/20 μ s) per line I_N	5 kA
Capacitance	≤ 2 pF
Voltage protection level (8/20 μ s) U_p	650 VAC

Max. cont. operating voltage U_c	180 VAC/230 VDC
Nominal discharge current (8/20 μ s) per line I_N	5 kA
Capacitance	≤ 2 pF
Voltage protection level (8/20 μ s) U_p	650 VAC



Terminal block, with gas-filled surge arrester

U_{BN}	Item No.	Pack. Unit
230 VAC/DC	280-503/281-581	25

Specific Technical Data

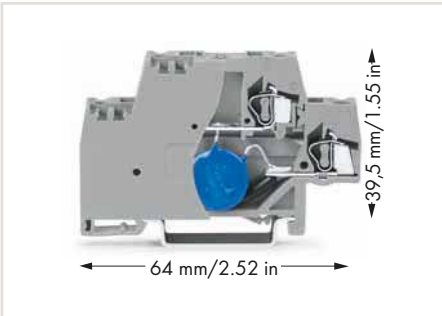
Max. cont. operating voltage U_c	450 VAC/600 VDC
Nominal discharge current (8/20 μ s) per line I_N	5 kA
Capacitance	≤ 2 pF
Voltage protection level (8/20 μ s) U_p	1100 VAC

Double-Deck Terminal Blocks with a Surge Suppression Device 280 Series



General Specifications

Connection technology	CAGE CLAMP®
Conductor range	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	8 ... 9 mm / 0.31 ... 0.35 inch
Terminal block width	10 mm/0.394 inch

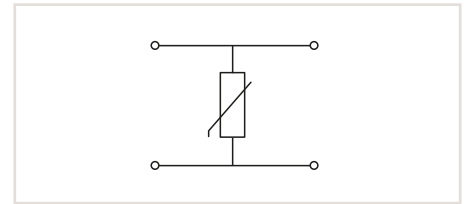
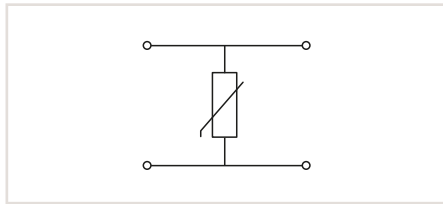
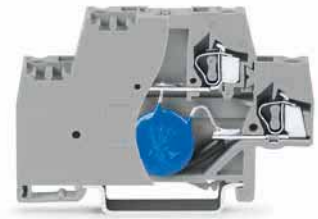
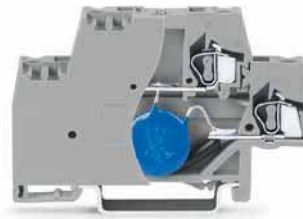


Short description:

These single-stage surge suppression devices are equipped either with 280 Series gas-filled surge arrester (coarse), varistor (medium) or suppressor diode (fine).

Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime



Terminal block, with varistor and end plate

U_{BN}	Item No.	Pack. Unit
24 VDC	280-504/281-582	25

Terminal block, with varistor and end plate

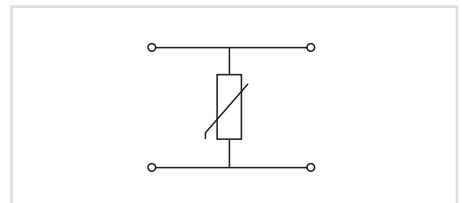
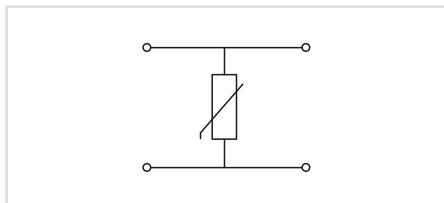
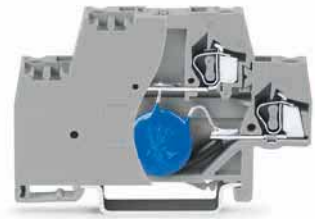
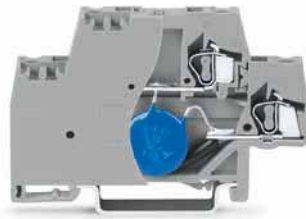
U_{BN}	Item No.	Pack. Unit
48 VDC	280-504/281-583	25

Specific Technical Data

Nominal operating voltage U_{BN}	24 VDC
Max. cont. operating voltage U_c	31 VDC
Nominal discharge current (8/20 μ s) per line I_N	300 A
Max. discharge current (8/20 μ s) I_{max}	1 kA
Capacitance	≤ 4.6 nF
Voltage protection level (8/20 μ s) U_p	77 VDC

Nominal operating voltage U_{BN}	48 VDC
Max. cont. operating voltage U_c	56 VDC
Nominal discharge current (8/20 μ s) per line I_N	300 A
Max. discharge current (8/20 μ s) I_{max}	1 kA
Capacitance	≤ 2.8 nF
Voltage protection level (8/20 μ s) U_p	135 VDC

Double-Deck Terminal Blocks with a Surge Suppression Device 280 Series

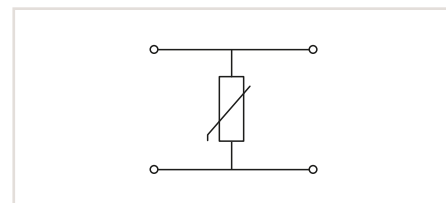
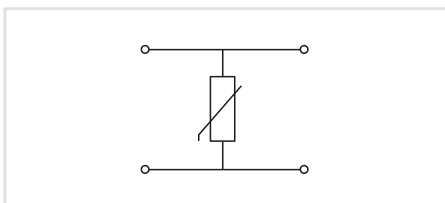
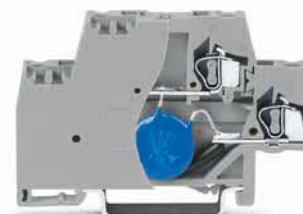
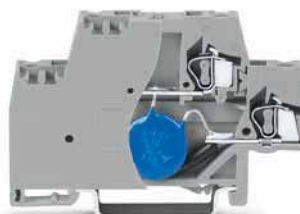


Terminal block, with varistor and end plate		
U_{BN}	Item No.	Pack. Unit
60 VDC	280-504/281-584	25

Terminal block, with varistor and end plate		
U_{BN}	Item No.	Pack. Unit
110 VDC	280-504/281-585	25

Specific Technical Data

Nominal operating voltage U_{BN}	60 VDC	110 VDC
Max. cont. operating voltage U_C	85 VDC	150 VDC
Nominal discharge current (8/20 μ s) per line I_N	1 kA	1 kA
Max. discharge current (8/20 μ s) I_{max}	4.5 kA	4.5 kA
Capacitance	≤ 1.7 nF	≤ 0.8 nF
Voltage protection level (8/20 μ s) U_p	165 VDC	300 VDC



Terminal block, with varistor and end plate		
U_{BN}	Item No.	Pack. Unit
24 VAC	280-504/281-586	25

Terminal block, with varistor and end plate		
U_{BN}	Item No.	Pack. Unit
115 VAC	280-504/281-587	25

Specific Technical Data

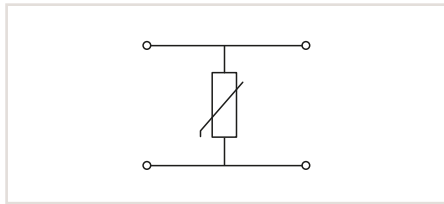
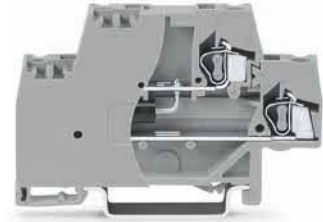
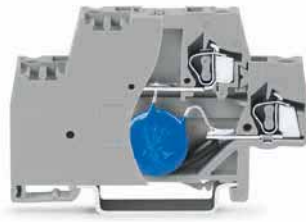
Nominal operating voltage U_{BN}	24 VAC
Max. cont. operating voltage U_c	30 VAC
Nominal discharge current (8/20 μ s) per line I_N	300 A
Max. discharge current (8/20 μ s) I_{max}	1 kA
Capacitance	≤ 3.5 nF
Voltage protection level (8/20 μ s) U_p	93 VAC

Nominal operating voltage U_{BN}	115 VAC
Max. cont. operating voltage U_c	150 VAC
Nominal discharge current (8/20 μ s) per line I_N	1 kA
Max. discharge current (8/20 μ s) I_{max}	4.5 kA
Capacitance	≤ 0.57 nF
Voltage protection level (8/20 μ s) U_p	395 VAC

Nominal operating voltage U_{BN}	115 VAC
Max. cont. operating voltage U_c	150 VAC
Nominal discharge current (8/20 μ s) per line I_N	1 kA
Max. discharge current (8/20 μ s) I_{max}	4.5 kA
Capacitance	≤ 0.57 nF
Voltage protection level (8/20 μ s) U_p	395 VAC

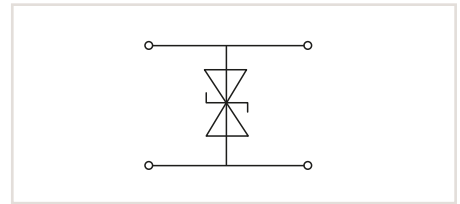
Double-Deck Terminal Blocks with a Surge Suppression Device

280 Series



Terminal block, with varistor and end plate

U_{BN}	Item No.	Pack. Unit
230 VAC	280-504/281-588	25

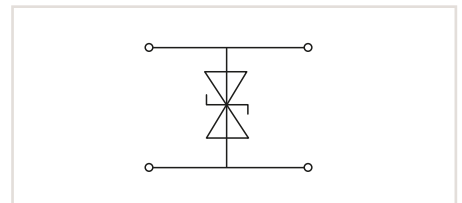
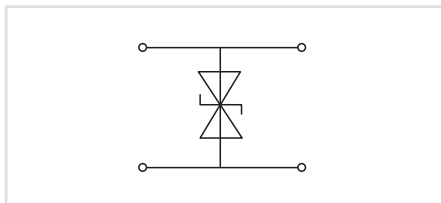
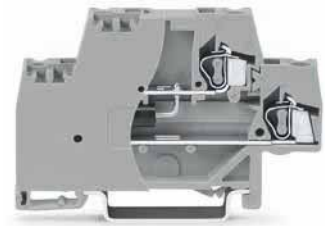
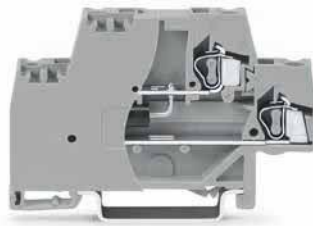


Terminal block, with suppressor diode and end plate

U_{BN}	Item No.	Pack. Unit
24 VDC	280-944/281-589	25

Specific Technical Data

Nominal operating voltage U_{BN}	230 VAC	24 VDC
Max. cont. operating voltage U_C	275 VAC	28 VDC
Nominal discharge current (8/20 μ s) per line I_N	1 kA	169 A
Max. discharge current (8/20 μ s) I_{max}	4.5 kA	
Capacitance	≤ 0.32 nF	≤ 2.7 nF
Voltage protection level (8/20 μ s) U_p	710 VAC	59 VDC



Terminal block, with suppressor diode and end plate		
U_{BN}	Item No.	Pack. Unit
48 VDC	280-944/281-590	25

Terminal block, with suppressor diode and end plate		
U_{BN}	Item No.	Pack. Unit
60 VDC	280-944/281-591	25

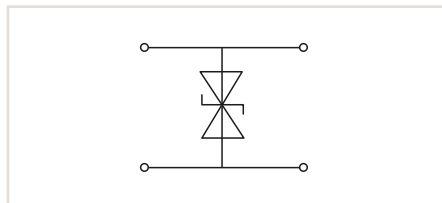
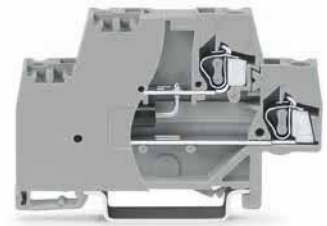
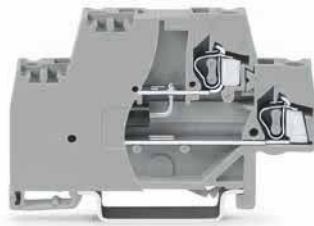
Specific Technical Data

Nominal operating voltage U_{BN}	48 VDC
Max. cont. operating voltage U_c	53 VDC
Nominal discharge current (8/20 μ s) per line I_N	90 A
Capacitance	≤ 1.7 nF
Voltage protection level (8/20 μ s) U_P	111 VDC

Nominal operating voltage U_{BN}	60 VDC
Max. cont. operating voltage U_c	70 VDC
Nominal discharge current (8/20 μ s) per line I_N	69 A
Capacitance	≤ 1.35 nF
Voltage protection level (8/20 μ s) U_P	146 VDC

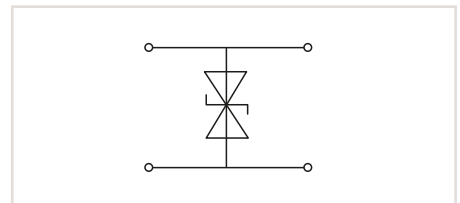
Nominal operating voltage U_{BN}	60 VDC
Max. cont. operating voltage U_c	70 VDC
Nominal discharge current (8/20 μ s) per line I_N	69 A
Capacitance	≤ 1.35 nF
Voltage protection level (8/20 μ s) U_P	146 VDC

Double-Deck Terminal Blocks with a Surge Suppression Device 280 Series



Terminal block, with suppressor diode and end plate

U_{BN}	Item No.	Pack. Unit
110 VDC	280-944/281-592	25

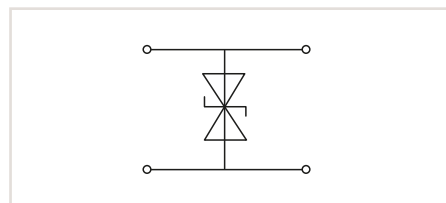
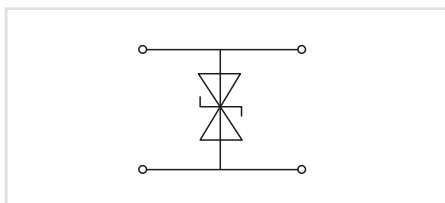
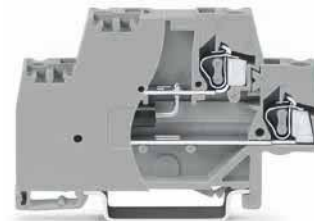
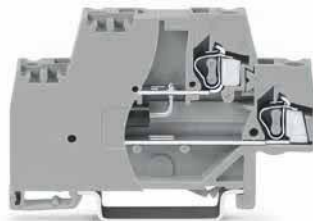


Terminal block, with suppressor diode and end plate

U_{BN}	Item No.	Pack. Unit
24 VAC	280-944/281-593	25

Specific Technical Data

Nominal operating voltage U_{BN}	110 VDC	24 VAC
Max. cont. operating voltage U_C	128 VDC	26 VAC
Nominal discharge current (8/20 μ s) per line I_N	38 A	143 A
Capacitance	≤ 0.85 nF	≤ 2.4 nF
Voltage protection level (8/20 μ s) U_P	265 VDC	70 VAC



Terminal block, with suppressor diode and end plate		
U_{BN}	Item No.	Pack. Unit
115 VAC	280-944/281-594	25

Terminal block, with suppressor diode and end plate		
U_{BN}	Item No.	Pack. Unit
230 VAC	280-944/281-595	25

Specific Technical Data

Nominal operating voltage U_{BN}	115 VAC
Max. cont. operating voltage U_c	133 VAC
Nominal discharge current (8/20 μ s) per line I_N	26 A
Capacitance	≤ 0.63 nF
Voltage protection level (8/20 μ s) U_P	388 VAC

Nominal operating voltage U_{BN}	230 VAC
Max. cont. operating voltage U_c	253 VAC
Nominal discharge current (8/20 μ s) per line I_N	14 A
Capacitance	≤ 0.4 nF
Voltage protection level (8/20 μ s) U_P	706 VAC

Nominal operating voltage U_{BN}	230 VAC
Max. cont. operating voltage U_c	253 VAC
Nominal discharge current (8/20 μ s) per line I_N	14 A
Capacitance	≤ 0.4 nF
Voltage protection level (8/20 μ s) U_P	706 VAC

Accessories

280 Series

End and intermediate plate, 2.5 mm thick



Color	Item No.	Pack. Unit
orange	280-341	100 (4x25)
gray	280-340	100 (4x25)

Insulation stop, 5 pcs/strip



Color	Cross-Sections	Item No.	Pack. Unit
white	0.08 ... 0.2 mm ² "s" (0.14 mm ² "f-st")	280-470	200 (8x25)
light gray	0.25 ... 0.5 mm ²	280-471	200 (8x25)
dark gray	0.75 ... 1 mm ²	280-472	200 (8x25)

Comb-style type jumper bar, insulated, $I_N = I_N$ of terminal block



	Item No.	Pack. Unit
2-way	280-482	200 (8x25)
3-way	280-483	200 (8x25)
10-way	280-490	50 (2x25)

Alternate comb-style jumper bar, insulated, $I_N = I_N$ of terminal block



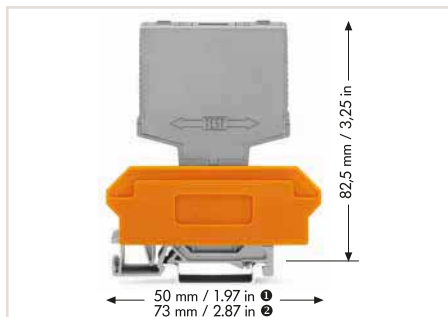
	Item No.	Pack. Unit
2-way	280-492	200 (8x25)

Pluggable Surge Suppression Modules on Carrier Terminal Blocks 286 Series



General Specifications

Nominal current	10 A
Response time between L/N and PE	1 μ s
Response time between L and N	25 ns
Nominal voltage	250 V
Rated impulse voltage	4 kV
Pollution degree	2
Ambient operating temperature	-25 ... +85 °C
Dimensions (mm) W x H x D incl. terminal block	17 x 82.5 x 73 mm
Module width	15 mm / 0.591 inch



Short description:

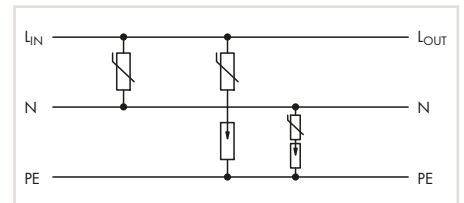
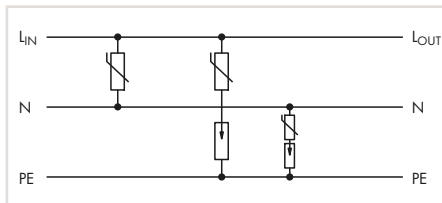
Two- and three-stage pluggable surge suppression modules (286 Series) for data, measurement, control, or power circuits are also available.

Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

Note:

For isolation measurement the ground contact at the transient suppression module must be disconnected.



Surge suppression module for signal circuits, nominal voltage: 24 VAC/DC, for 2 signal paths with common discharge connection, pluggable on Rail-Mount terminal block, 15 mm wide

Surge suppression module for signal circuits, nominal voltage: 115 VAC, for 2 signal paths with common discharge connection, pluggable on rail-mount terminal block, 15 mm wide

U_{BN}	Item No.	Pack. Unit
24 VAC/DC	286-836	1

U_{BN}	U_{max}	Item No.	Pack. Unit
115 VAC	150 VAC	286-835/115-000	1

Specific Technical Data

Nominal operating voltage U_{BN}	24 VAC/DC
Operating voltage U_{max}	35 VAC / 45 VDC
Nominal discharge current between L/N and PE	300 A
Nominal discharge current between L and N	300 A
Max. surge current between L/N and PE	1 kA
Max. surge current between L and N	1 kA
Protection level between L/N and PE	700 V
Protection level between L and N	100 V

115 VAC	150 VAC
1 kA	1 kA
4.5 kA	4.5 kA
1 kV	400 V

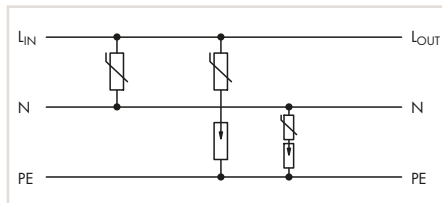
Accessories

WMB marking system, 10 strips with 10 markers per card	Marking	Item No.	Pack. Unit
	F	209-791	5
	1 ... 10	209-702	5
	Lin, N, PE Lout, N, PE, Lin, N, PE	249-655	5

Marking	Item No.	Pack. Unit
F	209-791	5
1 ... 10	209-702	5
Lin, N, PE Lout, N, PE, Lin, N, PE	249-655	5

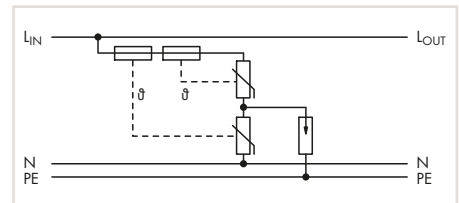
Marking	Item No.	Pack. Unit
F	209-791	5
1 ... 10	209-702	5
Lin, N, PE Lout, N, PE, Lin, N, PE	249-655	5

Pluggable Surge Suppression Modules on Carrier Terminal Blocks 286 Series



Surge suppression module for signal circuits, nominal voltage: 230 VAC, for 2 signal paths with common discharge connection, pluggable on rail-mount terminal block, 15 mm wide

U_{BN}	U_{max}	Item No.	Pack. Unit
230 VAC	275 VAC	286-835	1



Surge suppression module for signal circuits, nominal voltage: 115 VAC, for 2 signal paths with common discharge connection, with optical indication, 15 mm wide

U_{BN}	Item No.	Pack. Unit
115 VAC	286-838/115-000	1

Specific Technical Data

Nominal operating voltage U_{BN}	230 VAC
Operating voltage U_{max}	275 VAC
Nominal discharge current between L/N and PE	1 kA
Nominal discharge current between L and N	1 kA
Max. surge current between L/N and PE	4.5 kA
Max. surge current between L and N	4.5 kA
Protection level between L/N and PE	1.3 kV
Protection level between L and N	700 V

115 VAC
150 VAC
1 kA
1 kA
2.5 kA
2.5 kA
800 V
400 V

115 VAC
150 VAC
1 kA
1 kA
2.5 kA
2.5 kA
800 V
400 V

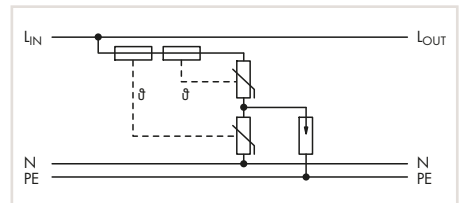
Accessories

WMB marking system, 10 strips with 10 markers per card	Marking	Item No.	Pack. Unit
	F	209-791	5
	1 ... 10	209-702	5
	Lin, N, PE Lout, N, PE, Lin, N, PE	249-655	5

WMB marking system, 10 strips with 10 markers per card	Marking	Item No.	Pack. Unit
	F	209-791	5
	1 ... 10	209-702	5
	Lin, N, PE Lout, N, PE, Lin, N, PE	249-655	5

WMB marking system, 10 strips with 10 markers per card	Marking	Item No.	Pack. Unit
	F	209-791	5
	1 ... 10	209-702	5
	Lin, N, PE Lout, N, PE, Lin, N, PE	249-655	5

10



Surge suppression module for signal circuits, nominal voltage: 230 VAC, for 2 signal paths with common discharge connection, with optical indication, pluggable on rail-mount terminal block, 15 mm wide

U_{BN}	Item No.	Pack. Unit
230 VAC	286-838	1

Specific Technical Data

Nominal operating voltage U_{BN}	230 VAC
Operating voltage U_{max}	300 VAC
Nominal discharge current between L/N and PE	1 kA
Nominal discharge current between L and N	1 kA
Max. surge current between L/N and PE	2.5 kA
Max. surge current between L and N	2.5 kA
Protection level between L/N and PE	1 kV
Protection level between L and N	800 V

Accessories

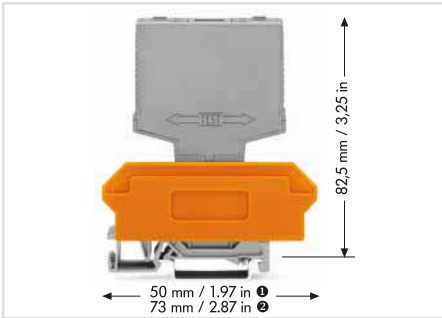
WMB marking system, 10 strips with 10 markers per card	Marking	Item No.	Pack. Unit
	F	209-791	5
	1 ... 10	209-702	5
	Lin, N, PE Lout, N, PE, Lin, N, PE	249-655	5

Pluggable Surge Suppression Modules for Carrier Terminal Blocks 286 Series



General Specifications

Ambient operating temperature	-25 ... +85 °C
Dimensions (mm) W x H x D	Module width* x 50 x 51
* Type-dependent	



Short description:

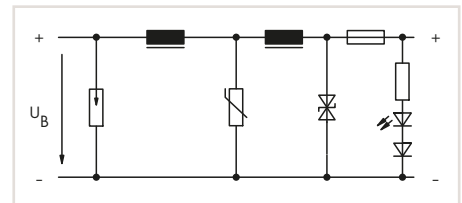
Two- and three-stage pluggable surge suppression modules (286 Series) for data, measurement, control, or power circuits are also available.

Features:

- Protect your system against overvoltage
- Slim, space-saving design
- Control operational costs by preventing expensive, unplanned downtime
- High operational reliability and system uptime

Note:

For isolation measurement the ground contact at the transient suppression module must be disconnected.



Surge suppression module for signal circuits, nominal voltage 24 VDC, for 1 signal path, plugged on rail-mount terminal block, module width 20 mm

U_{BN}	Item No.	Pack. Unit
24 VDC	286-833	1

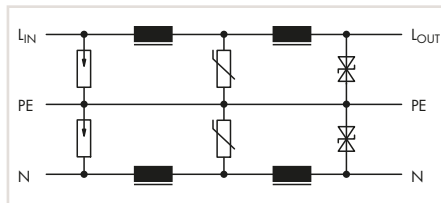
Specific Technical Data

Nominal operating voltage U_{BN}	24 VDC
Operating voltage U_{max}	30 VDC
Nominal current	0.1 A
Nominal discharge current between L and N	5 kA
Max. surge current between L and N	5 kA
Protection level between L and N	≤ 59 V
Response time between L and N	≤ 10 ns
Through resistance / inductivity	20 m Ω / 2 x 7 μ H

Accessories

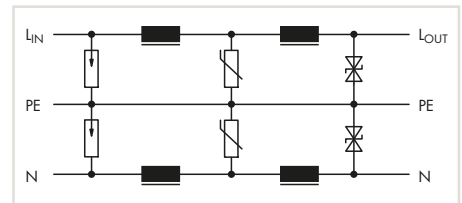
WMB marking system, 10 strips with 10 markers per card	Marking	Item No.	Pack. Unit
	F	209-791	5
	1 ... 10	209-702	5
	+/-	209-652	5
	Lin, PE, PE, N, Lout, PE, PE, N	249-652	5
Carrier terminal block	Width	Item No.	Pack. Unit
with 2-conductor terminals blocks, orange separator ①	22 mm	280-638	1
with 4-conductor terminals blocks, orange separator ②	22 mm	280-628	1
with 4-conductor terminals blocks, marker plate ②	25 mm	280-764	1
Conductor range: 0.08 ... 2.5 mm ² / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch			

Pluggable Surge Suppression Modules for Carrier Terminal Blocks 286 Series



Surge suppression module for signal circuits, nominal voltage 12 VDC, for 2 signal paths with common discharge connection, module width 20 mm

U_{BN}	Item No.	Pack. Unit
12 VDC	286-834	1



Surge suppression module for signal circuits, nominal voltage 24 VDC, for 2 signal paths with common discharge connection, plugged on rail-mount terminal block, module width 20 mm

U_{BN}	Item No.	Pack. Unit
24 VDC	286-834/024-000	1

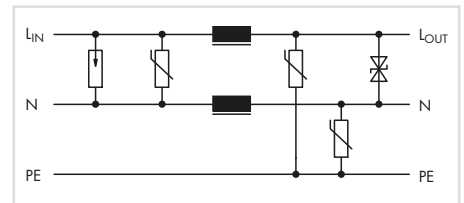
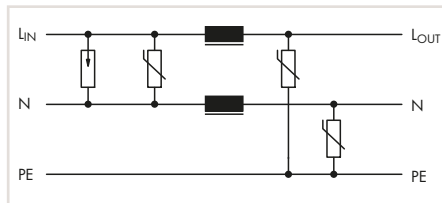
Specific Technical Data

Parameter	12 VDC	24 VDC
Nominal operating voltage U_{BN}	12 VDC	24 VDC
Operating voltage U_{max}	14 VDC	30 VDC
Nominal current	6 A	6 A
Nominal discharge current between L/N and PE	1.5 kA	1.5 kA
Max. surge current between L/N and PE	1.5 kA	1.5 kA
Protection level between L/N and PE	≤ 22 V	≤ 59 V
Response time between L/N and PE	≤ 10 ns	≤ 10 ns
Through resistance / inductivity	50 m Ω / 14 μ H	50 m Ω / 14 μ H

10

Accessories

Accessories	Marking	Item No.	Pack. Unit
WMB marking system, 10 strips with 10 markers per card	F	209-791	5
	1 ... 10	209-702	5
	+/-	209-652	5
	Lin, PE, PE, N, Lout, PE, PE, N	249-652	5
Carrier terminal block	Width	Item No.	Pack. Unit
with 2-conductor terminals blocks, orange separator ①	22 mm	280-638	1
with 4-conductor terminals blocks, orange separator ②	22 mm	280-628	1
with 4-conductor terminals blocks, marker plate ②	25 mm	280-764	1
Conductor range: 0.08 ... 2.5 mm ² / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch			



Surge suppression module for signal circuits, nominal voltage 24 VAC/DC, for 2 signal paths with common discharge connection, plugged on rail-mount terminal block, module width 20 mm

Surge suppression module for signal circuits, nominal voltage 24 VAC/DC, for 2 signal paths with common discharge connection, plugged on rail-mount terminal block, module width 20 mm

U _{BN}	Item No.	Pack. Unit
24 VAC/DC	286-831	1

U _{BN}	Item No.	Pack. Unit
24 VAC/DC	286-832	1

Specific Technical Data

Nominal operating voltage U _{BN}	24 VAC/DC
Operating voltage U _{rmax}	30 VAC / 38 VDC
Nominal current	6 A
Nominal voltage	250 V
Rated impulse voltage	4 kV
Pollution degree	2
Nominal discharge current between L/N and PE	200 A
Nominal discharge current between L and N	1.5 kA
Max. surge current between L and N	1.5 kA
Max. surge current between L/N and PE	500 A
Protection level between L/N and PE	≤ 93 V
Protection level between L and N	≤ 93 V
Response time between L/N and PE	≤ 25 ns
Response time between L and N	≤ 25 ns
Through resistance / inductivity	25 mΩ / 2 x 7 μH

Nominal operating voltage U _{BN}	24 VAC/DC
Operating voltage U _{rmax}	30 VAC / 38 VDC
Nominal current	6 A
Nominal voltage	250 V
Rated impulse voltage	4 kV
Pollution degree	2
Nominal discharge current between L/N and PE	200 A
Nominal discharge current between L and N	1.5 kA
Max. surge current between L and N	1.5 kA
Max. surge current between L/N and PE	500 A
Protection level between L/N and PE	≤ 93 V
Protection level between L and N	≤ 59 V
Response time between L/N and PE	≤ 25 ns
Response time between L and N	≤ 5 ns
Through resistance / inductivity	25 mΩ / 2 x 7 μH

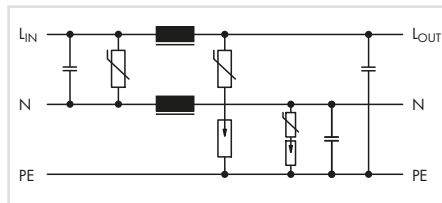
Accessories

WMB marking system, 10 strips with 10 markers per card	Marking	Item No.	Pack. Unit
	F	209-791	5
	1 ... 10	209-702	5
	PE, N, Lin, PE, N, Lout	209-911	5
Carrier terminal block*	Width	Item No.	Pack. Unit
with 2-conductor terminals blocks, orange separator ①	22 mm	280-638	1
with 4-conductor terminals blocks, orange separator ②	22 mm	280-628	1
with 4-conductor terminals blocks, marker plate ③	25 mm	280-764	1
Conductor range: 0.08 ... 2.5 mm ² / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch			

WMB marking system, 10 strips with 10 markers per card	Marking	Item No.	Pack. Unit
	F	209-791	5
	1 ... 10	209-702	5
	PE, N, Lin, PE, N, Lout	209-911	5
Carrier terminal block*	Width	Item No.	Pack. Unit
with 2-conductor terminals blocks, orange separator ①	22 mm	280-638	1
with 4-conductor terminals blocks, orange separator ②	22 mm	280-628	1
with 4-conductor terminals blocks, marker plate ③	25 mm	280-764	1
Conductor range: 0.08 ... 2.5 mm ² / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch			

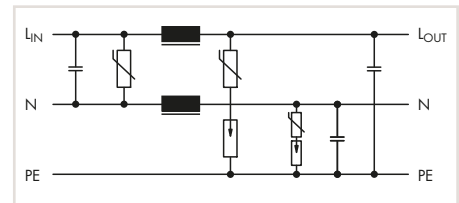
WMB marking system, 10 strips with 10 markers per card	Marking	Item No.	Pack. Unit
	F	209-791	5
	1 ... 10	209-702	5
	PE, N, Lin, PE, N, Lout	209-911	5
Carrier terminal block*	Width	Item No.	Pack. Unit
with 2-conductor terminals blocks, orange separator ①	22 mm	280-638	1
with 4-conductor terminals blocks, orange separator ②	22 mm	280-628	1
with 4-conductor terminals blocks, marker plate ③	25 mm	280-764	1
Conductor range: 0.08 ... 2.5 mm ² / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch			

Pluggable Surge Suppression Modules for Carrier Terminal Blocks 286 Series



Surge suppression module for signal circuits, nominal voltage 110 VDC, for 2 signal paths with common discharge connection, 2-stage, plugged on rail-mount terminal block, module width 25 mm

Item No.	Pack. Unit
286-844	1



Surge suppression module for signal circuits, nominal voltage 220 VDC, for 2 signal paths with common discharge connection, 2-stage, pluggable on rail-mount terminal block, module width 25 mm

Item No.	Pack. Unit
286-841	1

Specific Technical Data

Nominal operating voltage U_{BN}	110 VDC
Operating voltage U_{max}	180 VDC
Nominal current	6 A
Nominal voltage	250 V
Rated impulse voltage	4 kV
Pollution degree	2
Nominal discharge current between L/N and PE	600 A
Nominal discharge current between L and N	600 A
Max. surge current between L and N	1.5 kA
Max. surge current between L/N and PE	1.5 kA
Protection level between L/N and PE	≤ 900 V
Protection level between L and N	≤ 650 V
Response time between L/N and PE	≤ 1 μ s
Response time between L and N	≤ 25 ns
Through resistance / inductivity	- / 2 x 0.8 mH

Nominal operating voltage U_{BN}	220 VDC
Operating voltage U_{max}	320 VDC
Nominal current	6 A
Nominal voltage	250 V
Rated impulse voltage	4 kV
Pollution degree	2
Nominal discharge current between L/N and PE	600 A
Nominal discharge current between L and N	600 A
Max. surge current between L and N	1.5 kA
Max. surge current between L/N and PE	1.5 kA
Protection level between L/N and PE	≤ 900 V
Protection level between L and N	≤ 650 V
Response time between L/N and PE	≤ 1 μ s
Response time between L and N	≤ 25 ns
Through resistance / inductivity	- / 2 x 0.8 mH

Nominal operating voltage U_{BN}	220 VDC
Operating voltage U_{max}	320 VDC
Nominal current	6 A
Nominal voltage	250 V
Rated impulse voltage	4 kV
Pollution degree	2
Nominal discharge current between L/N and PE	600 A
Nominal discharge current between L and N	600 A
Max. surge current between L and N	1.5 kA
Max. surge current between L/N and PE	1.5 kA
Protection level between L/N and PE	≤ 900 V
Protection level between L and N	≤ 650 V
Response time between L/N and PE	≤ 1 μ s
Response time between L and N	≤ 25 ns
Through resistance / inductivity	- / 2 x 0.8 mH

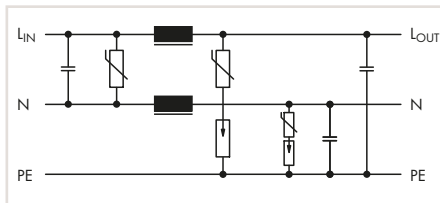
Accessories

WMB marking system, 10 strips with 10 markers per card	Marking	Item No.	Pack. Unit
	F	209-791	5
	1 ... 10	209-702	5
	PE, N, Lin, PE, N, Lout	209-911	5
Carrier terminal block	Width	Item No.	Pack. Unit
with 2-conductor terminals blocks, orange separator ①	27 mm	280-639	1
with 4-conductor terminals blocks, orange separator ②	27 mm	280-629	1
with 4-conductor terminals blocks, marker plate ③	30 mm	280-765	1
Conductor range: 0.08 ... 2.5 mm ² / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch			

WMB marking system, 10 strips with 10 markers per card	Marking	Item No.	Pack. Unit
	F	209-791	5
	1 ... 10	209-702	5
	PE, N, Lin, PE, N, Lout	209-911	5
Carrier terminal block	Width	Item No.	Pack. Unit
with 2-conductor terminals blocks, orange separator ①	27 mm	280-639	1
with 4-conductor terminals blocks, orange separator ②	27 mm	280-629	1
with 4-conductor terminals blocks, marker plate ③	30 mm	280-765	1
Conductor range: 0.08 ... 2.5 mm ² / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch			

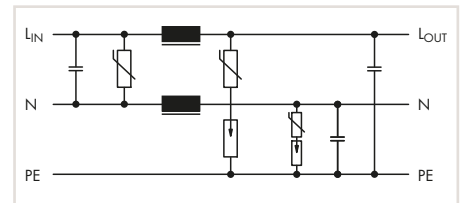
WMB marking system, 10 strips with 10 markers per card	Marking	Item No.	Pack. Unit
	F	209-791	5
	1 ... 10	209-702	5
	PE, N, Lin, PE, N, Lout	209-911	5
Carrier terminal block	Width	Item No.	Pack. Unit
with 2-conductor terminals blocks, orange separator ①	27 mm	280-639	1
with 4-conductor terminals blocks, orange separator ②	27 mm	280-629	1
with 4-conductor terminals blocks, marker plate ③	30 mm	280-765	1
Conductor range: 0.08 ... 2.5 mm ² / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch			

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Surge suppression module for signal circuits, nominal voltage 115 VAC, for 2 signal paths with common discharge connection, 2-stage, pluggable on rail-mount terminal block, module width 25 mm

Item No.	Pack. Unit
286-843	1



Surge suppression module for signal circuits, nominal voltage 230 VAC, for 2 signal paths with common discharge connection, 2-stage, pluggable on rail-mount terminal block, module width 25 mm

Item No.	Pack. Unit
286-842	1

Specific Technical Data

Nominal operating voltage U_{BN}	115 VAC
Operating voltage U_{max}	140 VAC
Nominal current	6 A
Nominal voltage	250 V
Rated impulse voltage	4 kV
Pollution degree	2
Nominal discharge current between L/N and PE	600 A
Nominal discharge current between L and N	600 A
Max. surge current between L and N	1.5 kA
Max. surge current between L/N and PE	1.5 kA
Protection level between L/N and PE	≤ 900 V
Protection level between L and N	≤ 650 V
Response time between L/N and PE	≤ 1 μ s
Response time between L and N	≤ 25 ns
Through resistance / inductivity	- / 2×0.8 mH

Nominal operating voltage U_{BN}	230 VAC
Operating voltage U_{max}	250 VAC
Nominal current	6 A
Nominal voltage	250 V
Rated impulse voltage	4 kV
Pollution degree	2
Nominal discharge current between L/N and PE	600 A
Nominal discharge current between L and N	600 A
Max. surge current between L and N	1.5 kA
Max. surge current between L/N and PE	1.5 kA
Protection level between L/N and PE	≤ 900 V
Protection level between L and N	≤ 650 V
Response time between L/N and PE	≤ 1 μ s
Response time between L and N	≤ 25 ns
Through resistance / inductivity	- / 2×0.8 mH

Accessories




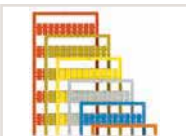








WMB marking system, 10 strips with 10 markers per card	Marking	Item No.	Pack. Unit
	F	209-791	5
	1 ... 10	209-702	5
	PE, N, Lin, PE, N, Lout	209-911	5
Carrier terminal block	Width	Item No.	Pack. Unit
with 2-conductor terminals blocks, orange separator ①	27 mm	280-639	1
with 4-conductor terminals blocks, orange separator ②	27 mm	280-629	1
with 4-conductor terminals blocks, marker plate ③	30 mm	280-765	1
Conductor range: 0.08 ... 2.5 mm ² / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch			

WMB marking system, 10 strips with 10 markers per card	Marking	Item No.	Pack. Unit
	F	209-791	5
	1 ... 10	209-702	5
	PE, N, Lin, PE, N, Lout	209-911	5
Carrier terminal block	Width	Item No.	Pack. Unit
with 2-conductor terminals blocks, orange separator ①	27 mm	280-639	1
with 4-conductor terminals blocks, orange separator ②	27 mm	280-629	1
with 4-conductor terminals blocks, marker plate ③	30 mm	280-765	1
Conductor range: 0.08 ... 2.5 mm ² / 28 ... 14 AWG; Strip length: 8 ... 9 mm / 0.31 ... 0.35 inch			



Accessories and Tools

Shield Connection Systems, Marking Systems, Accessories and Tools

		Page
	Shield Clamping Saddles	790 Series 595
	Shield Clamping Saddle with Latching Spring	790 Series 597
	Busbar Carriers	790 Series 602
	Marking Systems	606
	End Stops for DIN-35 and DIN-15 Rails	613
	Carrier Rails, Collective Jumper Carriers and Rail-Mount Terminal Block Covers	614
	Operating Tools	620
	Stripping Tools	624
	Crimping Tools for Ferrules	625
	Cable Cutter	625
	Test and Measurement Devices	630
	General Test Accessories	632

Shield Connection System, 790 Series Description and Installation



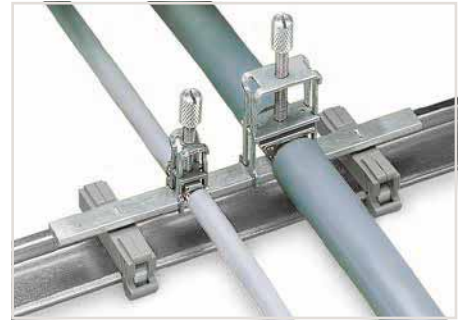
Carrier with grounding foot* (790-113)
45 mm long, busbar 90° to the rail

* for all sizes of shield clamping saddles



Carrier with grounding foot* (790-114)
45 mm long, busbar parallel to the rail

* for all sizes of shield clamping saddles



Carrier with grounding foot* (790-115),
125 mm long, busbar parallel to the rail

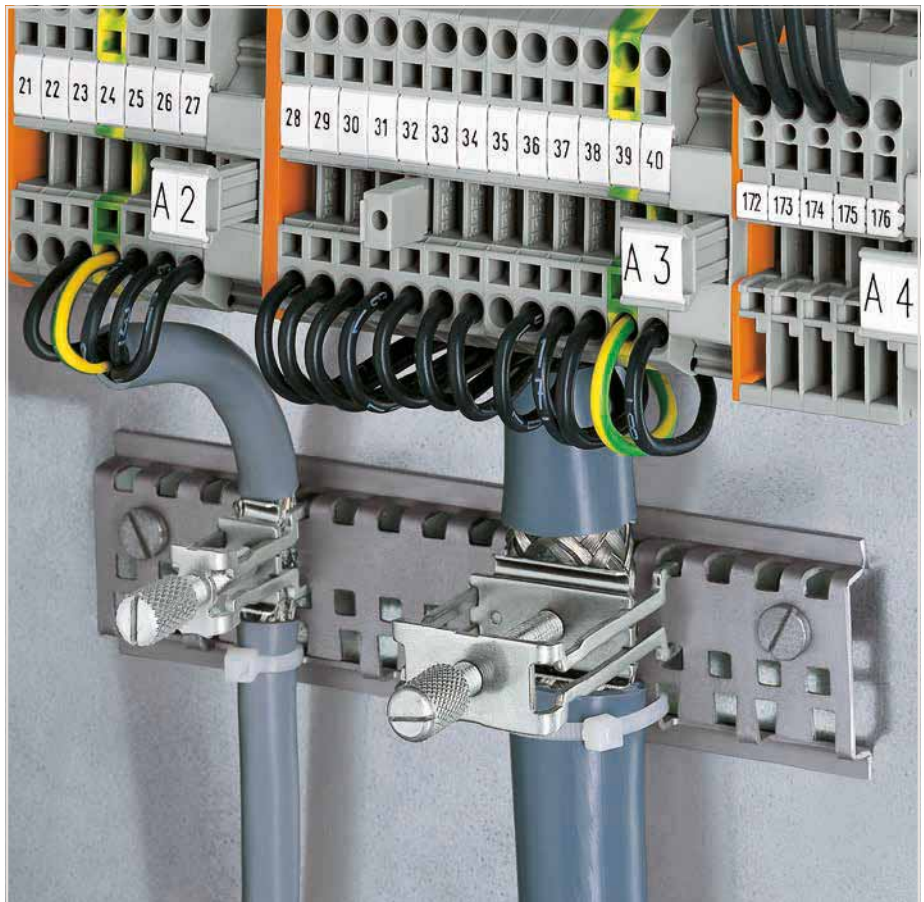
* for all sizes of shield clamping saddles



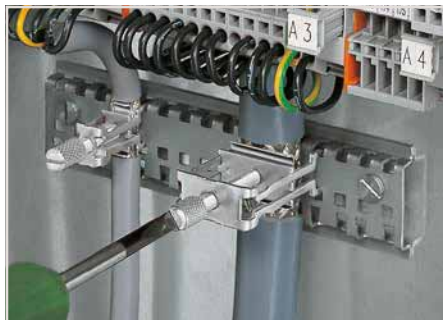
Fitting spacer sleeve to a specialty slotted carrier rail.



Fitting an additional clamping saddle.



Tightening/removing a shield clamping saddle.



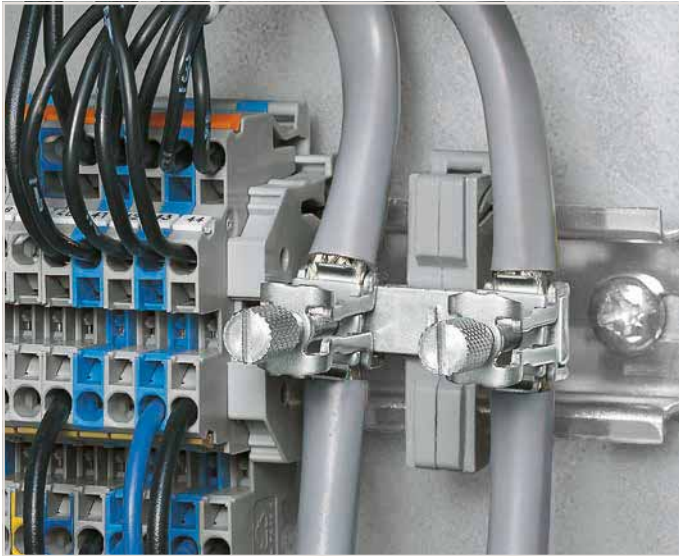
After connection, tighten the knurled screw to complete the installation.
Recommended tightening torque: 0.5 Nm



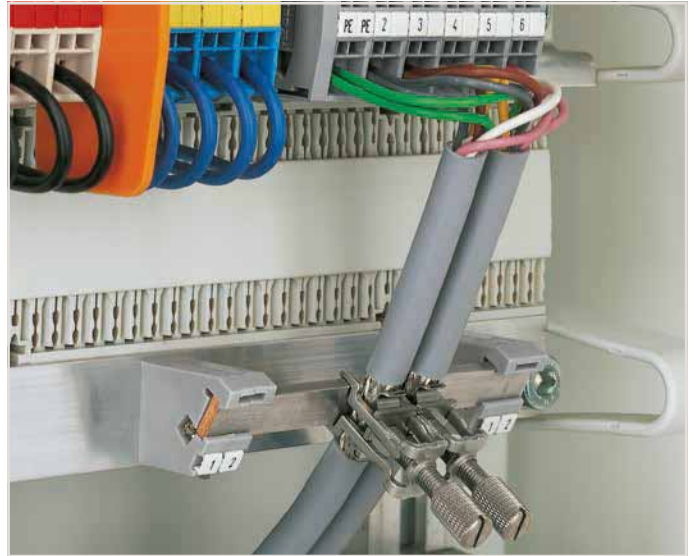
To remove the clamping saddle, unscrew until ratcheted mechanism is released, then slightly tip saddle and remove the clamping saddle.

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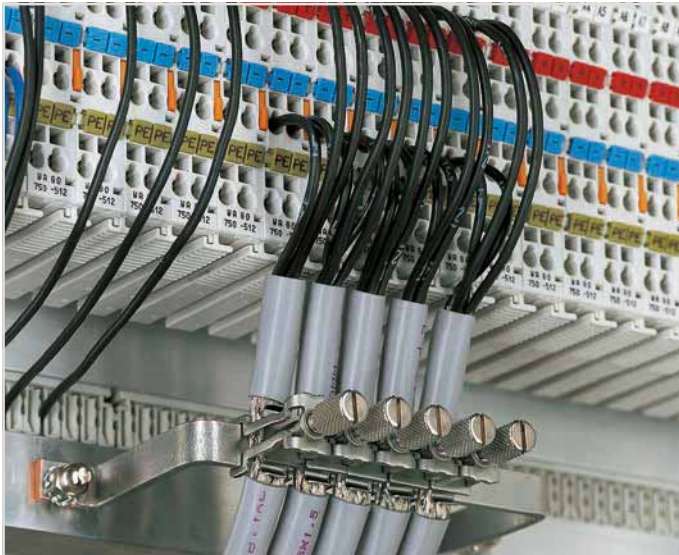
Shield Connection System, 790 Series Installation



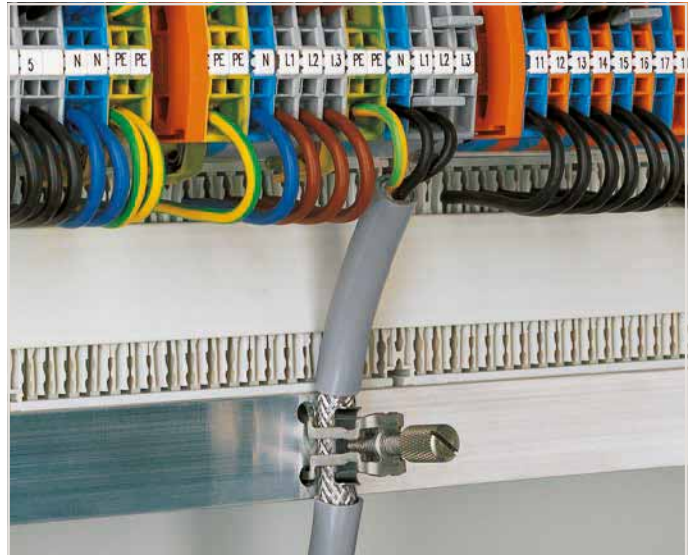
Carrier with grounding foot, busbar parallel to the rail



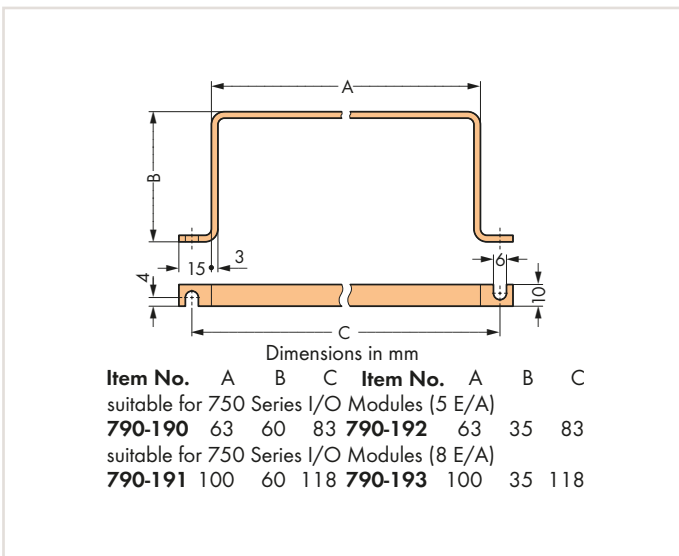
Insulated mounting carriers for a common shield reference potential, independent of housing potential



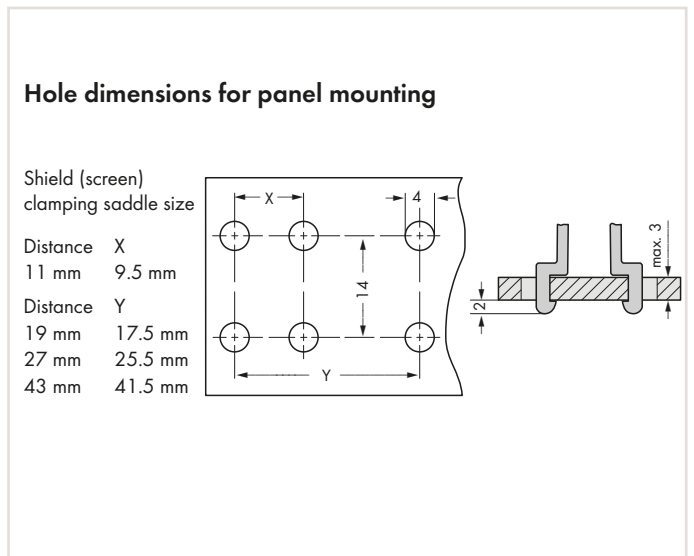
U-shaped (10 x 3) mm copper busbar



Snap shield clamping saddles into any metal plate (max. thickness 3 mm).



Dimensions in mm



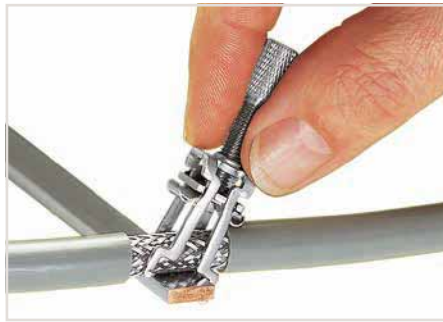
Additionally, the spring material is part of the clamping saddle, providing a good electrical connection (the system also acts as a partial strain relief). The spring element integrated in the shield clamping saddle compensates deformation and settling that results from a connected shield.

Shield Connection System, 790 Series Installation



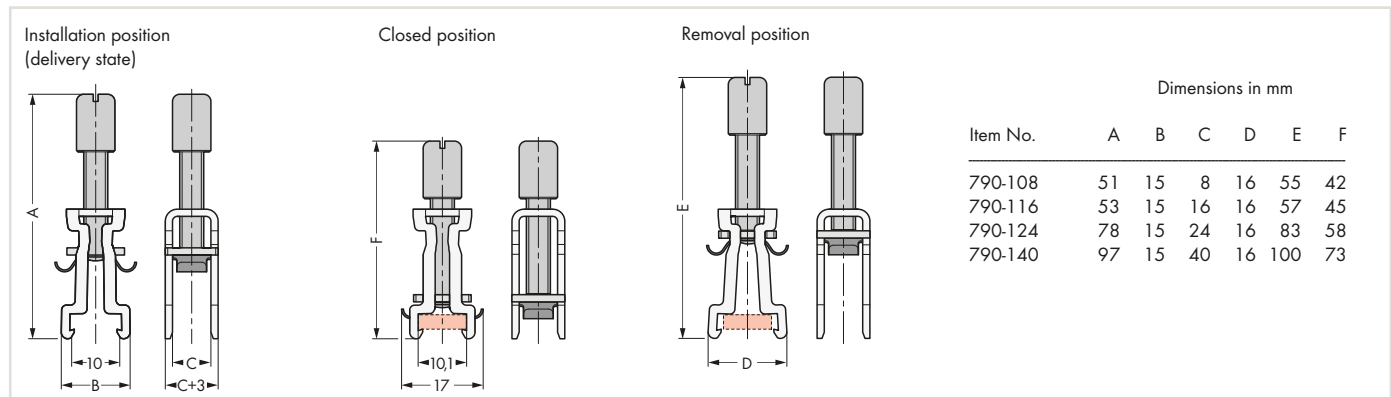
Assembly:

The shield clamping saddle is shipped ready for direct connection to the (10 x 3) mm busbar or to a drilled mounting plate. After connection, tighten the knurled screw to complete the installation.
Maximum tightening torque: 0.5 Nm

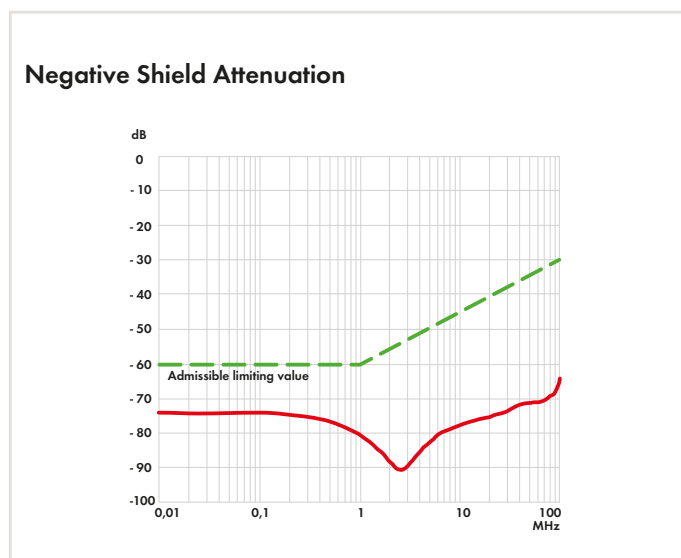


Removal:

To remove the clamping saddle, unscrew until ratcheted mechanism is released, then slightly tip saddle and remove the clamping saddle.



Dimensions in mm



WAGO's shield connection system is highly efficient because the clamping unit can be brought very close to the unshielded part of the cable.

Shield Clamping Saddles 790 Series



Shield clamping saddle, 11 mm wide, max. shield diameter of 8 mm
Note: Cannot be used for connecting ground conductors!

	Item No.	Pack. Unit
	790-108	50 (10)



Shield clamping saddle, 19 mm wide, 7 ... 16 mm shield diameter
Note: Cannot be used for connecting ground conductors!

	Item No.	Pack. Unit
	790-116	50 (10)



Shield clamping saddle, 27 mm wide, 6 ... 24 mm shield diameter
Note: Cannot be used for connecting ground conductors!

	Item No.	Pack. Unit
	790-124	50 (10)



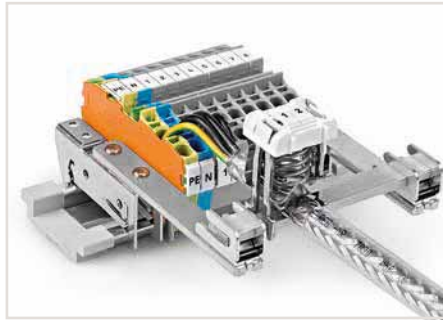
Shield clamping saddle, 43 mm wide, 22 ... 40 mm shield diameter
Note: Cannot be used for connecting ground conductors!

	Item No.	Pack. Unit
	790-140	50 (10)

Spring-Equipped Shield Clamping Saddle, 790 Series Installation



Shield clamping saddles are available in three different sizes for shield diameters ranging from 3 to 20 mm.



Application example



Compress the clamping saddle until fully engaged.



Mounting a clamping saddle on a specially slotted carrier rail (790-145).
When releasing the saddle, do not place your finger under the clamping spring!



Removing the shield clamping saddle.



Shield clamping saddle contacts shield conductor and specially slotted carrier rail (790-145).



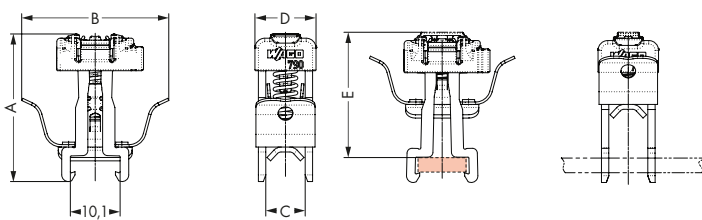
Labelling using a marking strip.



Labelling using WMB markers.

Delivery position

Mounting position



Dimensions in mm

Dimensions in mm

Item No.	A	B	C	D	E*
790-208	30	29.9	8	12.4	25.8
790-216	34.6	28.3	16	21.8	30.2
790-220	45.6	28.3	24	30	41.2

*Height with WMB marker

Spring-Equipped Shield Clamping Saddle 790 Series



Shield clamping saddle, 12.4 mm wide, 3 ... 8 mm shield diameter
Note: Cannot be used for connecting ground conductors and strain relief!

Item No.	Pack. Unit
790-208	50



Shield clamping saddle, 21.8 mm wide, 6 ... 16 mm shield diameter
Note: Cannot be used for connecting ground conductors and strain relief!

Item No.	Pack. Unit
790-216	25



Shield clamping saddle, 27 mm wide, 6 ... 20 mm shield diameter
Note: Cannot be used for connecting ground conductors and strain relief!

Item No.	Pack. Unit
790-220	25

Shield Clamps and Shield Termination 791 and 709 Series



Insert the shield termination in the female connector using the operating tool

Shield clamp, 10 ... 17 mm shield diameter, max. 63 mm high, 23 mm wide
Note: Cannot be used for connecting ground conductors!

Item No.	Pack. Unit
791-117	50

Shield termination, includes cable ties for 5 mm and 10 mm shield diameter

Item No.	Pack. Unit
709-350	100 (25)

Shield clamp, 1.5 ... 6.5 mm shield diameter, max. 40 mm high, 10 mm wide
Note: Cannot be used for connecting ground conductors!

Item No.	Pack. Unit
791-107	50

Shield termination, includes cable ties for 5 mm and 10 mm shield diameter

Item No.	Pack. Unit
709-352	100 (25)



Fit the shield termination to the shield cable.

Shield clamp, 5 ... 11 mm shield diameter, max. 47 mm high, 17 mm wide
Note: Cannot be used for connecting ground conductors!

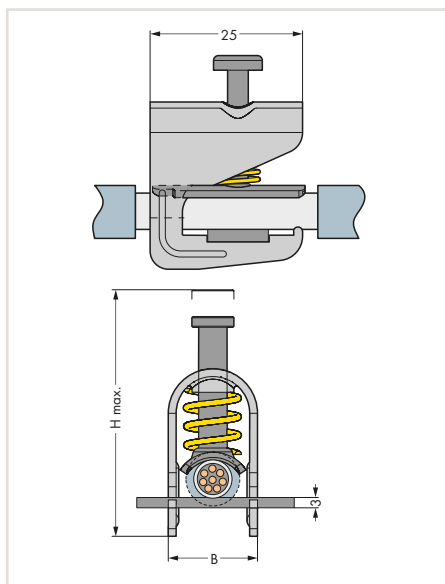
Item No.	Pack. Unit
791-111	50

Shield clamp, 16 ... 24 mm shield diameter, max. 78 mm high, 30 mm wide
Note: Cannot be used for connecting ground conductors!

Item No.	Pack. Unit
791-124	50



Secure both shield cable and shield termination to the strain relief plate using cable ties.



Dimensions in mm



Shield termination connected to an X-COM® female plug

Accessories for Shield Connection Systems



Carrier with grounding foot, busbar parallel to the rail, 15 mm long, for (10 x 3) mm copper busbars, for shield clamping saddles (790-108)

Item No.	Pack. Unit
790-110	25



Carrier with grounding foot, busbar parallel to the rail, 25 mm long, for (10 x 3) mm copper busbars, for shield clamping saddles (790-108, 790-116) and shield clamps (791-111, 791-117)

Item No.	Pack. Unit
790-112	25



Carrier with grounding foot, busbar 90° to rail, 45 mm long, for (10 x 3) mm copper busbars, for shield clamping saddles (790 Series)

Item No.	Pack. Unit
790-113	25



Carrier with grounding foot, busbar parallel to the rail, 45 mm long, for (10 x 3) mm copper busbars, for shield clamping saddles (790 Series) and shield clamps (791 Series)

Item No.	Pack. Unit
790-114	25



Carrier with two grounding feet, busbar parallel to the rail, 125 mm long, for (10 x 3) mm copper busbars

Item No.	Pack. Unit
790-115	25



Busbar, tin-plated, 1000 mm long, copper (10 x 3) mm, I_N 140 A

Item No.	Pack. Unit
210-133	1



Busbar, tin-plated, 30 mm long, copper (10 x 3) mm

Item No.	Pack. Unit
790-133	20



Busbar, tin-plated, 50 mm long, copper (10 x 3) mm

Item No.	Pack. Unit
790-134	20



Carrier rail, specialty slotted, 1000 mm long, tin-plated

Item No.	Pack. Unit
790-145	1



Spacer sleeve, for carrier rail, for M5-size screw, specialty slotted

Item No.	Pack. Unit
790-144	200 (100)

Accessories for Shield Connection Systems



Insulated mounting foot, for busbar with M4 x 8 mm screw		
Color	Item No.	Pack. Unit
gray	790-100	50 (25)



Insulated mounting foot, for busbar with (3.5 x 9) mm sheet metal screw		
Color	Item No.	Pack. Unit
gray	790-101	50 (25)



U-shaped busbar, copper (10 x 3) mm, for 750 Series I/O modules		
	Item No.	Pack. Unit
for 5 I/O	790-190	25 (5)



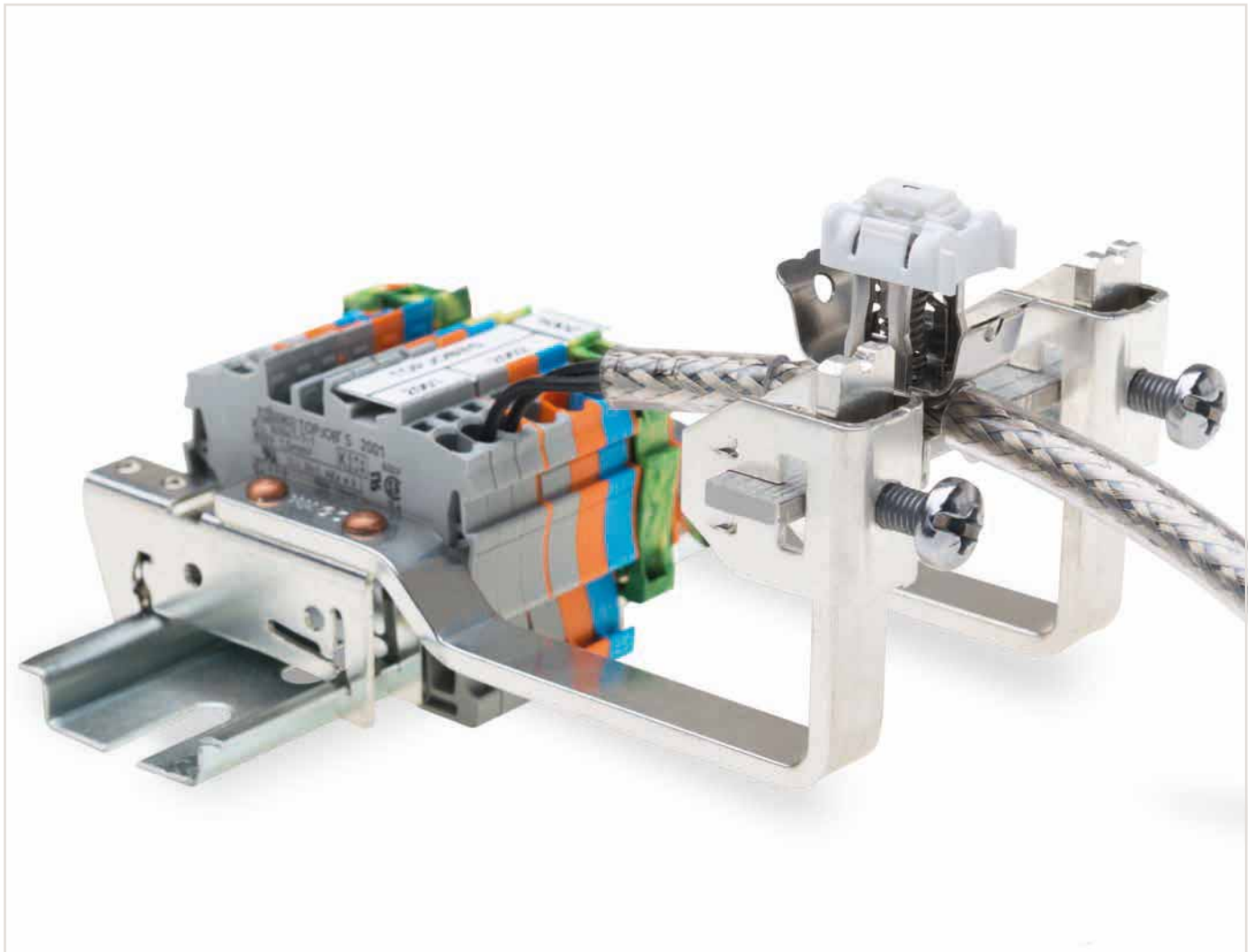
U-shaped busbar, copper (10 x 3) mm, for 750 Series I/O modules		
	Item No.	Pack. Unit
for 8 I/O	790-191	25



U-shaped busbar, copper (10 x 3) mm, for 750 Series I/O modules		
	Item No.	Pack. Unit
for 5 I/O	790-192	25



U-shaped busbar, copper (10 x 3) mm, for 750 Series I/O modules		
	Item No.	Pack. Unit
for 8 I/O	790-193	25

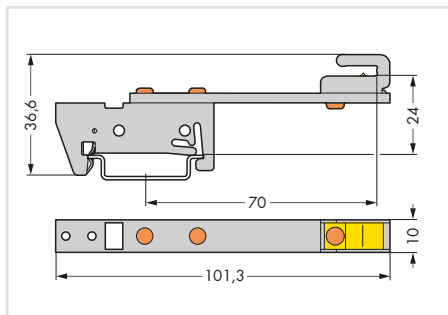


Busbar Carriers

790 Series



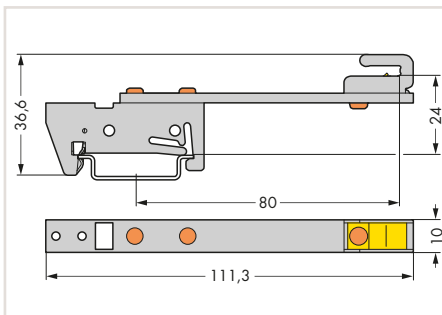
Dimensions in mm



Busbar carrier, for (10 x 3) mm copper busbars, single side, straight, 70 mm between center of DIN-rail and busbar carrier

Item No.	Pack. Unit
790-300	10

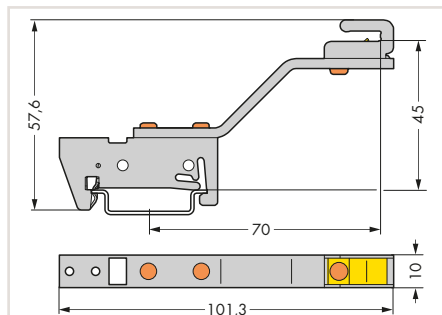
Dimensions in mm



Busbar carrier, for (10 x 3) mm copper busbars, single side, straight, 80 mm between center of DIN-rail and busbar carrier

Item No.	Pack. Unit
790-302	10

Dimensions in mm



Busbar carrier, for (10 x 3) mm copper busbars, single side, angled, 70 mm between center of DIN-rail and busbar carrier

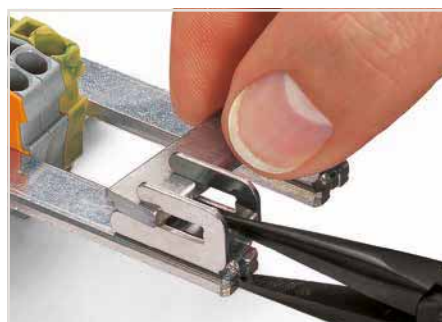
Item No.	Pack. Unit
790-301	10



Placing the busbar in the busbar carrier.



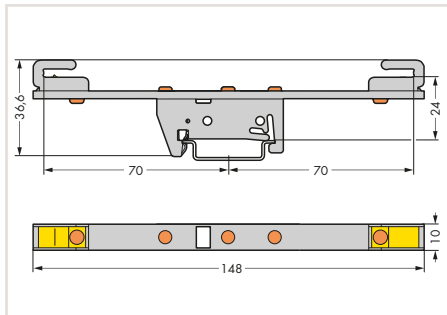
Remove the busbar carrier using an operating tool (type 3, 5.5 x 0.8 mm blade).



To remove the busbar, compress the spring using pliers.



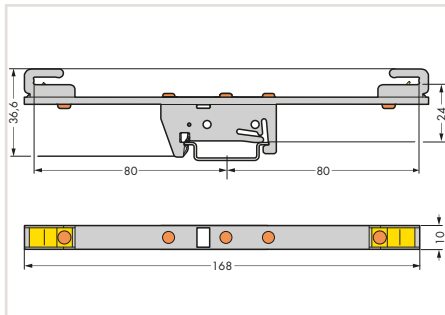
Dimensions in mm



Busbar carrier, for (10 x 3) mm copper busbars, both sides, straight, 70 mm between center of DIN-rail and busbar carrier

Item No.	Pack. Unit
790-310	10

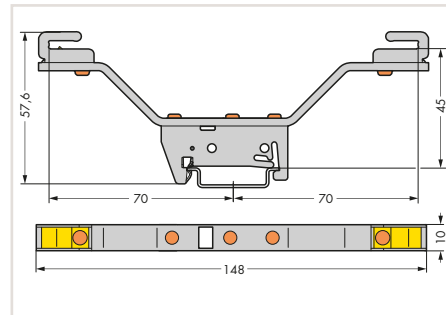
Dimensions in mm



Busbar carrier, for (10 x 3) mm copper busbars, both sides, straight, 80 mm between center of DIN-rail and busbar carrier

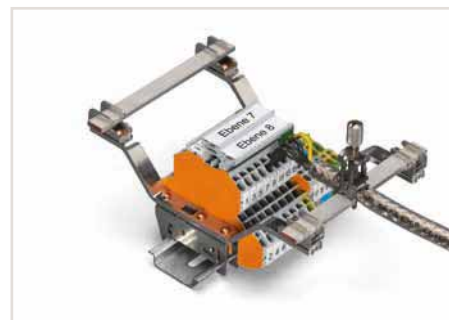
Item No.	Pack. Unit
790-312	10

Dimensions in mm



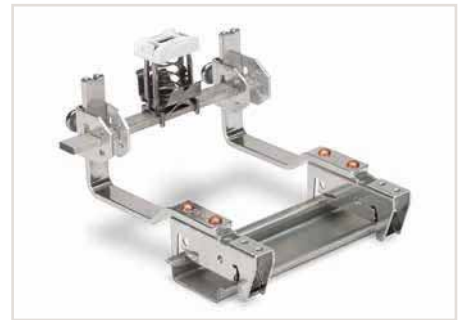
Busbar carrier, for (10 x 3) mm copper busbars, both sides, angled, 70 mm between center of DIN-rail and busbar carrier

Item No.	Pack. Unit
790-311	10



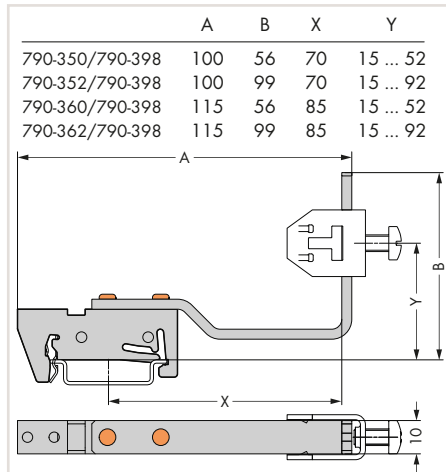
Application example

Busbar carrier with a T-connector (Flexible) and T-connector 790 Series

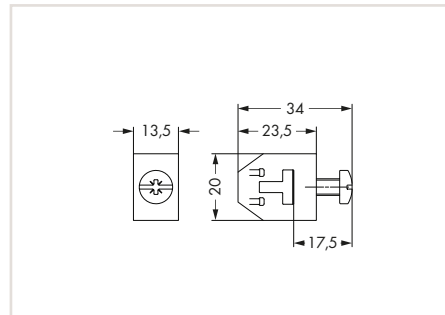


Horizontal mounting position of the busbar

Dimensions in mm



Dimensions in mm



Vertical mounting position of the busbar

Busbar carrier with a T-connector, flexible, for (10 x 3) mm copper busbars, 70 mm between center of DIN-rail and busbar carrier, 56 mm high

Item No.	Pack. Unit
790-350/790-398	12

T-connector, connects two (10 x 3) mm copper busbars

Item No.	Pack. Unit
790-398	10

Busbar carrier with a T-connector, flexible, for (10 x 3) mm copper busbars, 70 mm between center of DIN-rail and busbar carrier, 99 mm high

Item No.	Pack. Unit
790-352/790-398	12

Busbar carrier with a T-connector, flexible, for (10 x 3) mm copper busbars, 85 mm between center of DIN-rail and busbar carrier, 56 mm high

Item No.	Pack. Unit
790-360/790-398	12

Busbar carrier with a T-connector, flexible, for (10 x 3) mm copper busbars, 85 mm between center of DIN-rail and busbar carrier, 99 mm high

Item No.	Pack. Unit
790-362/790-398	25

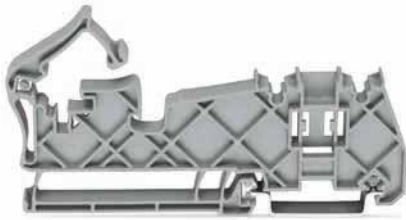


The height of the busbar can be adjusted.

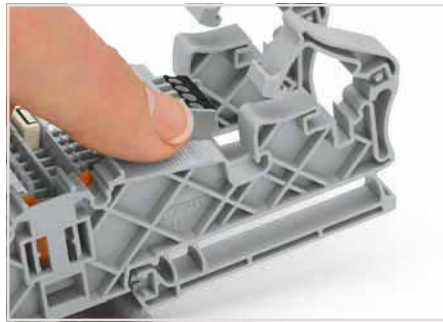


Secure the busbar by tightening the screws at the required position.

Busbar Carriers 790 Series



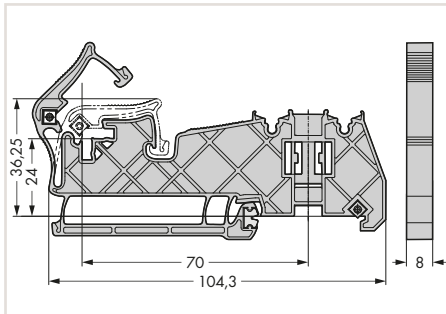
Dimensions in mm



Snap the busbar carrier onto DIN-35 rail.



Vertical mounting position of the busbar



Busbar carrier, for (10 x 3) mm copper busbars, no contact to DIN-rail, insulated

Color	Item No.	Pack. Unit
gray	790-400	20



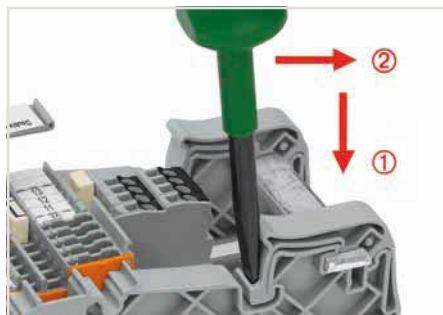
Placing the busbar in the carrier holder.



Horizontal mounting position of the busbar



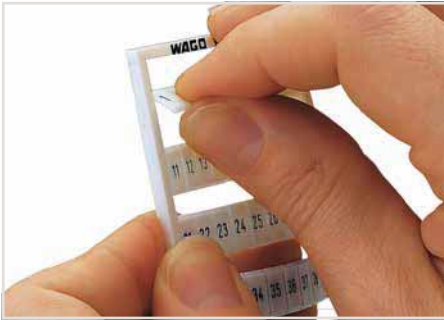
Insert the mounting bracket.



Release the mounting bracket by pushing the operating tool down ① and then forward ②.

Marking Systems

Description and Handling



WMB Multi Marking System:
Separating a strip from the WMB or WMB marker card.



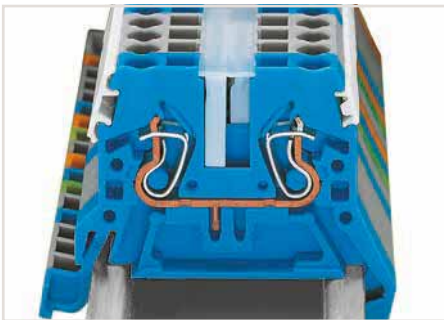
Stretching a strip.



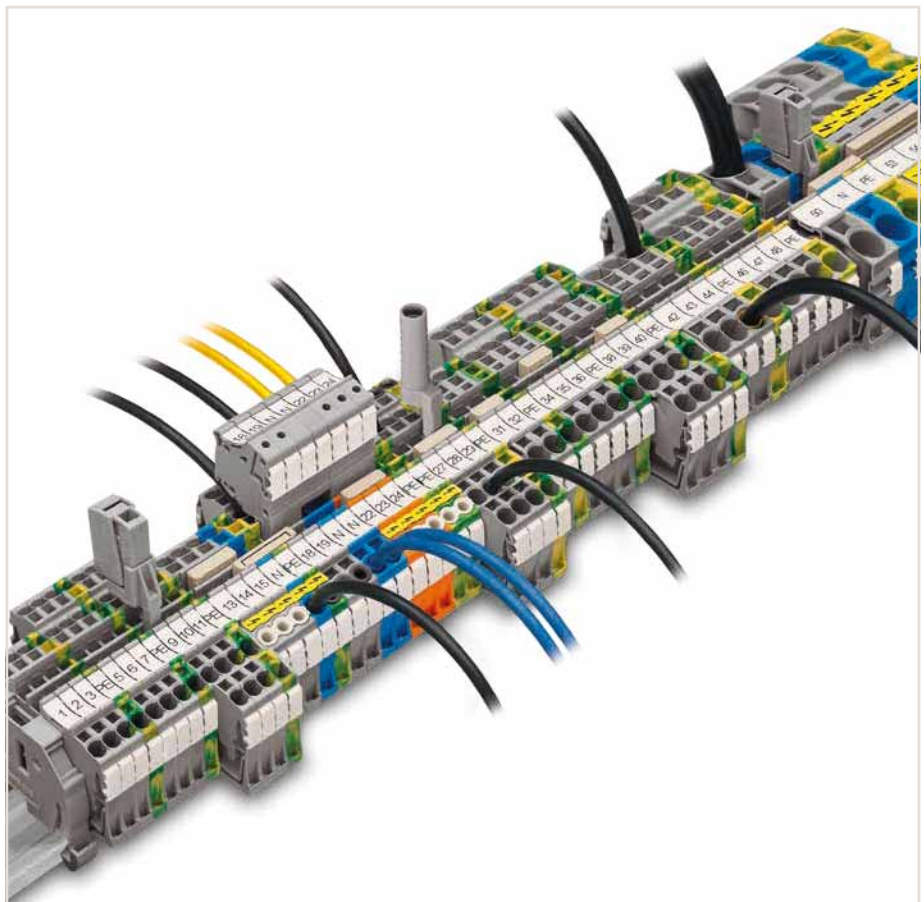
Separating an individual marker from the strip – for larger terminal blocks.



Mini-WSB (WAGO Quick Marking System)
Marking with miniature WSB Quick marking system



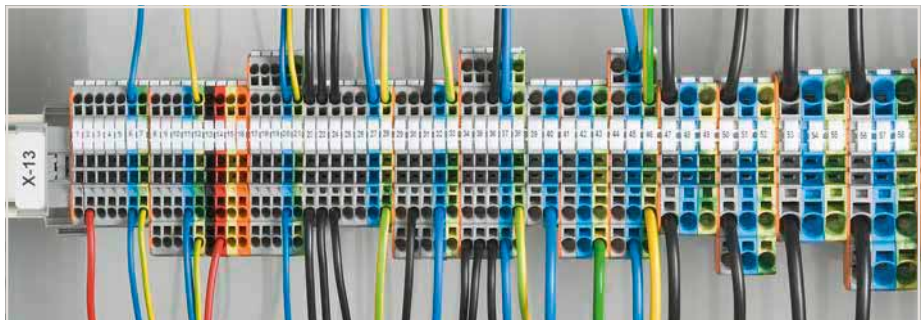
WMB markers in Mini-WSB marker slots
Marking strip, translucent
Mini-WSB markers



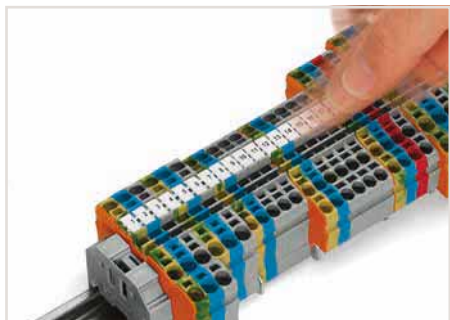
11



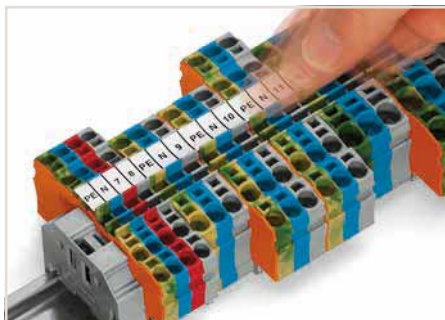
WMB Inline



WMB Inline



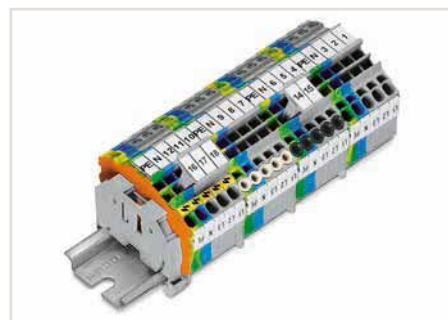
WMB In-line:
Snapping a strip into the marker slots.



Marking strips:
Snapping a strip into the marker slots.



WMB "decade" marking



Group marker carriers for TOPJOB® S terminal blocks – snap-on type for jumper slot



Height-adjustable group marker carrier (249-116) for TOPJOB® S marking strips (2009-110)



Group marking on N-busbar carrier used as end stop

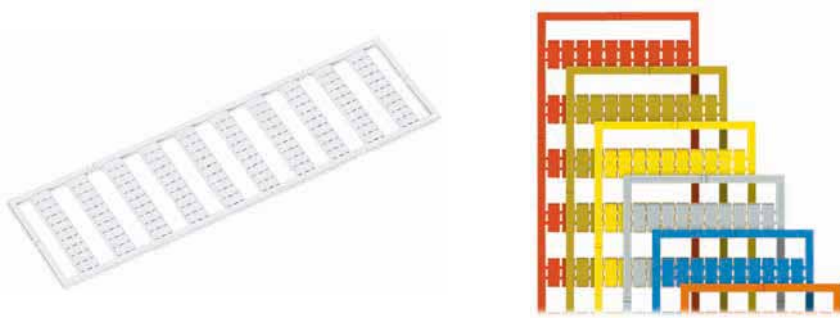


Height-adjustable group marker carrier



Additional group marking

WMB Multi Marking Systems for Terminal Widths 3.5 mm, 4 ... 4.2 mm and from 5 mm



- 5 mm wide markers for continuous marking of 270, 280, 780, 869, 870, 880 and individual marking of 281 ... 285, 781 ... 785, 2002, 2003, 2022, 2004, 2006, 2010 and 2016 Series terminal blocks
- 5 ... 5.2 mm wide markers for continuous marking of 270, 280, 780, 869, 870, 880, 2002, 2003 and 2022 Series terminal blocks and individual marking of terminal blocks larger than 5 / 5.2 mm
- 4 ... 4.2 mm wide markers for continuous marking of 279 and 2001 Series terminal blocks
- 3.5 mm wide markers for continuous marking of 2000 and 2020 Series terminal blocks

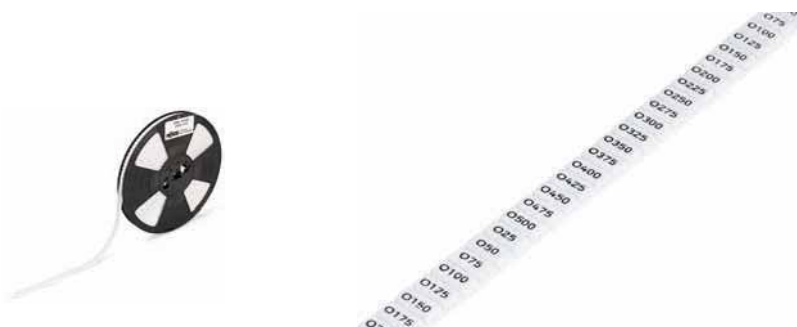
WMB Multi marking system, 10 strips with 10 markers per card, plain

Marking	5 mm Item No.	5 ... 5.2 mm Item No.	4 ... 4.2 mm Item No.	3.5 mm Item No.	Pack. Unit
white	793-501	793-5501	793-4501	793-3501	5
yellow	793-501/000-002	793-5501/000-002	793-4501/000-002		5
red	793-501/000-005	793-5501/000-005	793-4501/000-005		5
blue	793-501/000-006	793-5501/000-006	793-4501/000-006		5
gray	793-501/000-007	793-5501/000-007	793-4501/000-007		5
orange	793-501/000-012	793-5501/000-012	793-4501/000-012		5
brown		793-5501/000-014	793-4501/000-014		5
light green	793-501/000-017	793-5501/000-017	793-4501/000-017		5
green	793-501/000-023	793-5501/000-023	793-4501/000-023		5
violet	793-501/000-024	793-5501/000-024	793-4501/000-024		5



WMB In-line, plain, 2,000 WMB markers (4 mm) per reel, 4 ... 4.2 mm stretchable

Color	Item No.	Pack. Unit
white	2009-114	1



WMB In-line, plain, 1,500 WMB markers (5 mm) per reel, 5 ... 5.2 mm stretchable

Color	Item No.	Pack. Unit
white	2009-115	1

Mini-WSB Quick Marking System



Mini-WSB Quick marking system, white, 10 strips with 10 markers per card, 5 mm wide markers		
Marking	Item No.	Pack. Unit
plain	248-501	5



Mini-WSB Quick marking system, 10 strips with 10 markers per card, 5 mm wide markers, plain		
Color	Item No.	Pack. Unit
yellow	248-501/000-002	5
red	248-501/000-005	5
blue	248-501/000-006	5
gray	248-501/000-007	5
orange	248-501/000-012	5
light green	248-501/000-017	5
green	248-501/000-023	5
violet	248-501/000-024	5



Mini-WSB Quick marking system, white, 10 strips with 10 markers per card, 5 mm wide markers			
suitable for:	Marking	Item No.	Pack. Unit
4-conductor terminal blocks	1, , 2, , 3, , 4, , 5, ; to 46, , 47, , 48, , 49, , 50, ; (each 1x)	264-900	5
	U, , V, , W, , N, , PE, ; (10x)	264-901	5
	L1, , L2, , L3, , N, , PE, ; (10x)	264-902	5
	1, , 1, , 1, , 1, , 1, ; (10x)	264-903	5
	2, , 2, , 2, , 2, , 2, ; (10x)	264-904	5
3, , 3, , 3, , 3, , 3, ; (10x)	264-905	5	

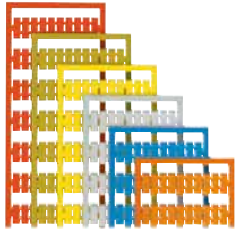


Mini-WSB Inline, plain, 1,700 Mini-WSB markers per reel, 5 mm wide markers		
Color	Item No.	Pack. Unit
white	2009-145	1

Specific Marking



WSB Quick marking system, white, 10 strips with 10 markers per card, 4 mm wide WSB markers			
suitable for:	Marking	Item No.	Pack. Unit
Fuse plugs 281-5..	plain	209-701	5



WSB Quick marking system, 10 strips with 10 markers per card, 4 mm wide markers, plain		
Color	Item No.	Pack. Unit
yellow	209-701/000-002	5
red	209-701/000-005	5
blue	209-701/000-006	5
gray	209-701/000-007	5
orange	209-701/000-012	5
light green	209-701/000-017	5
green	209-701/000-023	5
violet	209-701/000-024	5



WSB Quick marking system, for fuse plug (281-5..), white, 10 strips with 10 markers per card, 4 mm wide markers, plain		
Marking	Item No.	Pack. Unit
F1, ..., F10 (10x)ab	209-787	5
F11, ..., F20 (10x)	209-700/209-124	5
F21, ..., F30 (10x)	209-700/209-125	5
F31, ..., F40 (10x)	209-700/209-126	5
F41, ..., F50 (10x)	209-700/209-127	5



WSB Quick marking system, white, 10 strips with 10 markers per card, 5 mm markers			
suitable for:	Marking	Item No.	Pack. Unit
Matrix patchboards	plain	209-501	5



WSB Quick marking system, 10 strips with 10 markers per card, 5 mm wide markers, plain		
Color	Item No.	Pack. Unit
yellow	209-501/000-002	5
red	209-501/000-005	5
blue	209-501/000-006	5
gray	209-501/000-007	5
orange	209-501/000-012	5
light green	209-501/000-017	5
green	209-501/000-023	5
violet	209-501/000-024	5



WSB Quick marking system, white, 10 strips with 10 markers per card, horizontal marking			
suitable for:	Marking	Item No.	Pack. Unit
Matrix patchboards	1 ... 10 (10x)	209-502	5



WSB Quick marking system, white, 10 strips with 10 markers per card, horizontal marking			
suitable for:	Marking	Item No.	Pack. Unit
Matrix patchboards	1 ... 50 (2x)	209-566	5

Specific Marking



WSB Quick marking system, white, 10 strips with 10 markers per card, horizontal marking			
Suitable for:	Marking	Item No.	Pack. Unit
Matrix patchboards	X (100x)	209-500/209-035	5



WFB continuous marking strip, 1000 mm long			
Suitable for:	Color	Item No.	Pack. Unit
Matrix patchboards Rail-mount terminal blocks, Classic	transparent	210-612	10



Carrier for WFB continuous marking strip, snaps into marker slot			
Suitable for:	Color	Item No.	Pack. Unit
Matrix patchboards Rail-mount terminal blocks, Classic	gray	209-185	200 (25)



Marker carrier, for POWER CAGE CLAMP 35 / 50 / 95 mm ² Width: 10.4 mm			
Suitable for:	Color	Item No.	Pack. Unit
285-135 285-150 285-195 811 Series	gray	285-442	25



Marking strip, plain, 7.5 mm wide, 50 m reel			
Suitable for:	Color	Item No.	Pack. Unit
281-530 and 870, 869, 862, 270 Series	translucent	709-177	1

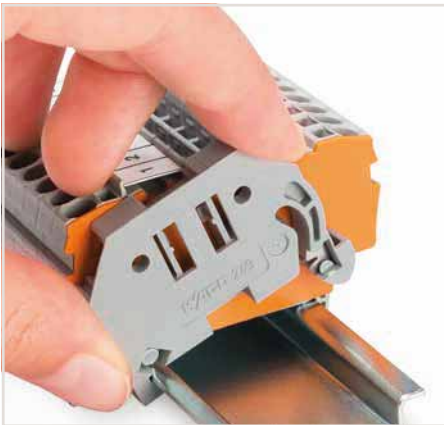


Marking strip, plain, 7.5 mm wide, 50 m reel			
Suitable for:	Color	Item No.	Pack. Unit
870, 869, 862, 270 Series	white	709-178	1

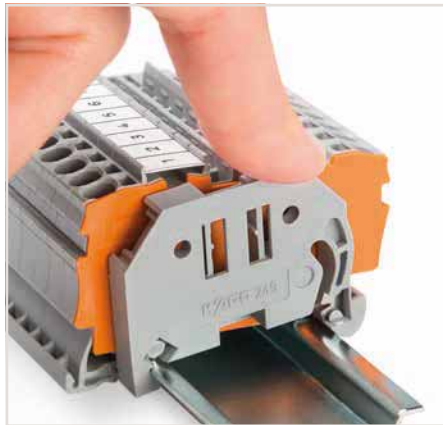


Marking strip, plain, 7.5 mm wide, 1 m long, for center group marking			
Suitable for:	Color	Item No.	Pack. Unit
870, 869 Series	translucent	709-196	1

Screwless End Stops for DIN-35 and DIN 15 Rail, Mounting Feet Termination



Simply snap on.



Snap on – that's it! Assembling the new WAGO screwless end stop is as simple and quick as snapping a WAGO rail-mount terminal block onto the rail.

Without any tools!

This allows rail-mount terminal blocks to be safely secured, at low cost, against any movement on all DIN-35 mounting rails per DIN EN 50022 (35 x 7.5 mm; 35 x 15 mm).

Entirely without screws!

The "secret" of the excellent tight fit lies in the two small clamping plates which keep the end stop in position, even if the rails are mounted vertically.

Simply snap on – that's it!

In addition, costs are significantly reduced when using large numbers of end stops.

Additional benefit: Three marker slots for all WAGO rail-mount terminal block markers and one snap-in hole for WAGO adjustable height group marker carriers offer individual marking options.



That's it!

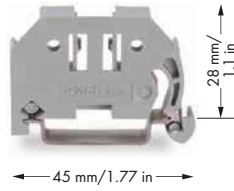


Remove an end stop from the DIN-rail.



Isolated mounting of a carrier rail in a distribution box for protection class II.

Screwless end stops for DIN-35 rail, Mounting Carriers



Screwless end stop, for DIN-35 rail, 6 mm wide

Color	Item No.	Pack. Unit
gray	249-116	100 (25)



Mounting carrier, for isolated mounting on DIN-35 rails

Color	Item No.	Pack. Unit
gray	209-106	25

Screwless end stop, for DIN-35 rail, 10 mm wide

Color	Item No.	Pack. Unit
gray	249-117	50 (25)



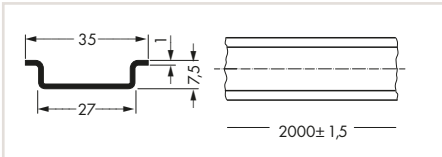
Screwless end stop, for DIN-35 rail, 14 mm wide

Color	Item No.	Pack. Unit
gray	249-197	10

Carrier Rails, Rail End Caps, Angled Support Brackets



Dimensions in mm

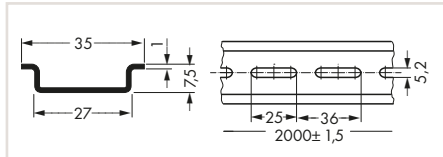


Steel carrier rail, I_N 76 A (based on 1 m length), 35 x 7.5 mm, 1 mm thick, 2 m long, per EN 60715, unslotted

	Item No.	Pack. Unit
galvanized	210-113	10
continuously galvanized	210-505	1



Dimensions in mm

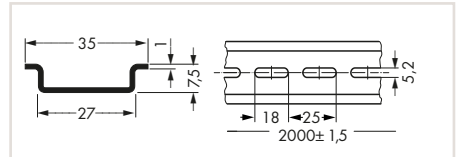


Steel carrier rail, I_N 76 A (based on 1 m length), 35 x 7.5 mm, 1 mm wide, 2 m long, 25 mm hole width, 36 mm hole spacing, per EN 60715, slotted

	Item No.	Pack. Unit
galvanized	210-112	10 (1)
continuously galvanized	210-504	1



Dimensions in mm

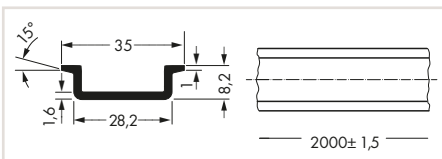


Steel carrier rail, I_N 76 A (based on 1 m length), 35 x 7.5 mm, 1 mm thick, 2 m long, 18 mm hole width, 25 mm hole spacing, per EN 60715, slotted

	Item No.	Pack. Unit
slotted	210-115	1



Dimensions in mm



Aluminum carrier rail, I_N 76 A (based on 1 m length), 35 x 8.2 mm, 1.6 mm thick, 2 m long, similar to EN 60715

	Item No.	Pack. Unit
unslotted	210-196	10

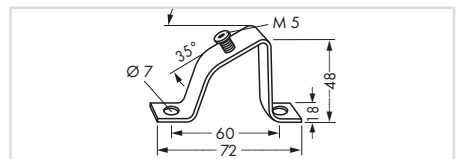


Rail end cap, for DIN-35 rail (7.5 mm high)

Color	Item No.	Pack. Unit
gray	209-109	50 (25)



Dimensions in mm

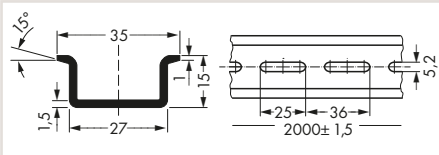


Angled support bracket, without screw

	Item No.	Pack. Unit
	210-148	10
Screw M5 x 8	210-149	100 (20)



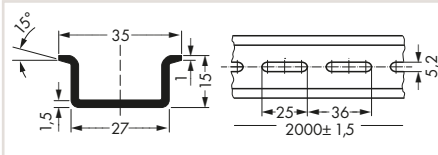
Dimensions in mm



Steel carrier rail, I_N 125 A (based on 1 m length), 35 x 15 mm, 1.5 mm thick, 2 m long, similar to EN 60715

	Item No.	Pack. Unit
slotted	210-197	10
unslotted	210-114	10

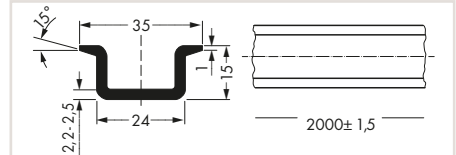
Dimensions in mm



Steel carrier rail, I_N 125 A (based on 1 m length), 35 x 15 mm, 1.5 mm thick, 2 m long, similar to EN 60715

	Item No.	Pack. Unit
slotted	210-508	1
unslotted	210-506	1

Dimensions in mm

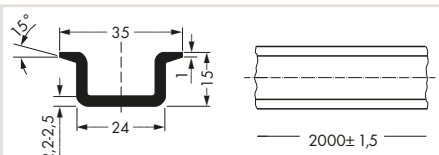


Steel carrier rail, I_N 125 A (based on 1 m length), 35 x 15 mm, 2.3 mm thick, 2 m long, per EN 60715

	Item No.	Pack. Unit
slotted	210-118	10



Dimensions in mm



Copper carrier rail, I_N 309 A (based on 1 m length), 35 x 15 mm, 2.3 mm thick, 2 m long, per EN 60175

	Item No.	Pack. Unit
unslotted	210-198	10

Transparent Covers for Rail-Mount Terminal Blocks, Usable with Lead Seals

709 Series

Description and Handling



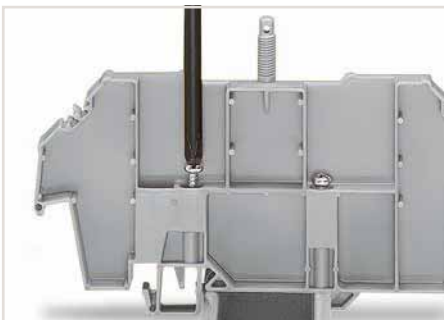
Snapping a cover carrier onto the DIN-rail.



Application example:
Cover (type 1) without safety warning



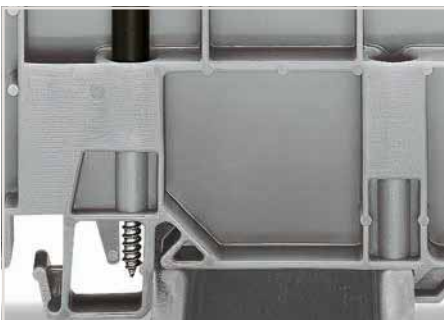
Application example:
Cover (type 1) with safety warning



Tightening both securing screw (left) and mounting screw (right).



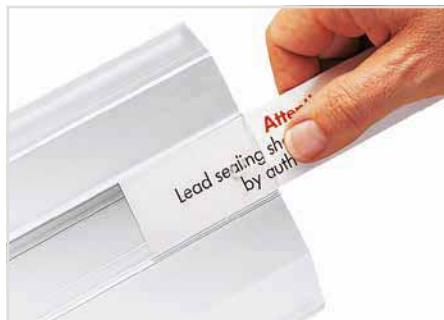
Application example:
Cover (type 1) with safety warning



Securing screw – prevents lifting off from rail.
Mounting screw – prevents the cover carrier from being moved on the rail.



Removing a cover carrier from the DIN-rail.



Inserting a marking strip into the cover.



Cover with lead seals:
Using covers without lead seals,
the thread dome-head can be broken off.

11

Transparent Covers for Rail-Mount Terminal Blocks, Usable with Lead Seals 709 Series



Cover, type 1, for cover carrier (type 1), 1 m long		
Item No.	Pack. Unit	
709-153	10	

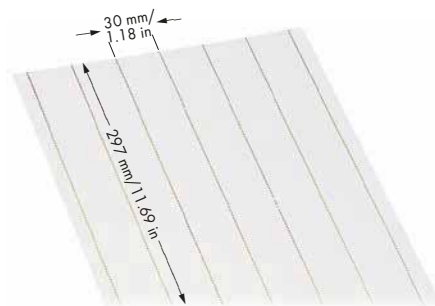


Cover, type 2, for cover carrier (type 2), 1 m long		
Item No.	Pack. Unit	
709-154	10	

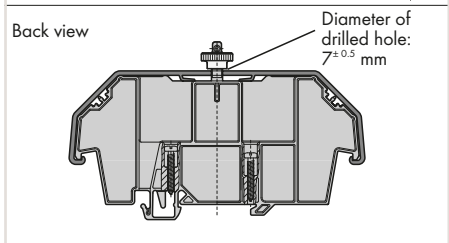
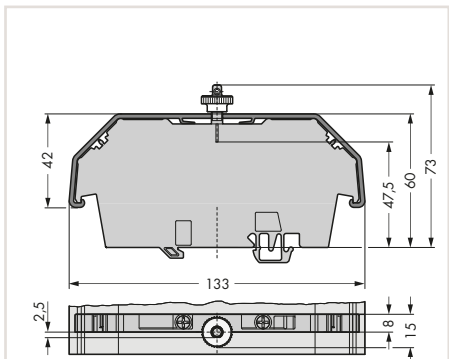


Spare mounting/securing screw, for cover		
Item No.	Pack. Unit	
209-196	200 (25)	

Spare knurled nut, for cover		
Item No.	Pack. Unit	
210-549	100 (25)	



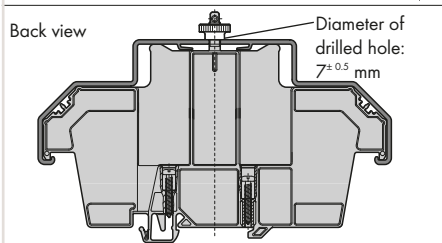
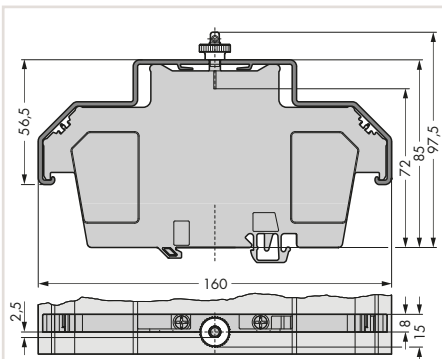
Dimensions in mm



Cover carrier, type 1, for 279 to 282, 880 Series rail-mount terminal blocks, incl. mounting/securing screws and knurled nut, for 264 Series miniature terminal blocks, for 270 Series sensor and actuator blocks

Item No.	Pack. Unit	
709-167	10	

Dimensions in mm



Cover carrier, type 2, for 283 to 285 Series rail-mount terminal blocks, incl. mounting/securing screws and knurled nut, for 279 to 281 Series double- and triple-deck terminal blocks, 780 to 785, 775, 776 and 777 Series TOPJOB® rail-mount terminals blocks

Item No.	Pack. Unit	
709-168	10	

Marking card with 6 marking strips, for group marking or safety instructions

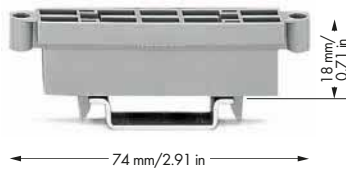
Item No.	Pack. Unit	
709-183	1	

Collective Jumpers Carriers



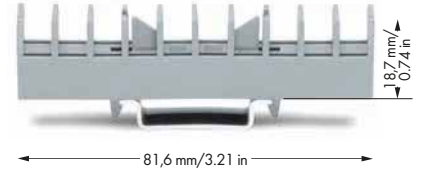
Collective jumper carrier, for DIN-35 rail, for 2000 to 2016 Series jumpers

Color	Item No.	Pack. Unit
gray	2009-180	25



Collective carrier for adjacent jumpers, for DIN-35 rail, for 279 to 284 Series adjacent jumpers and 215 Series banana plugs
The collective carrier can be snapped onto DIN-35 rails.
It serves as a depository for adjacent jumpers and banana plugs during maintenance work.

Color	Item No.	Pack. Unit
gray	209-100	50 (25)



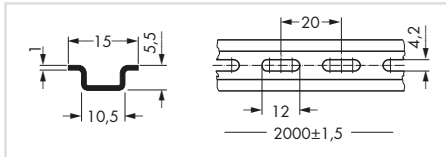
Collective jumper carrier, for DIN-35 rail, compatible with jumpers for transverse switching terminal block (282-811) and longitudinal switching disconnect terminal block (282-821)
The collective carrier can be snapped onto DIN-35 rails.
It serves as a depository for adjacent jumpers during maintenance work.

Color	Item No.	Pack. Unit
gray	282-369	25

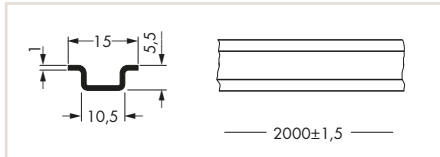
Carrier Rails and Screwless End Stops for DIN-35 Rails



Dimensions in mm



Dimensions in mm



Steel carrier rail, I_N 57 A (based on 1 m length), 15 x 5.5 mm, 1 mm wide, 2 m long, per EN 60715

	Item No.	Pack. Unit
slotted	210-111	1

Steel carrier rail, I_N 57 A (based on 1 m length), 15 x 5.5 mm, 1 mm wide, 2 m long, per EN 60715

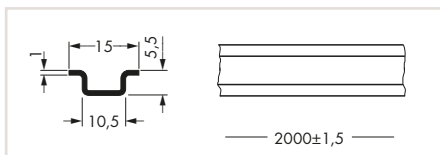
	Item No.	Pack. Unit
unslotted	210-295	1

Screwless end stop, for DIN-15 rail, 6 mm wide

Color	Item No.	Pack. Unit
gray	249-101	25



Dimensions in mm



Aluminum carrier rail, I_N 57 A (based on 1 m length), 15 x 5.5 mm, 1 mm wide, 2 m long, per EN 60715

	Item No.	Pack. Unit
unslotted	209-296	10

Operating tools



Operating tool with a partially insulated shaft, type 1, (2.5 x 0.4) mm blade, for 279, 726, 727, 2000, 2001 and 2020 Series

Item No.	Pack. Unit
210-719	1



Set of operating tools with a partially insulated shaft, type 1, (2.5 x 0.4) mm blade, type 2, (3.5 x 0.5) mm blade, type 3, (5.5 x 0.8) mm blade

Item No.	Pack. Unit
210-722	1



Operating tool with a partially insulated shaft, (2.5 x 0.4) mm blade, short for 279, 726, 727, 2000, 2001, 2020 Series

Item No.	Pack. Unit
210-647	1

Operating tool with a partially insulated shaft, type 2, (3.5 x 0.5) mm blade, for 260, 261, 262, 264, 270, 280, 281, 290, 775, 776, 777, 769, 780, 781, 869, 870, 880, 2002, 2003, 2004, 2005, 2022 Series

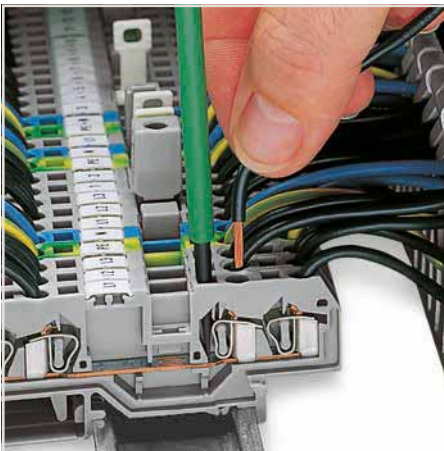
Item No.	Pack. Unit
210-720	1

Operating tool with a partially insulated shaft, (2.5 x 0.4) mm blade, short, angled, for 279, 2000, 2001 and 2020 Series

Item No.	Pack. Unit
210-648	1

Operating tool with a partially insulated shaft, type 3, (5.5 x 0.8) mm blade, for 282, 283, 284, 285, 782, 783, 784, 785, 2006, 2010, 2016 Series

Item No.	Pack. Unit
210-721	1



The blade dimensions of the above-listed operating tools with a partially insulated shaft are ideal for easy operation of front-entry terminal blocks.



Set of operating tools in a box

Operating tools



Operating tool with a partially insulated shaft, (3.5 x 0.5) mm blade, short, for 260, 261, 262, 264, 270, 280, 281, 869, 870 and 880 Series

Item No.	Pack. Unit
210-657	1



Operating tool, insulated, for 279 Series

	Item No.	Pack. Unit
1-way	209-129	1
2-way	279-432	1
3-way	279-433	1
10-way	279-440	1



Operating pliers, for side-entry rail-mount terminal blocks (281, 282, 283 and 284 Series)

Item No.	Pack. Unit
210-141	1

Operating tool with a partially insulated shaft, (3.5 x 0.5) mm blade, short, angled, ideal for 280 Series Actuator/Sensor Terminal Blocks and for 260, 261, 262, 264, 280, 281, 869, 870, 880, 2002 and 2004 Series

Item No.	Pack. Unit
210-658	1

Operating tool, insulating, for 264 (1- and 2-way only), 280, 281 (up to 3-way only)

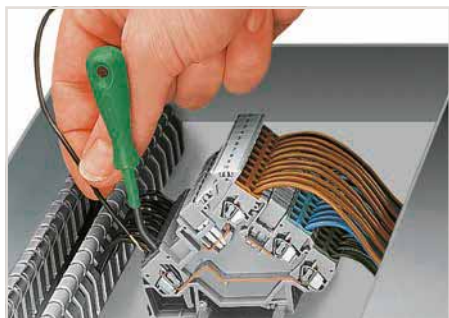
	Item No.	Pack. Unit
1-way	209-130	1
2-way	280-432	
3-way	280-433	
4-way	280-434	
5-way	280-435	
6-way	280-436	
7-way	280-437	
8-way	280-438	
9-way	280-439	
10-way	280-440	

Operating pliers, for side-entry rail-mount terminal blocks (279 and 280 Series)

Item No.	Pack. Unit
210-143	1

Operating tool, insulating, for 281 Series

	Item No.	Pack. Unit
10-way	280-432	1



The blade dimensions (DIN 5264) of the above-listed operating tools are ideal for operating 280 Series Front-Entry Sensor/Actuator Terminal Block.



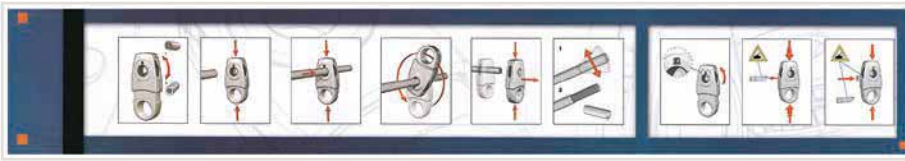
Commoning front-entry disconnect terminal blocks via comb-style jumper bar using a 10-pole operating tool



When operating the handles beyond the locked position, the ratchet allows the tool to open and be removed from the terminal block.

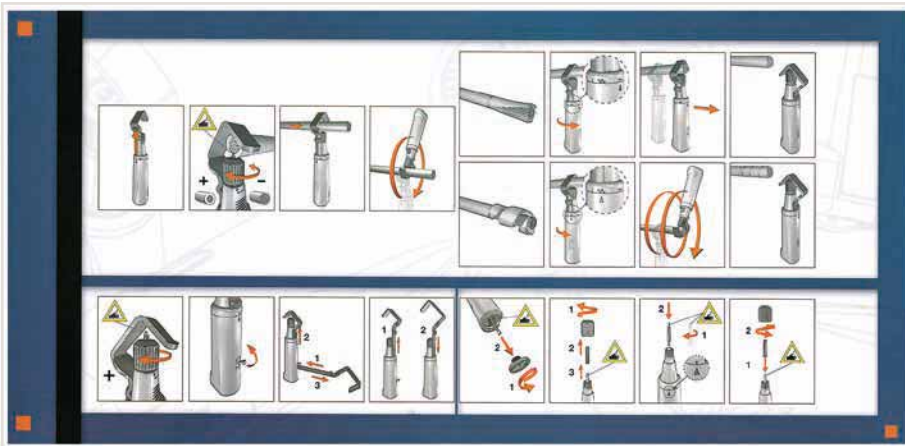
Cable Strippers

Installation



Cable Stripper (206-171):

- 10-position adjustment wheel ensures consistent stripping results
- Precision via 10-position blade cutting depth adjustment
- Strips the sheath from multi-core and fiber optic cables up to 11 mm / 0.43 inch diameter.
- Safe and easy to use through closed stripping cavity



Cable stripper (206-174):

- Safe and easy to use: Three locking positions for circular, longitudinal and spiral cuts
- High cable stripping capacity of up to 40 mm diameter
- Ergonomic design features rests for thumb, index and pinky fingers to ease raising of the cable retention hook
- Replacement blades can be stored within the tool's handle



Set the cable diameter.



Strip the cable.

Cable Strippers



Cable stripper, for round cables with 2.5 mm ... 11 mm outer diameter

Item No.	Pack. Unit
206-171	1



Cable stripper, for round cables with 4.5 mm ... 45 mm outer diameter

Item No.	Pack. Unit
206-174	1



Replacement blade, for 2.5 ... 11 mm Ø, for cable stripper (206-171)

Item No.	Pack. Unit
206-170	1

Replacement blade, for 4.5 ... 45 mm Ø, for cable stripper (206-174)

Item No.	Pack. Unit
206-173	1



Stripping Tools



"Quickstrip 10" wire stripper, 0.02 ... 10 mm² "f-st" (6 mm² "s"), wire cutter f up to 10 mm² "f-st" (1.5 mm² "s")

Item No.	Pack. Unit
206-124	1



"Quickstrip 16" wire stripper, 4 ... 16 mm², wire cutter up to 10 mm² "f-st" (1.5 mm² "s")

Item No.	Pack. Unit
206-125	1



"Standard" blade cassette, 0.02 ... 10 mm², for wire stripper (206-124)

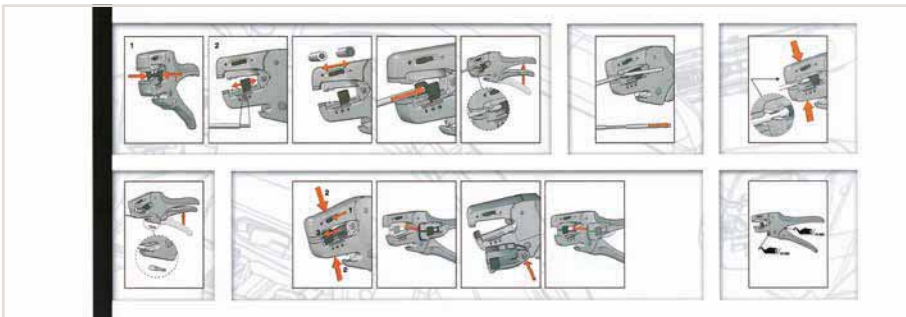
Item No.	Pack. Unit
206-126	1

V-blade cassette, 0.1 ... 4 mm², for PTFE, for wire stripper (206-124)

Item No.	Pack. Unit
206-127	1

"Standard" blade cassette, 4 ... 16 mm², for wire stripper (206-125)

Item No.	Pack. Unit
206-128	1



Operating instructions are included.

Wire Strippers:

- Automatically adjust to conductor size
- Stripping blades cause no damage to conductor strands
- Gripping pressure of jaws adjusts automatically to conductor insulation diameter
- Clamping jaws and stripping blades automatically open once the stripping process is completed – no slaying of the conductor strands
- Exact strip length may be set by sliding black setting stop
- Stripping blades can be replaced
- Self-sharpening, fully protected cutter (replaceable*)
- Entire body made of glass fiber-reinforced polyamide

* applies to Microstrip

11



Cutting a conductor.



Stripping a conductor.

Crimping Tools



"Variocrimp 4" crimping tool, for insulated and uninsulated ferrules, 0.25 ... 4 mm²/AWG 24 ... 12

Item No.	Pack. Unit
206-204	1



"Variocrimp 16" crimping tool, for insulated and uninsulated ferrules, 6 ... 16 mm²/AWG 10 ... 6

Item No.	Pack. Unit
206-216	1



Cable cutter, for copper and aluminium cables up to 35 mm² (2 AWG)

Item No.	Pack. Unit
206-118	1



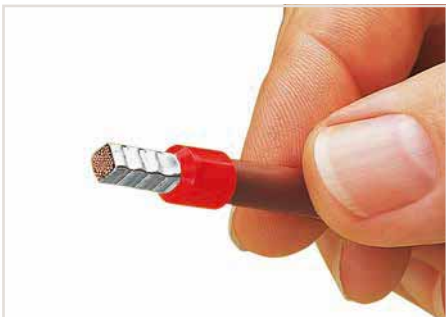
Insert ferruled conductor into the crimping station.



Squeeze handles until ratchet mechanism is released.



Cutting a cable.



A perfect gas-tight crimp – both electrically and mechanically reliable

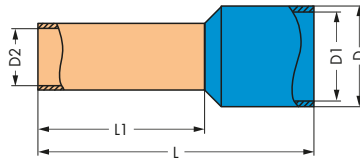


Only for "Variocrimp 16":
Adjust conductor cross section with crimping tool in open position.

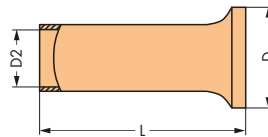
Application notes:

- The built-in crimping pressure control of "Variocrimp 4" automatically adjusts the crimping force to the conductor cross-section. Select the wire gauge on "Variocrimp 16" before crimping.
- Only one crimping station is needed to handle the specified conductor range.
- Uniform, compact crimping on all four sides for high conductor retention.
- No need to center the conductor into the ferrule.
- Crimping can be performed from either side (for left- or right-handed users).
- Built-in ratchet mechanism ensures gas-tight crimp connection.
- Crimping tools open automatically after crimping operation is complete.
- Ergonomically designed handles.

Insulated and Uninsulated Ferrules per DIN 46228, Part 4/09.90



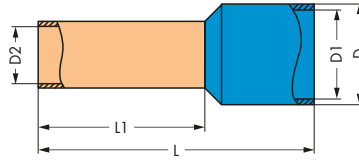
Ferrule, insulated, electro-tin-plated, electrolytic copper, gastight crimped, per DIN 46228, Part 4/09.90									
Conductor Size	Color	Strip Length	L	L 1	D	D 1	D 2	Item No.	Pack. Unit
0.25 mm ² / 24 AWG	yellow	7 mm / 0.28 inch	10,5	6	2,5	2	0,8	216-321	1000
0.25 mm ² / 24 AWG	yellow	9 mm / 0.35 inch	12,5	8	2,5	2	0,8	216-301	1000
0.34 mm ² / 24 AWG	green	7 mm / 0.28 inch	10,5	6	2,5	2	0,8	216-322	1000
0.34 mm ² / 24 AWG	green	9 mm / 0.35 inch	12,5	8	2,5	2	0,8	216-302	1000
0.5 mm ² / 22 AWG	white	7 mm / 0.28 inch	11,5	6	3	2,5	1,1	216-221	1000
0.5 mm ² / 22 AWG	white	9 mm / 0.35 inch	13,5	8	3	2,5	1,1	216-201	1000
0.75 mm ² / 20 AWG	gray	8 mm / 0.31 inch	12	6	3,3	2,8	1,3	216-222	1000
0.75 mm ² / 20 AWG	gray	10 mm / 0.39 inch	14	8	3,3	2,8	1,3	216-202	1000
1 mm ² / 18 AWG	red	8 mm / 0.31 inch	12	6	3,6	3	1,5	216-223	1000
1 mm ² / 18 AWG	red	10 mm / 0.39 inch	14	8	3,6	3	1,5	216-203	1000
1.5 mm ² / 16 AWG	black	8 mm / 0.31 inch	12	6	4	3,4	1,8	216-224	1000
1.5 mm ² / 16 AWG	black	10 mm / 0.39 inch	14	8	4	3,4	1,8	216-204	1000
2.08 mm ² / 14 AWG	yellow	10 mm / 0.39 inch	14,5	8	4,2	3,6	2,05	216-205	1000
2.5 mm ² / 14 AWG	blue	10 mm / 0.39 inch	15	8	4,8	4,2	2,3	216-206	1000
4 mm ² / 12 AWG	gray	12 mm / 0.47 inch	16,8	9,5	5,4	4,8	2,9	216-207	1000
6 mm ² / 10 AWG	yellow	14 mm / 0.55 inch	20	12	6,8	6,3	3,5	216-208	100
10 mm ² / 8 AWG	red	16 mm / 0.63 inch	21	12	8,1	7,5	4,6	216-209	100
16 mm ² / 6 AWG	blue	23 mm / 0.91 inch	28	18	9,6	8,8	5,8	216-210	100



Ferrule, uninsulated, electro-tin-plated, electrolytic copper, gastight crimped, per DIN 46228, Part 4/09.90							
Conductor cross section	Strip length	L	D	D 2	Item No.	Pack. Unit	
0.25 mm ² / 24 AWG	5 mm / 0.2 inch	5	1,7	0,75	216-151	1000	
0.25 mm ² / 24 AWG	7 mm / 0.28 inch	7	1,7	0,75	216-131	1000	
0.34 mm ² / 24 AWG	5 mm / 0.2 inch	5	1,7	0,85	216-152	1000	
0.34 mm ² / 24 AWG	7 mm / 0.28 inch	7	1,7	0,85	216-132	1000	
0.5 mm ² / 22 AWG	6 mm / 0.48 inch	6	2,1	1	216-121	1000	
0.5 mm ² / 22 AWG	8 mm / 0.31 inch	8	2,1	1	216-101	1000	
0.75 mm ² / 20 AWG	6 mm / 0.48 inch	6	2,3	1,2	216-122	1000	
0.75 mm ² / 20 AWG	8 mm / 0.31 inch	8	2,3	1,2	216-102	1000	
1 mm ² / 18 AWG	6 mm / 0.48 inch	6	2,5	1,4	216-123	1000	
1 mm ² / 18 AWG	8 mm / 0.31 inch	8	2,5	1,4	216-103	1000	
1.5 mm ² / 16 AWG	6 mm / 0.48 inch	6	2,8	1,7	216-124	1000	
1.5 mm ² / 16 AWG	8 mm / 0.31 inch	8	2,8	1,7	216-104	1000	
2.5 mm ² / 14 AWG	10 mm / 0.39 inch	10	3,4	2,2	216-106	1000	
4 mm ² / 12 AWG	10 mm / 0.39 inch	10	4	2,8	216-107	1000	
6 mm ² / 10 AWG	12 mm / 0.47 inch	12	4,7	3,5	216-108	250	
10 mm ² / 8 AWG	12 mm / 0.47 inch	12	5,8	4,5	216-109	250	
16 mm ² / 6 AWG	12 mm / 0.47 inch	15	7,5	5,8	216-110	250	

Rail-Mount Terminal Blocks, TOPJOB® S

Insulated and Uninsulated Ferrules per DIN 46228, Part 4/09.90



Ferrule, insulated, electro-tin-plated, electrolytic copper, gastight crimped, per DIN 46228, Part 4/09.90

Conductor cross section	Color	Strip length	L	L 1	D	D 1	D 2	Item No.	Pack. Unit
0.5 mm ² / 22 AWG	○ white	12 mm / 0.47 inch	16	10	3,1	2,6	1	216-241	1000
0.75 mm ² / 20 AWG	○ gray	12 mm / 0.47 inch	16	10	3,3	2,8	1,2	216-242	1000
0.75 mm ² / 20 AWG	○ gray	14 mm / 0.55 inch	18	12	3,3	2,8	1,2	216-262	1000
1 mm ² / 18 AWG	● red	12 mm / 0.47 inch	16	10	3,5	3	1,4	216-243	1000
1 mm ² / 18 AWG	● red	14 mm / 0.55 inch	18	12	3,5	3	1,4	216-263	1000
1.5 mm ² / 16 AWG	● black	12 mm / 0.47 inch	16	10	4	3,5	1,7	216-244	1000
1.5 mm ² / 16 AWG	● black	14 mm / 0.55 inch	18	12	4	3,5	1,7	216-264	1000
1.5 mm ² / 16 AWG	● black	20 mm / 0.79 inch	24	18	4	3,5	1,7	216-284	1000
2.5 mm ² / 14 AWG	● blue	12 mm / 0.47 inch	17	10	4,7	4,2	2,2	216-246	1000
2.5 mm ² / 14 AWG	● blue	14 mm / 0.55 inch	19	12	4,7	4,2	2,2	216-266	1000
2.5 mm ² / 14 AWG	● blue	20 mm / 0.79 inch	25	18	4,7	4,2	2,2	216-286	1000
4 mm ² / 12 AWG	○ gray	14 mm / 0.55 inch	20	12	5,4	4,8	2,8	216-267	1000
4 mm ² / 12 AWG	○ gray	20 mm / 0.79 inch	26	18	5,4	4,8	2,8	216-287	500
6 mm ² / 10 AWG	● yellow	14 mm / 0.55 inch	20	12	6,8	6,3	3,5	216-208	100
6 mm ² / 10 AWG	● yellow	20 mm / 0.79 inch	26	18	6,9	6,3	3,5	216-288	500
10 mm ² / 8 AWG	● blue	20 mm / 0.79 inch	28	18	8,4	7,6	4,5	216-289	500
16 mm ² / 6 AWG	● blue	23 mm / 0.91 inch	28	18	9,6	8,8	5,8	216-210	100

Crimping Tools



Crimping tool 25, for insulated and uninsulated ferrules, crimping range: 10 mm², 16 mm² and 25 mm²

Item No.	Pack. Unit
206-225	1



Crimping tool 50, for insulated and uninsulated ferrules, crimping range: 35 mm² and 50 mm²

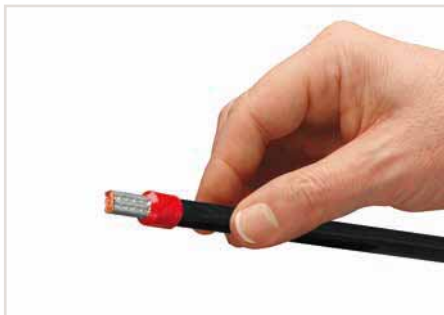
Item No.	Pack. Unit
206-250	1



Insert the ferruled conductor into crimping station.



Squeeze handles until ratchet mechanism is released.



A perfect gas-tight crimp, both electrically and mechanically reliable.

Application notes:

- Improved crimping for higher conductor retention
- Conductor can be performed from either side (for left- or right-handed users).
- Built-in ratchet mechanism ensures gas-tight crimp connection.
- Crimping tools open automatically after crimping operation is complete.
- Ergonomically designed handles.

What is a "gas-tight" connection?

In a gas-tight connection, the conductor and the ferrule are compressed, eliminating all spaces. Under normal atmospheric conditions, neither a liquid nor gaseous medium can penetrate the crimped connection.

Oxidation between crimped single conductors is prevented, virtually eliminating the possibility of any increase in the crimped connection's resistance. In some exceptional cases, minute, isolated spaces may be present. However, these instances can be considered as closed off due to the twisted conductor.

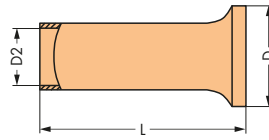
Inadequate crimping can allow the conductor to be pulled out of the connection. Hollow spaces also remain, permitting oxidation formation and leading to an increase in contact resistance.

Elevated resistance is detrimental for both signal transmission (signal flow is damped) and power transmission, resulting in power loss and contact heating (risk of fire).

Crimping tools with built-in ratchets are recommended, such as the WAGO Variocrimp tools. These tools open automatically after the crimping operation is complete. Space-saving crimping from all four sides is ideal for spring clamp termination.

Ferruled conductor cross-sections specified for WAGO products is based on this crimping method.

High-Current, Rail-Mount Terminal Blocks Insulated and Uninsulated Ferrules per DIN 46228, Part 4/09.90



Ferrule, uninsulated, electro-tin-plated, electrolytic copper, gastight crimped, per DIN 46228, Part 4/09.90

Conductor Size	Strip Length	L	D	D 2	Item No.	Pack. Unit
25 mm ² / 4 AWG	25 mm / 0.98 inch	25	9,5	7,3	216-413	50
35 mm ² / 2 AWG	25 mm / 0.98 inch	25	11	8,3	216-414	50
35 mm ² / 2 AWG	30 mm / 1.18 inch	30	11	8,3	216-424	50
50 mm ² / 1 AWG	30 mm / 1.18 inch	30	13	10,3	216-425	50
50 mm ² / 1 AWG	35 mm / 1.38 inch	35	13	10,3	216-435	50

Test and Measurement Devices



Profi LED+, 2-pole voltage tester with LED display, removable 4 mm Ø test probes

Item No.	Pack. Unit
206-707	1



Profi LED+, 2-pole voltage tester with LED display, removable 4 mm Ø test probes

Item No.	Pack. Unit
206-706	1



Spare test probes, 4 mm Ø (2 pieces)

Item No.	Pack. Unit
206-808	25



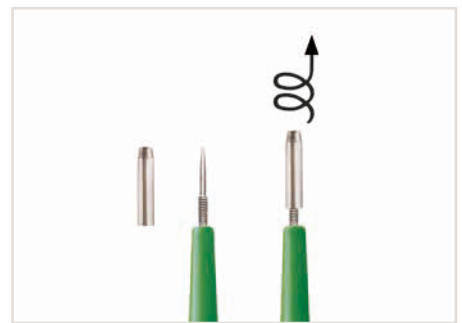
Additional for Profi LED+ features:

- Automatic measurement range selection
- Single-pole phase testing (AC >100 V)
- Two-pole sequence testing (R and L)
- Continuity testing
- FI/RCD testing (30 mA) via buttons
- One-hand operation for SCHUKO and CEE sockets
- LED torch lamp function
- Automatic backlight
- Auto power-off function
- CAT IV 1000 V
- TÜV/GS tested and approved
- IEC/EN 61243-3 (DIN VDE 0682-401)



Additional for Profi LED+ features:

- Automatic measurement range selection
- Single-pole phase testing (AC >100 V)
- Two-pole sequence testing (R and L)
- Continuity testing
- FI/RCD testing (30 mA) via buttons
- One-hand operation for SCHUKO and CEE sockets
- LED torch lamp function
- CAT IV 1000 V
- TÜV/GS tested and approved
- IEC/EN 61243-3 (DIN VDE 0682-401)



Profi-LED+:

- Improved socket contact via 4 mm Ø test probes
- Removable test probes for small test ports (suitable for all WAGO terminal blocks)

Test and Measurement Devices 206 Series



Multi-Tester, digital multimeter with non-contact voltage tester

Item No.	Pack. Unit
206-810	1



Clamp-Multi-Tester

Item No.	Pack. Unit
206-816	1



Testboy, with integrated flashlight, non-contact voltage tester

Item No.	Pack. Unit
206-804	1



Additional Multi Tester features:

- Contact-less voltage test AC >100 V (optical and acoustical)
- Resistance measurement up to 20 MΩ
- Acoustical continuity test
- Diode test
- Data hold function
- Auto power-off function
- LED torch lamp function
- CAT IV 600 V
- TÜV/GS tested and approved
- IEC/EN 61010-1 (DIN VDE 0411)



Voltage testing in switchgear cabinet

Additional Clamp-Multi-Tester features:

- DC and AC current up to 600 A
- True RMS and min./max. value measurement
- DC and AC voltage up to 600 V
- Manual or automatic measurement range selection
- Resistance up to 60 MΩ
- Capacitance measurement, acoustical continuity test
- Diode test, data hold function
- Large LCD with backlight
- LED measuring point lighting
- CAT III 600 V overvoltage protection
- IEC/EN 61010-1 (DIN VDE 0411)
- Includes batteries, measurement leads and carrying bag



A device that will reliably detect AC voltage in cables, sockets, fuses, switches, outlets and other installations.

Testboy can detect the following:

- Live conductors
- Cable breaks
- Blown fuses (in cartridges or holders)
- Defective switches
- Defective lamps in strings of lights



Current measurement in a switchgear cabinet

General Test Accessories



Measuring range category	CAT I
Test voltage (AC)	30 V
Test voltage (DC)	60 V
Test current	10 A

Test plug, with 500 mm cable, 2 mm Ø		
Color	Item No.	Pack. Unit
red	210-136	50 (1)



Measuring range category	CAT I
Test voltage (AC)	30 V
Test voltage (DC)	60 V
Test current	10 A

Test plug, with 500 mm cable, 2.3 mm Ø		
Color	Item No.	Pack. Unit
yellow	210-137	50 (1)



Measuring range category	CAT I
Test voltage (AC)	30 V
Test voltage (DC)	60 V
Test current	20 A

Connection data	
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	9 ... 11 mm / 0.35 ... 0.43 inch

Banana plugs for 4 mm socket diameter, color mixed, 10 x orange, white, black, blue, yellow		
Item No.	Pack. Unit	
215-111	50	



Measuring range category	CAT I
Test voltage (AC)	30 V
Test voltage (DC)	60 V
Test current	20 A

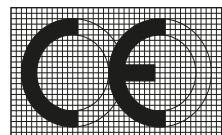
Connection Data	
Connection technology	CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Fine-stranded conductor	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Strip length	9 ... 11 mm / 0.35 ... 0.43 inch

Banana plug, for 4 mm socket diameter		
Color	Item No.	Pack. Unit
orange	215-211	50
red	215-212	50
black	215-311	50
green	215-411	50
yellow	215-511	50
white	215-611	50
blue	215-711	50
gray	215-811	50
green-yellow	215-911	50



Technical Section

Technical Section



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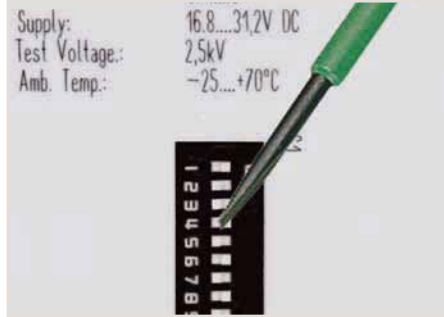
JUMPFLEX® Signal Conditioners

857 Series

Configuration Options



Housed in a 6 mm-wide package, the JUMPFLEX® Signal Conditioners feature eight Push-in CAGE CLAMP® connections and a common profile. These features play a key role in forming the basis for a successful overall solution. Additional benefits include: "safe isolation," extended operating temperature range and calibrated, configurable signals. Combined with excellent technical specifications, these features lead to a line of advanced signal conditioning solutions that maximize panel space while reducing signal wiring and downtime.



Configuration via DIP switches



Industry's most compact – "True" 6.0 mm (0.23 in.) width maximizes panel space



Configuration via JUMPFLEX®-ToGo Smartphone App



For extreme applications – Extended temperature range of -25 °C to +70 °C to support more applications.

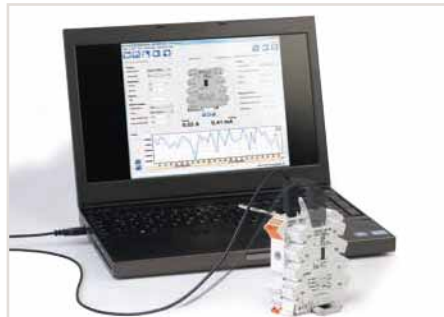
Directly Connect:

Simple, push-in termination of solid and ferruled conductors – no operating tool needed.

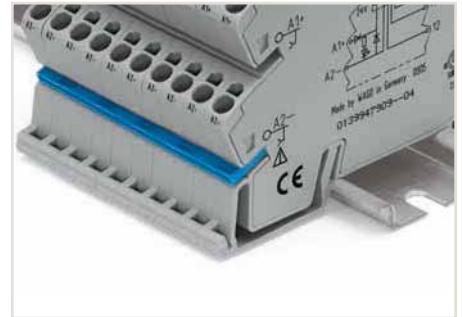
PUSH-IN CAGE CLAMP®

Highest Safety:

All devices provide "safe isolation" with 2.5 kV test voltage acc. to DIN EN 61010-1



Configuration via PC software



Commoning, not discrete wiring – same outline allows the use of a single in-line, push-in jumper



Configuration via push/slide switch

2857 Series

Configuration Options



The success of the 857 Series *JUMP-FLEX*® Signal Conditioners shaped the design of the 2857 Series. Usability, convenience and absolute reliability are at the core of the 2857 Series. However, the 2857 Series takes flexibility to new levels by providing several convenient configuration options. The user can choose between one or several different configuration options as required. In addition to DIP switches, PC configuration software and a smartphone configuration app, there is also a newly developed touch panel display. Every aspect has been engineered for maximum flexibility. – exactly what you'd expect from WAGO.

Configuration via DIP switches

Commoning, not discrete wiring – same outline allows the use of a single in-line, push-in jumper



Configuration via *JUMP-FLEX*®-To-Go Smartphone App

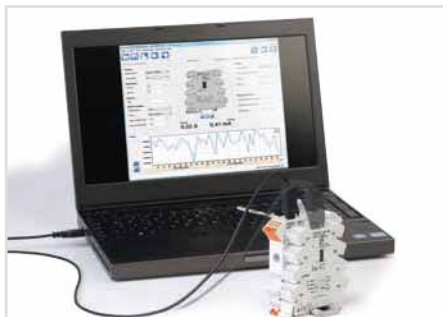


For extreme applications – Extended temperature range of -40 °C to +70 °C to support more applications

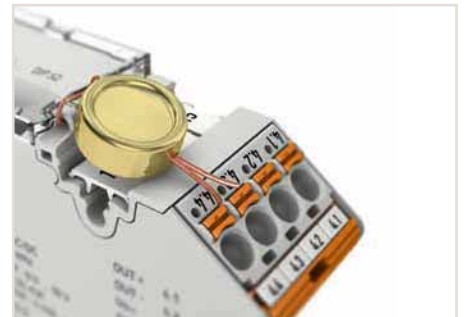
Directly Connect:
Simple, push-in termination of solid and ferruled conductors – no operating tool needed.

PUSH-IN CAGE CLAMP®

Highest Safety:
All devices provide "safe isolation" with 4 kV test voltage according to DIN EN 61010-1.



Configuration via PC software



Lock-out seal option



Configuration via capacitive touch panel – an innovative display



Pluggable connection technology

Isolation Amplifiers with a Power Supply

Isolation Amplifiers, Pre-Configured

Pre-configured isolation amplifiers convert, amplify, filter and electrically isolate standard analog signals, e.g., 0 ... 10 V into 0 ... 20 mA.

Isolation Amplifiers, Configurable

For signal conditioners, and particularly two-wire signal conditioners, the measured signal is often in the 4 ... 20 mA range as a current value. For the analog input card of a PLC, however, input voltages in the ranges of 0 ... 10 V or 0 ... 5 V are required.

Configurable isolation amplifiers support various standard signals at the input and output; the devices also convert, amplify, filter and electrically isolate analog standard signals. DIP switches accessible from the side can be used to configure both the input and output signals. Measurement range configuration is calibrated via DIP switch.

Universal Isolation Amplifier

In addition to the configurable isolation amplifiers, the universal isolation amplifiers can also be configured via PC configuration software or smartphone app. The configuration software also offers additional options, such as special input and output signal combinations with intermediate values or inversion of the analog output. An error message can be signaled via digital switching output.

Bipolar Isolation Amplifier

Bipolar measurement signals often require processing, e.g., when motor currents are measured in both directions of rotation. Bipolar signals are also processed for recording distances or for better resolution of measurement signals.

Repeater Power Supplies

The repeater power supply energizes transmitters.

Two-wire transmitters regulate their own current consumption proportional to the measured value; the 4 ... 20 mA connection provides auxiliary power for the transmitter and the magnitude of the current is the same as the output measured value.

Three-wire transmitters usually have an active current output for the measured value and additional connections for the supply voltage (auxiliary power).

Signal Splitter

The signal splitter divides a standard signal into two signals. The measured signal can be supplied to different downstream devices without interference.

Example: A signal conditioner supplies 4 ... 20 mA input current.

Output 1 is configured to 4 ... 20 mA and transmits the measured value to a controller.

Output 2 is configured to 0 ... 20 mA and regulates a controller.

Isolation Amplifiers without a Power Supply

Passive Isolators

The required power is obtained from an input signal (4 ... 20 mA) with a passive isolator. Because no extra supply is required, no additional wiring or auxiliary power is needed.

Loop-Powered Isolation Amplifier

The required power is obtained from an output signal (4 ... 20 mA) via the loop-powered isolation amplifier. Because no extra supply is required, no additional wiring or auxiliary power is needed.

Relay Modules



Relay Modules

The professional interface between electronics and peripheral equipment.

Even in modern automation systems, electromechanical relays guarantee a safe connection between process control systems and process and signalling systems. They provide the following functions:

- a high isolation level between input and output circuit
- ability to match different signal levels
- signal amplification and/or signal multiplication, especially for different potentials in the input and output circuits

Modernized relays also offer the following advantages:

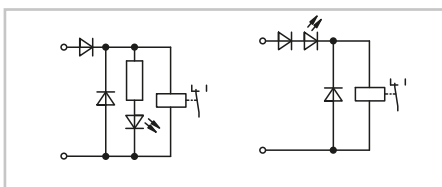
- unaffected by electromagnetic fields and surges
- high short-term overload capacity for the input and output sides
- small switching power losses
- a module for switching of AC or DC

WAGO offers a complete range of relay modules that provide these functions for a wide range of applications. Depending on the function and operating conditions, the relay modules are available with different contacts, contact materials, housings and shapes. The following relay types are also available: bistable switching relays, time delay relays, current pulse switching and safety relays with force-guided contacts.

Definitions of Several Important Technical Terms

Coil-Side Information

The relays can be used within the stated temperature range with nominal voltage plus tolerance at 100% continuous rating. According to the type and application, the relays are triggered with a DC or AC signal. The DC versions (residual ripple $\leq 6\%$) are, unless otherwise stated, equipped with LED function indicators, a recovery diode and a reverse voltage protection diode. The functional details are shown in the wiring diagram.



Possible input circuits of relay modules

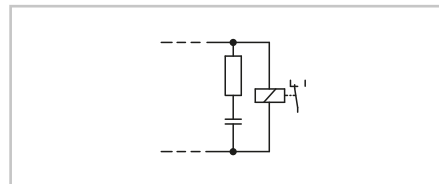
AC versions of select relays equipped with series connected rectifiers (refer to the wiring diagrams) can be triggered with AC and DC at the stated nominal voltage.

The free-wheel function is in this case actuated by the rectifier. The only input circuit on purely AC relays is the status display.

To guarantee safe operation, residual voltages (due to the cable capacitance of long connection lines or leakage currents of semi-conductor switches and their protective circuits) must be lower than the release voltage of the relays. For DC relays, the release voltage is specified with $\leq 5\%$ of the nominal voltage according to EN 61810; for AC relays, it is 15 % of the nominal voltage. The relay may not reset if a high residual voltage exists. Depending on the reason for the residual voltage, changing the cable routing or a parallel connection of an RC element of

$R = 100 \dots 220 \Omega$ and

$C = 220 \dots 470 \text{ nF}$ could remedy this situation.



Modules are optionally available particularly for this application, e.g. relay sockets with pluggable miniature switching relay, integrated base load module 857-358/006-000.

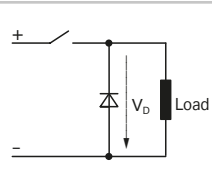
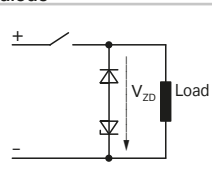
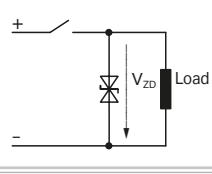
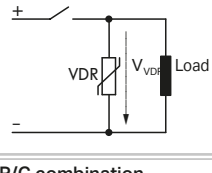
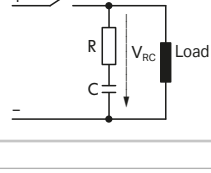
Contact Material

To ensure a reliable contact, the contact resistance should be as low and as constant as possible during the entire service life of the relay. A variety of contact materials can be selected depending on the load type, switching current, switching voltage and the desired number of switching cycles. Possible materials, their properties and instructions when used with WAGO relay modules are shown in the table.

Contact material	Properties and use	Range of values
AgNi 0.15 + Au	High corrosion resistance, low and constant contact resistance at small power ratings, for dry circuits	$\mu\text{V} \dots 30 \text{ V}$ $\mu\text{A} \dots 0.2 \text{ A}$
AgCd O + Au	Low tendency to contact weld, high resistance to contact burn-out at higher power rating, also suitable for lower power ratings	$\geq 5 \text{ V}$ $\geq 10 \text{ mA}$
Ag Cd O, with gold flash	Low tendency to contact weld, high resistance to contact burn-out at higher power rating, with gold flash for additional protection during storage	$\geq 12 \text{ V}$ $\geq 100 \text{ mA}$
Ag Ni 0.15	High mechanical strength, low tendency to contact weld and low contact resistance, universal application at medium loads	$\geq 12 \text{ V}$ $5 \text{ mA} \dots 10 \text{ A}$
Ag Sn O ₂	Low welding tendency, extremely high burn-off resistance at high switching power, suitable for circuits with high switch on/off loads, DC circuits	$\geq 5 \text{ V} / 100 \text{ mA}$ $\geq 10 \text{ V} / 10 \text{ mA}$ $\geq 24 \text{ V} / 1 \text{ mA}$
Ag alloy, with gold flash	High mechanical strength, small tendency to contact weld, wide scope of application for low to medium ratings	10^{-3} W

Contact Switching Protection

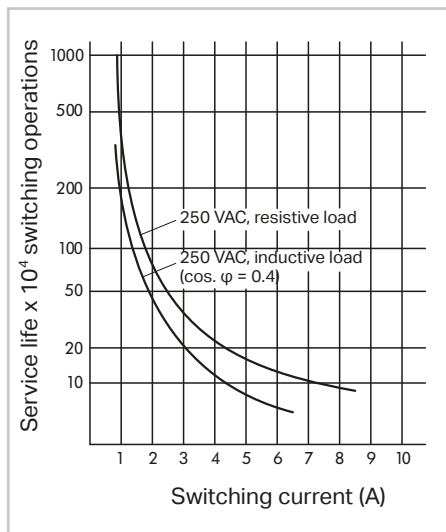
When switching inductive loads (e.g., for contactors or solenoid valves) transients with peak voltages up to thousands of volts will arise. Suppression is necessary as these transients frequently exceed admissible EMC limits. and must therefore be limited by external circuits. They also cause an electric arc at the switching contact, which can destroy the contact or can significantly diminish the relay's service life and reliability. In practical use the following switching protections, which are connected directly at the source in parallel to the load, have proved to be efficient:

Switching of load	Additional off-delay	Defined limitation of inductive voltage	Attenuation when used with bipolar circuits	Advantages:	Disadvantages:
Circulating diode 	large	yes (V_D)	no	<ul style="list-style-type: none"> simple device cost-effective, reliable sizing not critical small inductive voltages 	<ul style="list-style-type: none"> limit only via load resistance
Series of diode / Zener diode 	medium to small	yes (V_{ZD})	no	<ul style="list-style-type: none"> sizing not critical 	<ul style="list-style-type: none"> attenuation only above VZD
Suppressor diode 	medium to small	yes (V_{ZD})	yes	<ul style="list-style-type: none"> cost-effective sizing not critical limitation of positive peaks suitable for AC voltage 	<ul style="list-style-type: none"> attenuation only above VZD
Varistor 	medium to small	yes (V_{VDR})	yes	<ul style="list-style-type: none"> high energy absorption sizing not critical suitable for AC voltage 	<ul style="list-style-type: none"> attenuation only above V_{VDR}
R/C combination 	medium to small	no	yes	<ul style="list-style-type: none"> RF attenuation via power storage suitable for AC voltage limiting independent of level 	<ul style="list-style-type: none"> Accurate dimensioning required High inrush current

Relay Modules

Service Life

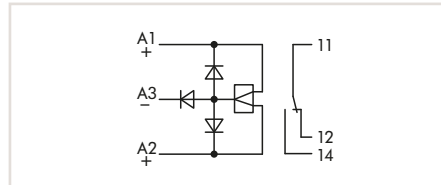
A distinction must be made between the mechanical life, which indicates the number of switching cycles without contact load, and the electrical service life at maximum load, which indicates the number of switching cycles with maximum switching power and resistive load. Reduced power increases the service life compared to the value of the maximum load. The following figure shows the typical curve between switching current and service life of a relay.



More details upon request

Description of Select Relays

Bistable Switching Relays



Bistable switching relays have 3 coil contacts. According to the wiring scheme, the relay is switched into "working condition" (contacts 11 ... 14 closed) by the common connection A3 and the connection A2 and into "rest position" (contacts 11 ... 14 opened) by the connection A1. After removing the control signal, the relay returns to its respective position and can only be switched over by a control signal circuit. The bistable switching relays are only available for direct voltage with positive or negative triggering.

Current Pulse Switching Relay

One current pulse is needed to change the relay from the rest position to the working position and vice versa. During the triggering process, one of two status indicators displays the actual contact position. The current pulse switching relay is available for direct and alternating voltage.

Safety Relay

Force-guided safety relays, have become increasingly recommended and specified for self-regulated systems as they provide protection for personnel, machines and installations. Relays with force-guided contacts are an essential safety component for these circuits, particularly when defects occur. WAGO offers these functions in special relay modules with force-guided contacts as based on EN 61810-3.

If a partial or complete standstill is required in the event of a failure (e.g., in medical technology or chemical processes) each control contact can be polled and evaluated. Irrespective of whether a single or complete control for the NO contact is implemented, the SF relay operates in such a way that the other equipment is switched off even if a NO contact is welded. The failure is recognized by the control contact while the other contacts are still able to open to interrupt circuits.

Time Delay Relays

WAGO time delay relay modules are electromechanical timer relays with an integrated time response, e.g., acc. to EN 61812-1. The time ranges can be adjusted via potentiometer for either continuously variable or linear operation. A status LED indicates the switching condition of the relay.

Optocouplers

Optocouplers: The Modern and Efficient Alternative

As the connecting element between process interface and electronic control and signaling systems, the optocoupler modules offer the following advantages compared with mechanical relays:

- long service life, because there is no mechanical wear
- high switching frequency because of fast switching times
- unaffected by vibration
- no contact bounce
- "noiseless" switching
- low driving capacity.

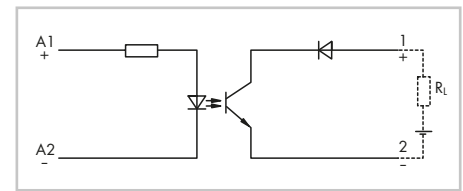
For all interfaces between control and load circuits that rely on these advantages, WAGO offers a complete optocoupler range for the following functions:

- electrical isolation between input and output circuit
- adaptation to different signal levels
- signal amplification

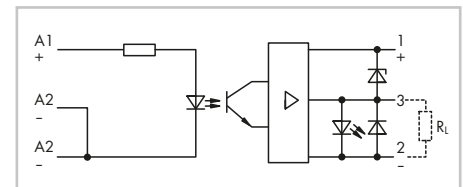
Input Circuit

According to the type, triggering the optocoupler modules is performed via DC voltage (residual ripple RR <6%) or AC voltage (50 ... 60 Hz).

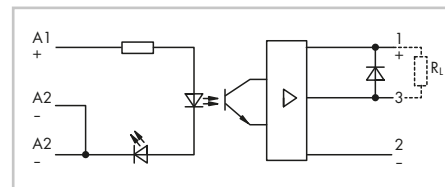
In the DC type, a reverse voltage protection diode is always provided; in the AC type optocoupler element, a rectifier is included. The optocoupler modules are equipped with a LED function indication at either the input side or at the load side, as shown in the wiring diagram.



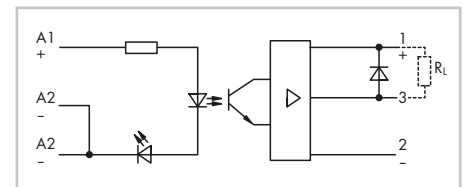
2-wire output



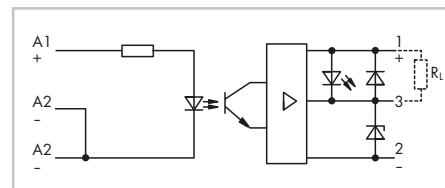
3-wire output positive switching



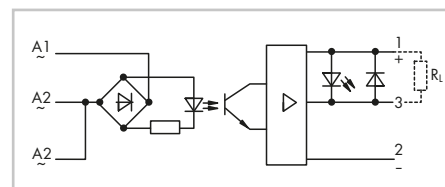
DC triggering with LED function indication in the triggering circuit



3-wire output negative switching



DC triggering with LED function indication in the load circuit



AC triggering with LED function indication in the load circuit

Due to the low threshold voltages, care must be taken to ensure interference and residual voltages caused by the capacitance of long signal lines or the residual off-current of semiconductor devices and their protection circuits do not cause any malfunctions.

Output Circuit

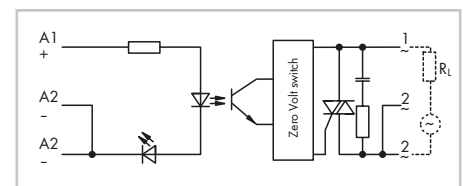
Depending on the application, an optocoupler module for the AC or DC supply may be chosen. In the case of DC outputs, they can be:

- 2-wire output
- 3-wire output positive switching
- 3-wire output negative switching

In addition to these different functional outputs, the output voltage range and the maximum switching current must be observed.

Also note the correct polarity ensure correct operation.

In order to protect the output transistors, inductive loads must always be equipped with a protective circuit, e.g., a recovery diode. For other types of protective measures, the cut-off voltage peaks must be lower than the indicated cut-off voltage of the output transistors. For the AC outputs a Triac is used as the switching element.



In order to avoid high turn-on currents, the AC output is equipped with a zero-voltage switch which turns on the load at the zero-voltage point. In the current zero-crossing, the Triac will cut off the load. Besides observing the maximum switching voltage and maximum switching current for inductive loads, ensure the provision of a protection circuit to cut-off peaks to a value below the reverse voltage.

Housings and Shapes

Nowadays when equipment is designed many scenarios need to be considered. Some of which are user and maintenance friendly, limited budgets, safety, availability, space requirements and simplicity in design and usage.

WAGO offers relay and optocoupler modules in various shapes and sizes to overcome any of the restraints posed by space requirements.

Relay Socket with Pluggable Miniature Switching Relay, 788 Series



Relay socket with pluggable miniature switching relay

The 788 Series relay socket forms an excellent basis for switching applications using pluggable miniature switching relays (1 or 2 changeover contacts) in industrial and process automation.

In addition to its compact design 15 x 53 x 86 mm (W x H x D), the relay socket also stands out thanks to a number of user-oriented features, with the associated benefits for the user.

The lever facilitates relay replacement even when the relay sockets are placed close to each other.

The sockets can be ordered as complete components including relay and status indication or as a single component.

Relay Modules and Optocoupler Modules, 857 Series



Relay module with mounted miniature switching relay

Commoning, not discrete wiring – the new 6mm-wide 857 Series relays and optocouplers not only share a common profile, but in addition one in line jumper can be used to connect the supply voltages, etc., to all modules. The pluggable relays can simply be replaced from the top.



Relay and Optocoupler Modules

Pluggable Function Modules, 286 Series



Pluggable function modules

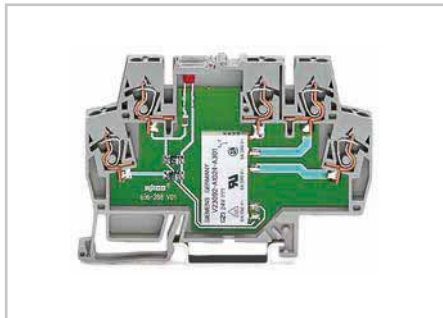
The terminal blocks for pluggable modules offer the greatest degree of flexibility and maintenance-friendly service. The terminal block for pluggable modules is mounted on the carrier rail and wired like a normal terminal block. If service is required, this element can be replaced in one step, without having to deal with the system wiring. This saves space and additional wiring effort.



Pluggable function modules

The optocoupler and relay modules are ideal additions to a comprehensive function module program, allowing any required functions to be implemented in the control cabinet by means of a pluggable module system.

Relay Modules and Optocoupler Modules, 859 Series



Relay module

The 859 Series is a complete product series that is ideal for the interface level in any industrial application, thanks to the wide range of relays and optocouplers. These units excel in tight spaces, thanks to their narrow 6 mm design. Simple commoning at the control and load side enables quick and easy looping through of common input and output potential.

858 Series Sockets with Industrial Relays



Socket with an industrial relay

Its robust design and the shock-proof CAGE CLAMP® connecting technology used ensures continuous and uninterrupted operation of any kind of system. The right choice for applications requiring up to 4 changeover contacts. The dual conductor connection enables potentials to be distributed as required.

Relay Modules in a DIN-Rail-Mount Enclosure, 789 Series



Relay modules in a DIN-rail-mount enclosure

The range of uses for the 789 Series switching relays spans from simple lighting controls in building services, such as in construction of apartments, hotels, office buildings or parking garages, etc., up to installations in industrial control cabinets. The 17.5 mm-wide design in series bay enclosures is particularly well-suited for installation in distribution boards and meter mounting boards. The relay modules with manual operation allow simple emergency operation to be implemented.

Interface Modules

The Safe and Maintenance-Free Connection Level

Interface modules connect electronic to electromechanical functions at the control level.

They connect:

- signal transmission control system ↔ field and
- signal distribution, control system ↔ field

and vice versa. They allow prefabricated plugs to interface to discrete field wiring. WAGO offers a wide range of interface modules for commonly used connector types. The use of these interface modules offers the following advantages in the system wiring:

- easy and time-saving planning and calculations
- rapid wiring, starting and fault elimination by clearly arranged wiring and clear pole marking, reduction of wiring faults
- safe and maintenance-free connection of the signal lines with the CAGE CLAMP® terminal strips
- high packing density creates space-saving modules

The interface modules are standard in a universal mounting carrier for DIN 35 carrier rails with the following connectors:

Subminiature-D Connectors acc. to DIN 41652

Interface modules for male and female connectors are available with 9, 15, 25, 37 or 50 contacts. Compared with the standard solder connection, the mating connector with IDC connection offers additional advantages.

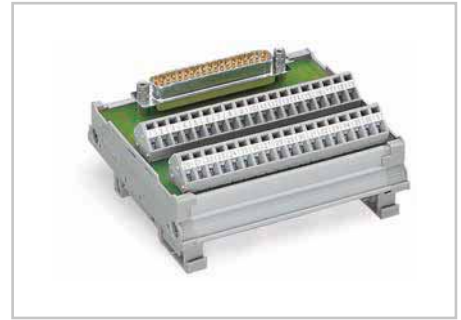
Connectors acc. to DIN 41651

Interface modules with 10-, 14-, 16-, 20-, 26-, 34-, 40-, 50- and 64-pole connectors are available for ribbon cable connectors.

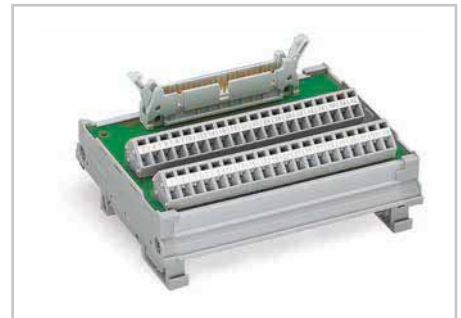
RJ45 Interface Modules

The RJ45 interface modules are switch-gear cabinet components for passive and structured network cabling. A range of RJ45 interface modules in different variants that can be fitted on carrier rails are available for the various applications:

- with shield clamping saddles
- as crossover
- with additional power contacts



Interface module with D-subminiature connector acc. to. DIN 41652



Interface module with connector acc. to. DIN 41651



RJ45 interface module

EPSITRON® – Advanced Power Supply System 787 Series

PRO Power Supplies



Slimline, 1- and 3-phase, primary switch mode power supplies feature a wide input voltage range, stabilized, adjustable 12, 24 or 48 VDC output voltage, output power up to 960 W and high efficiency. An integrated PowerBoost (up to 100 % output power for 4 seconds or alternatively 150 % for 8 s) allows reliable starting of heavy loads with high inrush currents, eliminating expensive oversizing of the switch mode power supply. The TopBoost function, which provides a much higher output current of up to 60A for 50ms, permits use of standard circuit breakers for protection on the secondary side. This enables safe tripping within the time limits required by the EN 60204 standard.



Select devices utilize the LineMonitor feature for current and voltage monitoring, fault memory and parameterization options via LCD display, on-unit function keys, or free monitoring software from a PC and PLC. This allows the power supply to replace additional devices, such as phase failure and phase sequence monitoring devices or operational hour meters.

The power supplies without the LineMonitor offer a DC O.K. contact for monitoring the output voltage as well as a stand-by mode to switch off the device output via remote input, while minimizing power consumption. CAGE CLAMP® pluggable terminations permit efficient pre-wiring.

CLASSIC Power Supplies



Single-phase, two-phase and three-phase, primary switch mode, industrial power supplies provide a wide input voltage range and robust metal housings. The CLASSIC Power Supplies have a stabilized, adjustable output voltage and provide short-circuit and overload protection. The devices achieve high efficiency and the integrated LED status indicator conveniently provides operational status at a glance. CAGE CLAMP® pluggable terminations permit efficient pre-wiring. The CLASSIC Power Supplies are available in four nominal output voltages: 12 VDC, 24 VDC or 48 VDC, as well as 30.5 VDC for AS-Interface networks. Depending on the voltage outputs of up to 960 W are available. CLASSIC Power switched-mode power supplies with outputs of up to 120 W comply with the EN 60335-1 standard, making them suitable for use in devices and machines subject to EN 60335-2 (so-called household appliance standard). CLASSIC Power switch mode power supplies with outputs of 120 W and higher are provided with a TopBoost, enabling the use of conventional circuit breakers for secondary-side protection. Virtually all devices of the CLASSIC Power family are provided with DNV GL approval for use in shipbuilding or onshore/offshore applications.

ECO Power Supplies



Single-phase and three-phase, primary switch mode power supplies in sturdy metal housing offer a wide input voltage range, without manual switching. The stabilized, front-panel adjustable 24 VDC output voltage is protected against open and short circuits, and constant current operation is provided in the overload range up to 180%. LEDs quickly provide operational status at a glance. CAGE CLAMP® provides fast, vibration-proof and maintenance-free terminations, allowing DIN-rail mounting in several positions as well as screw mounting without a DIN-rail. These devices also have conformity with EN 60335-1, allowing use in appliance building. Individual devices with ATEX, IEC Ex as well as ANSI/ISA 12.12.01 approval are available for use in Ex area Zone 2.

COMPACT Power Supplies



DIN-rail-mountable single-phase power supplies for use in meter boards, junction boxes, small and system distribution boxes or flat control panels in buildings and industrial applications; the devices with nominal output voltages of 5, 12, 18 or 24 VDC are protected from overloads and short circuits, are provided with an integrated status LED and offer outputs of up to 150 W.

Some devices come with a pluggable female connector with integrated Push-in connection technology, ensuring particularly rapid and convenient wiring. This family also includes devices that comply with EN 60335-1 and are suitable for use in appliance building. Suitable devices with DNV GL approval are also available for use in shipbuilding and onshore/offshore applications.

Electronic Circuit Breakers



Configurable protection via 2-, 4- or 8-channel electronic circuit breakers, for shutting down faulty 12, 24 or 48 VDC current paths. Offering adjustable trip times, the Electronic Circuit Breakers can respond to short circuits/overloads quicker than traditional circuit breakers or fuses, or when unintended start-ups must be prevented in the event of a ground fault (see EN 60204). This is particularly advantageous when using long cables between a power supply and load where loop resistance may be very high. Due to their faster and more precise tripping characteristics, as well as the possibility to set at six times the nominal current, electronic circuit breakers have clear benefits. The devices also come with integrated current and voltage monitoring, the possibility to charge high capacitive loads, a slim design, pluggable connection technology as well as marking and sealing options. Electronic circuit breakers with active current limitation are also available as an option. These advanced features enable the Electronic Circuit Breakers to reliably prevent voltage drops in the event of a short circuit. A group message notifies whether channels have tripped. A remote reset is also possible. Furthermore, the digital signals provided enable the simple polling and switching of each individual channel. Voltage and current values can also be transferred.

Uninterruptible Power Supplies (UPS)



The Uninterruptible Power Supply (UPS) provides reliable power applications impacted by long-term power outages. The UPS consists of a charger, controller and a connected battery with different capacities. In battery operation, 24 VDC can be provided for several hours depending on the load current and battery capacity. The charger and controller are supplied with 24 VDC from an external power supply – capacity must be matched to the load. Operation, configuration and diagnosis are simplified by an optionally integrated LCD with keypad, or free software using an RS-232 interface (for connection to a PC or PLC). The battery modules come with "Battery Control" technology. They have an integrated microcontroller with temperature sensor, allowing for temperature-controlled charging via charger and controller, which extends the battery's service life. The remaining battery life is determined, according to which the charging and control unit can generate a signal for battery replacement.

EPSITRON® – Advanced Power Supply System 787 Series

Redundancy Modules



The redundancy modules have two integrated power diodes for parallel connection of power supplies, while improving power supply availability or increasing the total current for the 12, 24 or 48 VDC loads.

An optional signal contact reports the failure of one or both input voltages, which is also displayed via LED.

Capacitive Buffer Modules



Maintenance-free capacitive buffer modules ensure smooth operation and protect data during shorter 24 VDC power interruptions. Depending on the output current and buffer capacity, buffer times up to several seconds can be achieved. Control units are particularly sensitive to short power interruptions. This is why an integrated signal contact reports buffer operation, offering the control unit sufficient time for preventive measures (e.g., saving valuable production data or program parameters).

DC/DC Converters



DC/DC converters available in 6 mm wide terminal block housing or DIN-rail mount carrier. These converters are ideal for applications where it is not necessary to use a separate power supply with special voltage due to low power requirements (e.g., when supplying sensors, actuators or DALI bus devices).

Rail-Mount Modules – Power Supplies

Conventional transformer power supply with bridge rectifier, smoothing capacitors and stabilized output voltage via longitudinal voltage regulator. This power supply is ideal for supplying small loads with nominal output voltages of 24 VDC, 12 VDC, ± 12 VDC and ± 15 VDC. The low residual ripple makes the units well suited to applications using analog technology. CAGE CLAMP® provides fast, vibration-proof and maintenance-free terminations. The modules are DIN-rail mountable.

Rail-Mount Modules – Constant Voltage Sources

Constant voltage sources provide stabilized 24 VDC voltage via integrated longitudinal voltage regulator. CAGE CLAMP® provides fast, vibration-proof and maintenance-free terminations. The modules are DIN-rail mountable.

Communication Cables

The communication cables connect the RS-232 interface for power supplies with integrated LineMonitor (787-85x), electronic circuit breakers (787-86x) and UPS charger and controller units (787-87x) as well as the power supply unit with the integrated UPS charger and controller (787-1675) with the RS-232 interface of a PC or PLC. When combined with free software it provides easy parameterization and diagnostics for these power supply solutions.

Overvoltage Protection

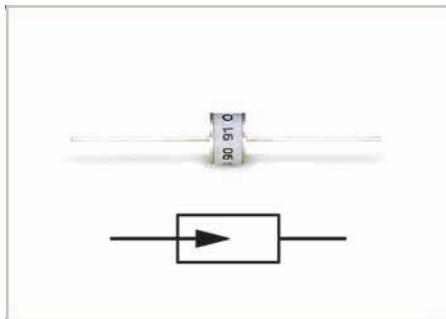
Overvoltage Protection for Increased Safety and Longer On-Line Operation

On-the-line overvoltages cause most operating failures for measuring, control, data and power lines. Failure of electronic and semiconductor components due to surges can cause operating interruptions. The overvoltage (also called transients) can be generated by switching electrical equipment on or off or by lightning discharges. Measures for protecting equipment and devices can be divided into the following categories depending on the application

- Coarse protection
- Medium protection
- Fine protection

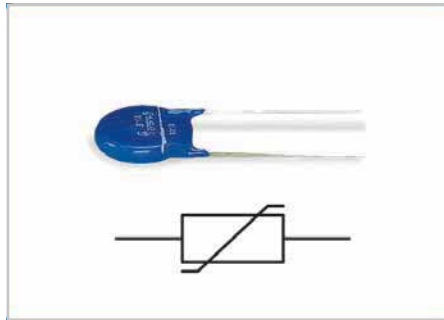
The boundaries between these levels of protection may not be sharply defined. To implement the appropriate protection measures, various components are used for discharging transient overvoltage, depending on the protection type. The following components have proven performance in these applications:

Gas-Filled Surge Arrester

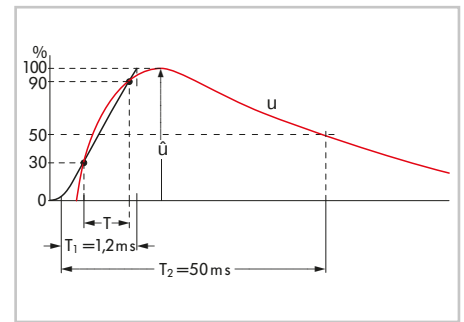


The gas filled surge arrester is comprised of two electrodes in a ceramic or glass tube filled with a pressurized inert gas. Once the ignition voltage is reached, resistance drops due to ionization and current begins to flow. The resistance of the device drops from high to low as it conducts. The voltage across the device after the arc is struck is typically 10 V ... 30 V. Therefore, the current will continue to flow until the voltage drops below this level. As this is not a guaranteed occurrence in typical power situations, a fuse must precede the device to ensure disconnection from the supply. This is always the case if the nominal voltage of the protected network is greater than 12 VDC and the nominal voltage of the power supply and the protected circuit is greater than 100 mA.

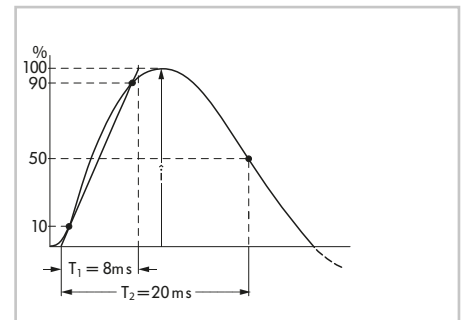
Varistor



A varistor is a voltage-dependent resistor, in which the resistance becomes low after their "nominal voltage" is exceeded and for the voltage range above it, and can thus cut off any overvoltages through high discharge currents. Varistors can age with continued surge conduction, resulting in lower impedance even in the lower voltage range. However, this normally only occurs when a varistor frequently discharges transients. In this case, they must be replaced and specific time intervals.



Voltage pulses 1.2/50
IEC 60060-1



Current pulses 8/20
per EN 62475:2010

Application Recommendations

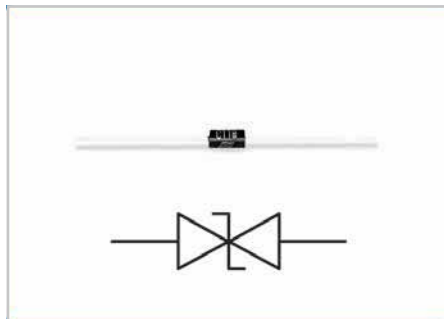
The advantages of gas-filled surge arresters lie in their high current carrying capacity, making them ideal for coarse protection. One disadvantage, particularly in the medium protection range, is the relatively long response time, as well as the power follow current.

Varistors have a considerably shorter response time; however they also have lower leakage currents. This makes them more suitable for medium protection as they offer limited applications for coarse protection.

If the connection lines of electronic equipment are already "fine" protected, general coarse and medium protection measures are sufficient. If this is not the case, suppressor diodes with a very short response time may be employed as fine protection. WAGO offers a complete range of modular terminal blocks with integrated surge arresters for coarse, medium and fine protection.

Depending on the application, one can choose the appropriate type from the previously mentioned surge arresters. These are electrically connected in the modular terminal blocks between the connection point and mounting rail. Snapping the terminal block onto the grounded (earthed) mounting rail automatically ensures the required overvoltage protection.

Suppressor Diode



Suppressor diodes have electrical characteristics similar to Zener diodes, but are rated for surge currents. Once the rated breakdown voltage is exceeded (in the non-conductive direction), the diode becomes a conductor. The suppressor diode differs from a Zener in its higher current carrying capability and faster response time (in the pico-second range).

Test Impulse

Surge arresters are subject to standardized test pulses in order to classify capabilities; the effectiveness of protection measures with reference to dissipation capacity and voltage arresting. The form and level of the test pulses are defined by IEC 60060-1 and EN 62475:2010. Preference is given to voltage pulses of 1.2/50 and current pulses of 8/20.



Double-deck terminal block, with varistor direct connection to DIN 35 rail

Frequently, only one surge arrester is fitted for cost reasons. However, due to the fact that one surge arrester alone cannot optimally ensure several protection functions, combinations are recommended. Care must be taken to ensure that the single-stage protection devices are decoupled sufficiently by inductors or resistors.

In addition to single-stage surge arresters, WAGO also offers multistage surge arresters, combining components for different applications. These pluggable modules are snapped into "carrier" terminal blocks. These are DIN rail-mounted and offer secure and maintenance-free CAGE CLAMP® terminations for conductors 0.08 mm²/28 AWG to 2.5 mm²/14 AWG.



Pluggable surge suppression modules with on-unit warnings

Interference suppression modules are a special category here.

In addition to overvoltage protection, a high frequency interference filter can be added to the circuitry. This filter cannot only protect the equipment from high frequency energy transmitted by connecting wires, but also prevents a transmission of disturbances to the supply lines. The main component of a filter is an LC network, which produces a mismatch between the filter impedance and the impedance of the disturbance path. This reflects any disturbance back to its source.

Definition of Several Important Technical Terms

Nominal Operating Voltage (U_{BN})

The nominal operating voltage corresponds to the voltage which may be permanently connected to the appropriate connection terminals of the overvoltage protection module. Alternating voltages are quoted as effective values.

Max. Operating Voltage (U_{Bmax})

The maximum operating voltage corresponds to the voltage which may be permanently connected to the appropriate connection terminals without the operating properties changing or activating the individual module's protection elements.

Nominal Current (I_N)

The nominal current corresponds to the current which may permanently flow through the connection terminals of the overvoltage protection device.

Nominal Discharge Current (I_{SN})

The nominal discharge current is the maximum value of a current having the 8/20 μ s waveform, which can flow through the surge arrester five times within a time period of 30 seconds (VDE) without destroying it.

Max. Surge Current (I_{Smax})

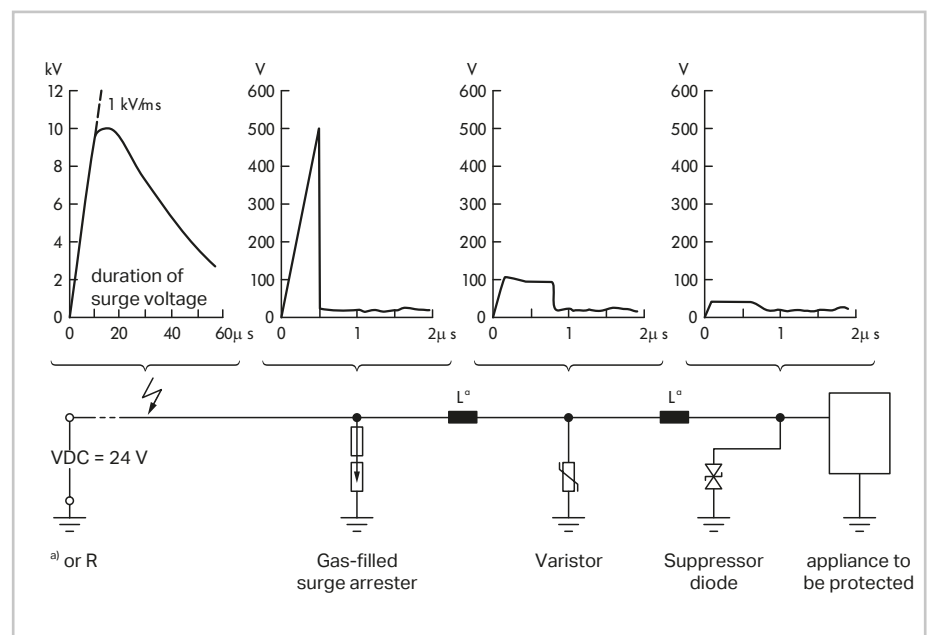
The maximum surge current I_{Smax} defines the maximum value of a current having the 8/20 μ s waveform, which can flow through the surge arrester once without destroying it.

Protection Level (U_p)

The protection level is the value of the residual voltage occurring on the "protected" side of the surge arrester when applying the rated discharge current.

Response Time (t_{an})

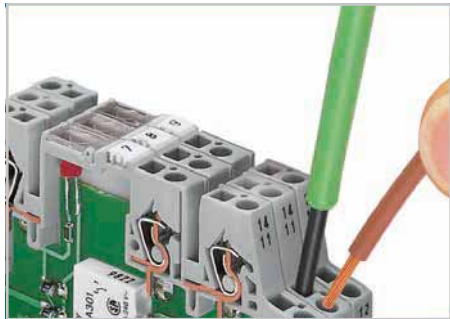
The response time is primarily based on the physical properties of the surge arresters and is dependent upon the wave front duration of the surge voltage. WAGO's data refers to a voltage rise 1 kV/ μ s.



Function diagram of a multi-stage surge voltage protection module

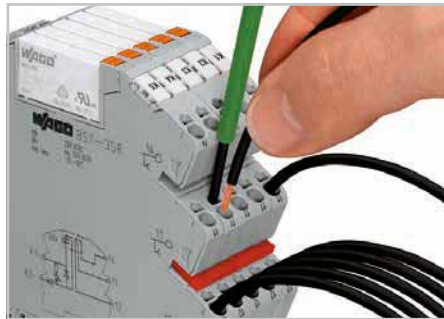
Installation Notes

Relay Modules and Optocoupler Modules, 859 Series



Connection of conductor

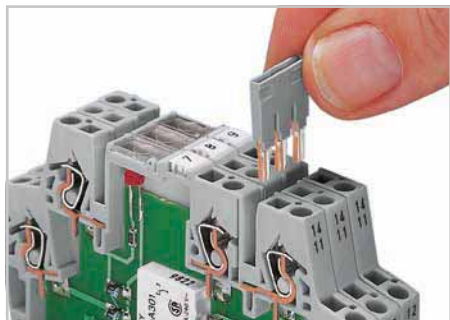
Relay Modules and Optocoupler Modules, 857 Series



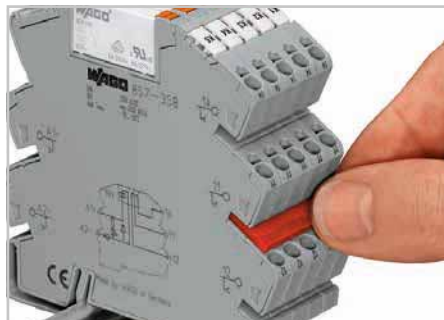
Connection of conductor



Operation of the relay ejector



Easy commoning using adjacent jumpers



Easy commoning using adjacent jumpers



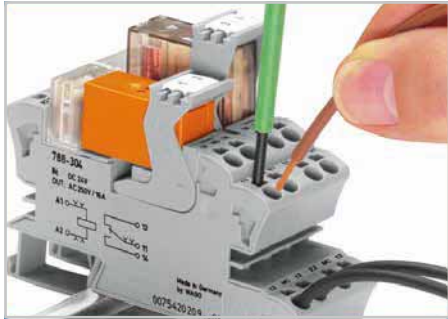
Marking using miniature WSB quick marking card



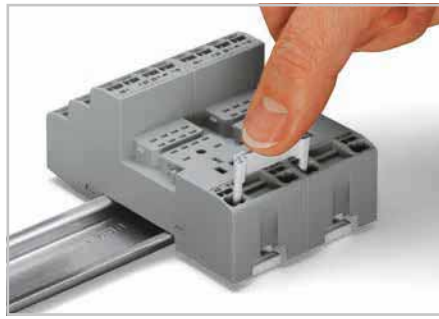
Marking using WMB Multi markers

Sockets for Miniature Switching Relay/
Optocoupler, 788 Series

Sockets with an Industrial Relay,
858 Series



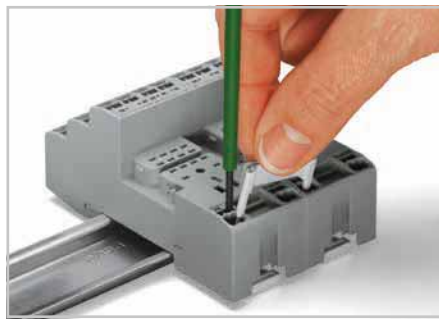
Connection of conductor.



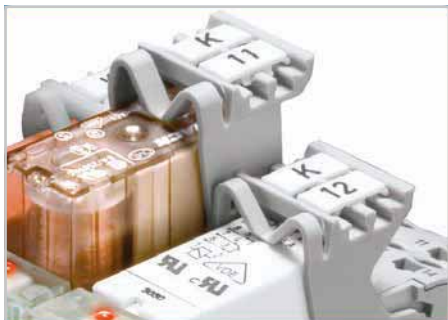
Easy commoning using adjacent jumpers



Easy commoning using adjacent jumpers



Remove jumper with screwdriver.



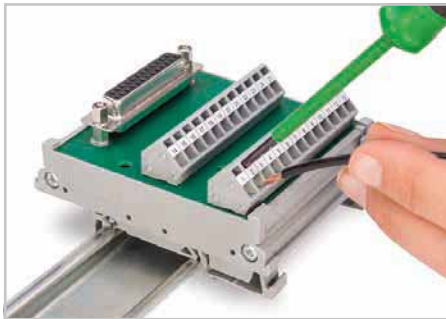
Marking using WMB Multi markers and group marker carriers



Marking using WMB Multi markers and group marker carriers

Installation Notes

DIN-Rail-Mounted Interface Modules, 289 Series



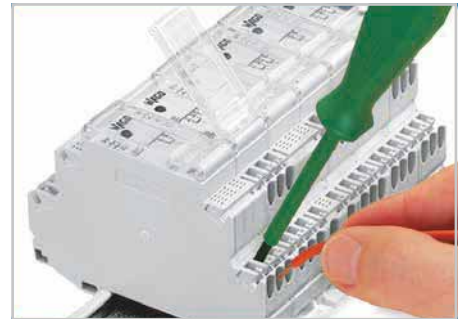
Connection of conductor "front-entry"

Pluggable Function Modules, 286 Series

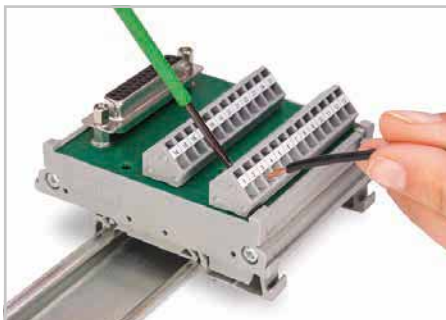


Coding ensures correct polarity

Relay Modules in a DIN-Rail-Mount Enclosure, 789 Series



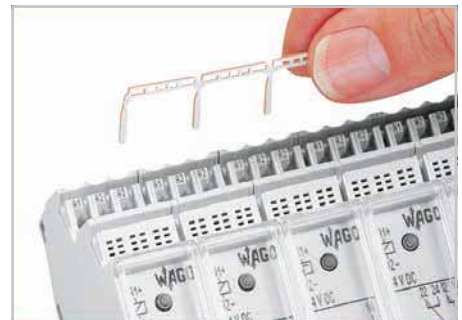
Connection of conductor.



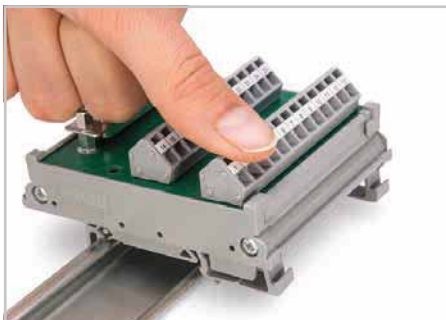
Connection of conductor "side-entry"



Pluggable electronic modules, for application on 2- or 4-conductor carrier terminal blocks



Easy commoning using adjacent jumpers



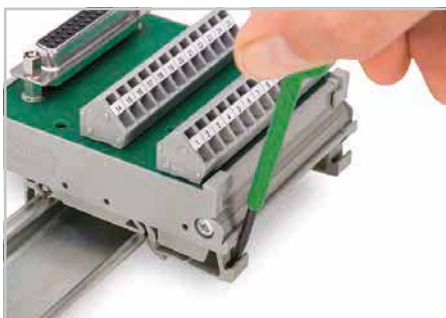
Assembly of a module on the carrier rail



Marking using WMB Multi markers



Marking using miniature WSB quick marking card



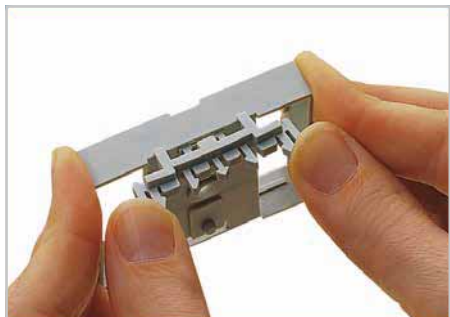
Removal of a module from the carrier rail



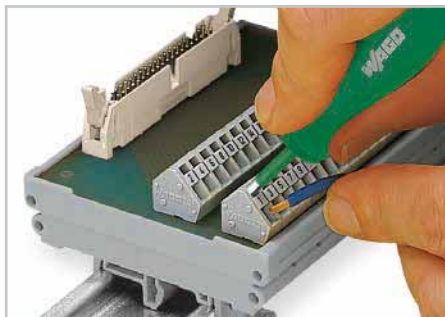
Easy testing at touchproof contacts

Interface Modules, 289 Series

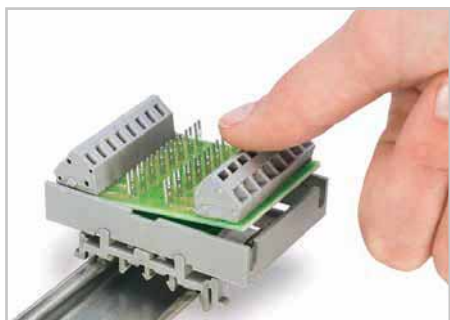
Interface Modules, 289 Series



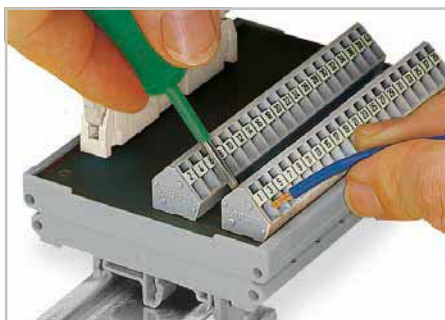
Mounting carrier, gray, snap-fit mounting of universal mounting feet



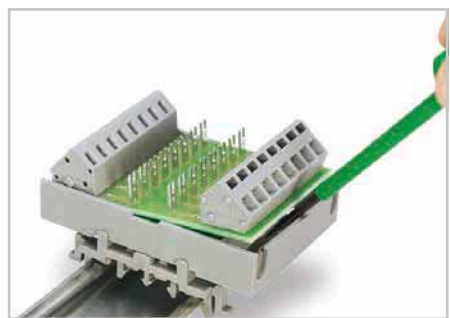
Connection of conductor "front-entry"



Fitting of an individual module to the mounting carrier



Connection of conductor "side-entry"



Removal of an individual module from the mounting carrier

Product Support From

Consulting Services

- Selection of the fieldbus
- Use of components
- Combination of components
- Cooperation with other suppliers



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- Trained staff
- PLC & PC control
- Multiple fieldbuses
- Projects:
 - Automotive industry
 - Machine building
 - Chemical industry
 - Food processing
 - Building automation
 - Process engineering
 - Process control
 - and many more



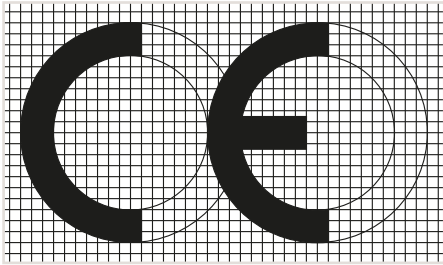
We will help you

- Product documentation
- Manuals
- Application notes
- By telephone
- On-site

CE Marking and EC Directives

CE conformity marking:

The CE conformity marking consists of the characters "CE", with the following script:



Communauté Européenne
(European Community)

The CE marking shall be affixed to the electrical equipment, or if that is not possible, to the smallest packing unit. With the CE marking, manufacturers attest conformity of their products to the relevant directives.

In addition to the CE marking, the manufacturer provides an EC "Declaration of Conformity" for the product. This EC "Declaration of Conformity" must be retained and submitted to a national surveillance authority upon request.

The **EC directives** are legally binding specifications of the European Union. Their goal is the harmonization of legal and administrative regulations in the various EU member states, in order to prevent trade obstructions.

In order to "market" a product, it must comply with the relevant directives. The product may be subject to several directives, e.g. the EMC and the low voltage directives.

Low Voltage Directive

The safety of electrical equipment is guaranteed by the Low Voltage Directive. This directive covers 'complete' electrical equipment designed for use with a voltage rating of between 50 and 1000V for alternating current and between 75 and 1500V for direct current. Products falling within the scope of the Low Voltage Directive that are designed in such a way that they can be used in other electrical devices and whose safety, for the most part, is dependent on how these components were built into the end product and what features the end product has are defined as basic components in accordance with the Low Voltage Directive. The Low Voltage Directive doesn't apply to basic components.

EMC Directive

The EMC Directive implies that a product must meet the limits of the radiated electromagnetic disturbance and also requires that a product must be immune to electromagnetic interference. Electromagnetic passive components or components with no direct function, like resistors, diodes, capacitors, switching relays or cables (in the form of passive printed circuit boards) are not considered as apparatus within the meaning of the EMC Directive.

Machinery Directive

The Machinery Directive does not apply to WAGO products.

Explosive Atmospheres Directive (ATEX)

Directive for devices and protective systems intended for use in hazardous locations.

Radio Equipment Directive

A device or relevant component thereof, capable of communication by emitting and/or receiving radio waves utilizing the spectrum allocated to terrestrial/space radio communication, falls within the scope of the Radio Equipment Directive. As such, these devices and components are tested and labeled accordingly. This label implicitly includes both Low Voltage and EMC Directives, since the Radio Equipment Directive also encompasses the safety targets for both of these directives.

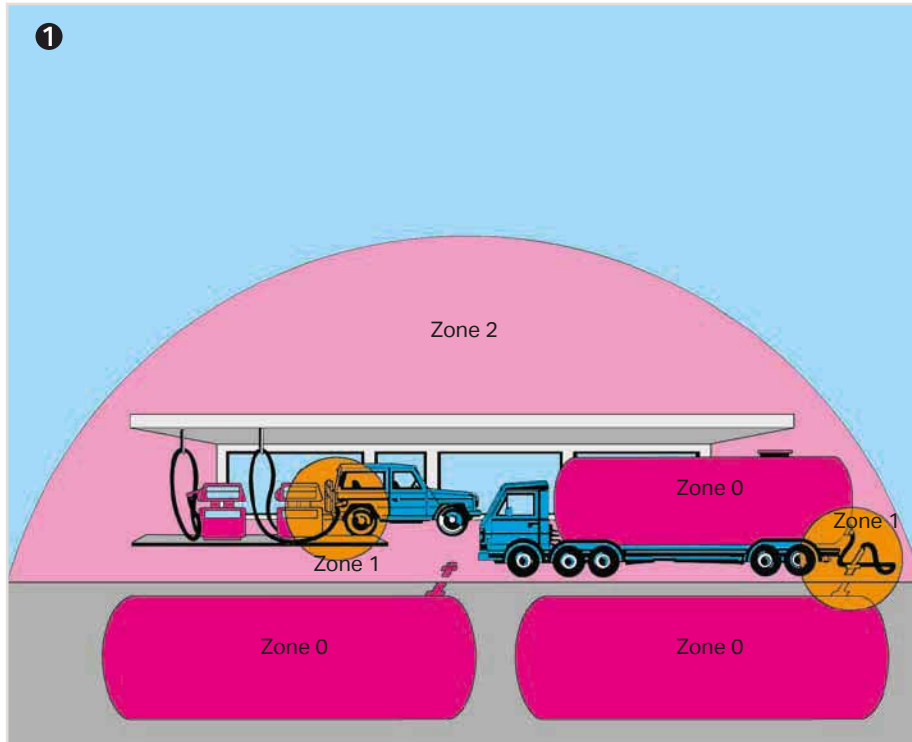
General Technical Information for Electrical Equipment in Hazardous Environments

Hazardous Environments

Hazardous environments are areas in which the atmosphere may become explosive. Explosive atmosphere is defined as a mixture of ignitable substances

in the form of gases, vapors or mixtures with air under atmospheric conditions in critically mixed ratios such that excessive high temperature, arcs or sparks may cause an explosion.

DIN EN 1127-1 and all other related standards that are commonly known divide up hazardous areas according to the likelihood of the occurrence of an explosive atmosphere into the following zones:



① Hazardous environments as a result of combustible gases, vapors or mist.

Zone 0

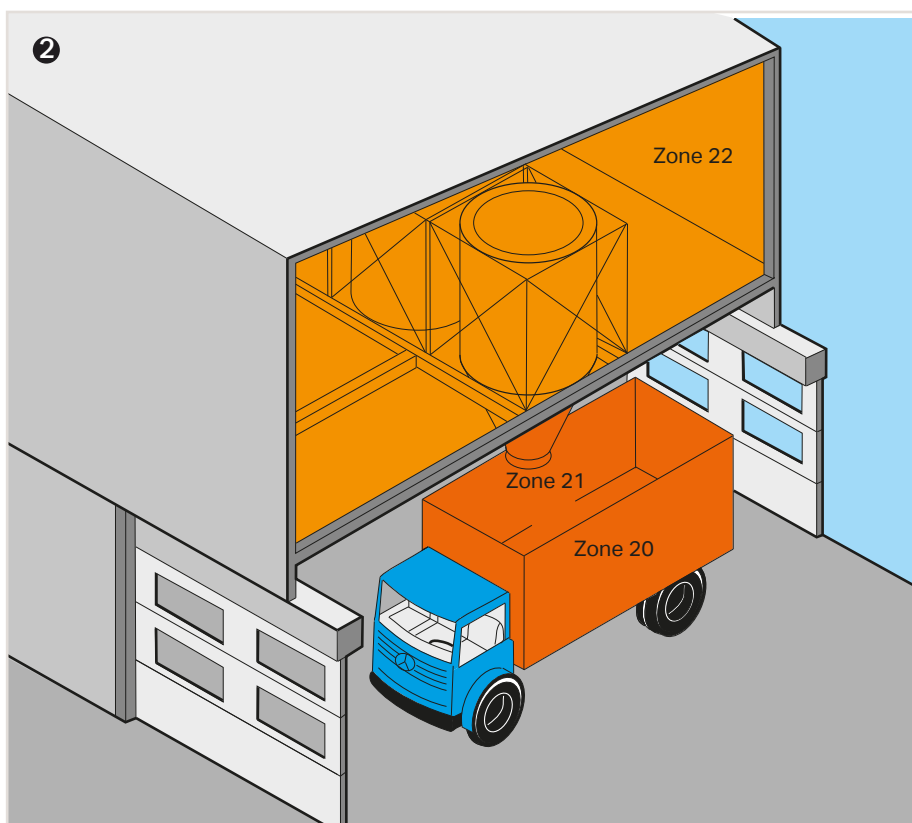
Area in which an explosive gas/air mixture is continuously present or present for long periods.

Zone 1

Area in which an explosive atmosphere can occur during normal operation

Zone 2

Area in which an explosive atmosphere is unlikely to occur under normal operation and if it does it will be for a short period.



② Hazardous areas caused by combustible dust

Zone 20

Area in which an explosive dusty atmosphere is present "permanently", for "long periods" or "frequently" and in which deposits of combustible dust of unknown or excessive thickness may be formed. Dust deposits alone are not grounds for classification as Zone 20.

Zone 21

Area in which an explosive dusty atmosphere is present "occasionally" under normal operating conditions and in which deposits or layers of combustible dust can generally be present.

Zone 22

Area in which an explosive dusty atmosphere is not likely to occur during normal operation and, if it occurs, will only exist for a "short period", or in which accumulations or layers of combustible dust are present.

Please refer to the manuals for more information on explosion protection.

Electromagnetic Compatibility and Mechanical Strength (Industrial- and Residential Areas)

Immunity to interference for industrial areas acc. to EN 61000-6-2

Test Specification		Test Values	Evaluation Criteria *)
EN 61000-4-2	ESD	4 kV/8 kV (contact/air)	B
EN 61000-4-3	Electromagnetic fields	10 V/m: 80 MHz ... 1 GHz	A
		3V/m: 1.4 ... 2.0 GHz	A
		1V/m: 2.0 ... 2.7 GHz	A
EN 61000-4-4	Burst	1 kV/2 kV (data/supply)	B
EN 61000-4-5	Surge	Data: - / 1 kV (line: line – line : ground)	B
		DC supply: 0.5 kV / 0.5 kV (line : line – line : ground)	B
		AC supply: 1 kV / 2 kV (line : line – line : ground)	B
EN 61000-4-6	RF disturbances	10 V/m, 80 % AM (0.15 ... 80 MHz)	A
EN 61000-4-8	Magnetic field	30 A/m, 50/60Hz	A
*) Criteria A: The device must work in accordance with the regulations during and after the test. Criteria B: The device must work in accordance with the regulations after the test.			

Emission of interference for residential areas acc. to EN 61000-6-3

Test Specification		Limit Values Quasi Peak	Frequency Range	Distance
EN 55016-2-1	AC supply, conducted	66 ... 56 dB(μ V)	150 ... 500 kHz	
		56 dB(μ V)	500 kHz ... 5 MHz	
		60 dB(μ V)	5 ... 30 MHz	
EN 55016-2-1	DC supply/data line conducted	79 dB(μ V)	150 ... 500 kHz	
		73 dB(μ V)	500 kHz ... 30 MHz	
EN 55016-2-3	radiated	30 dB(μ V/m)	30 ... 230 MHz	10 m
		37 dB(μ V/m)	230 MHz ... 1 GHz	10 m
EN 55022	Telecommunications/ Mains connection, conducted	84 ... 74 dB(μ V)	150 ... 500 kHz	
		74 dB(μ V)	500 kHz ... 30 MHz	

Emission of interference for industrial areas acc. to EN 61000-6-4

Test Specification		Limit Values Quasi Peak	Frequency Range	Distance
EN 55016-2-1	AC supply, conducted	79 dB(μ V)	150 ... 500 kHz	
		73 dB(μ V)	500 kHz ... 30 MHz	
EN 55016-2-3	radiated	40 dB(μ V/m)	30 ... 230 MHz	10 m
		47 dB(μ V/m)	230 MHz ... 1 GHz	10 m
EN 55022	Telecommunications/ Mains connection, conducted	97 ... 87 dB(μ V)	150 ... 500 kHz	
		87 dB(μ V)	500 kHz ... 30 MHz	

Mechanical strength acc. to EN 61131-2

Test Specification		Frequency Range	Limit Values
IEC 60068-2-6	Vibration	5 Hz \leq f < 9 Hz	1.75 mm amplitude (permanently)
			3.5 mm amplitude (short term)
		9 Hz \leq f < 150 Hz	0.5 g (permanent)
			1 g (short term)
		Note on vibration test: a) Frequency change: max. 1 octave/minute b) Vibration direction: 3 axes	
IEC 60068-2-27	shock		15 g
		Note on shock test: a) Type of shock: half sine b) Shock duration: 11 ms	
		c) Shock direction: 3x in positive and 3x in negative direction for each of the three mutually perpendicular axes of the test specimen	

Electromagnetic Compatibility and Mechanical Strength (shipping)

Immunity to interference in the shipping industry acc. to Germanischer Lloyd

Test Specification		Test Values	Evaluation Criteria *)
IEC 61000-4-2	ESD	6 kV / 8 kV (contact – air)	B
IEC 61000-4-3	Electromagnetic fields	10 V/m 80 MHz ... 2 GHz	A
IEC 61000-4-4	Burst	1 kV / 2 kV (data – supply)	A
IEC 61000-4-5	Surge	0.5 kV / 1 kV (line: line – line : ground)	A
IEC 61000-4-6	RF disturbances	10 V, 80 % AM (0.15 ... 80 MHz)	A
Type Test	AF disturbances (harmonics)	3 V, 2 W	A
Type Test	high voltage	755 V DC	-
		1500 V AC	-
*) Criteria A: The device must work in accordance with the regulations during and after the test. Criteria B: The device must work in accordance with the regulations after the test.			

Immunity to interference in the shipping industry acc. to Germanischer Lloyd

Test Specification		Limit Values Quasi Peak	Frequency Range	Distance
Type Test	EMC 1, conducted (allows for ship bridge control applications)	96 ... 50 dB(μV)	10 ... 150 kHz	
		60 ... 50 dB(μV)	150 ... 350 kHz	
		50 dB(μV)	350 kHz ... 30 MHz	
Type Test	EMC 1, radiated (allows for ship bridge control applications)	80 ... 52 dB(μV/m)	150 ... 300 kHz	3 m
		52 ... 34 dB(μV/m)	300 kHz ... 30 MHz	3 m
		54 dB(μV/m)	30 MHz ... 2 GHz	3 m
		except for:	24 dB(μV/m)	156 ... 165 MHz
Type Test	EMC 2, conducted (allows for machine room applications)	120 ... 69 dB(μV)	10 ... 150 kHz	
		79 dB(μV)	150 ... 500 kHz	
		73 dB(μV)	500 kHz ... 30 MHz	
Type Test	EMC 2, radiated (allows for machine room applications)	80 ... 50 dB(μV/m)	150 kHz ... 30 MHz	3 m
		60 ... 54 dB(μV/m)	30 ... 100 MHz	3 m
		54 dB(μV/m)	100 MHz ... 2 GHz	3 m
		except for:	24 dB(μV/m)	156 ... 165 MHz

Mechanical strength acc. to Germanischer Lloyd

Test Specification		Frequency Range	Limit Values
IEC 60068-2-6	Vibration (category A, C)	$2 \text{ Hz} \leq f < 13.2 \text{ Hz}$	±1.0 mm amplitude (permanent)
		$13.2 \text{ Hz} \leq f < 100 \text{ Hz}$	0.7 g (permanent)
		Note on vibration test: a) Frequency change: max. 1 octave/minute b) Vibration direction: 3 axes	
IEC 60068-2-6	Vibration (category A-D)	$2 \text{ Hz} \leq f < 25 \text{ Hz}$	±1.6 mm amplitude (permanent)
		$25 \text{ Hz} \leq f < 100 \text{ Hz}$	4 g (permanent)
		Note on vibration test: a) Frequency change: max. 1 octave/minute b) Vibration direction: 3 axes	

Specifications and Test Results

In particular the following standards apply to the design and the application of the terminal blocks and connectors contained in this catalog:

DIN VDE 0100 Construction of high current installations with nominal voltages up to 1000V	IEC 60529 EN 60529 VDE 0470-1 Degrees of protection provided by enclosures (IP code)	IEC 60998-2-2 EN 60998-2-2 VDE 0613-2-2 Connecting devices for low-voltage circuits for household and similar purposes - Part 2-2: Particular requirements for connecting devices as separate entities with screwless type clamping units
EN 50110-1 VDE 0105-1 Operation of electrical installations	IEC 60603-1 EN 60603-1 Connectors for frequencies below 3 MHz for use with printed boards - Part 1: Generic specification: General requirements and guide for the preparation of detail specifications, with assessed quality	IEC 60947-1 EN 60947-1 VDE 0660-100 Low-voltage switchgear and controlgear Part 1: General rules
IEC 61140 EN 61140 VDE 0140-1 Protection against electric shock - Common aspects for installation and equipment	IEC 61984 EN 61984 VDE 0627 Connectors - Safety requirements and tests	IEC 60947-5-6 EN 60947-5-6 VDE 0660-212 Low-voltage switchgear and controlgear Part 5-6: Control circuit devices and switching elements, DC interface for proximity sensors and switching amplifiers (NAMUR)
IEC 60664-1 EN 60664-1 VDE 0110-1 Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	IEC 60999-1 EN 60999-1 VDE 0609-1 Connecting devices - Electrical copper conductors; Safety requirements for screw-type and screwless-type clamping units - Part 1: General requirements and particular requirements for clamping units for conductors 0.2 mm ² up to 35 mm ²	IEC 60439-1 EN 60439-1 VDE 0660-500 Low-voltage switchgear and controlgear assemblies - Part 1: Type-tested and partially type-tested assemblies
IEC 60204-1 EN 60204-1 VDE 0113-1 Safety of machinery - Electrical equipment of machines - Part 1: General requirements	IEC 60617-2 EN 60617-2 Graphical symbols for diagrams - Part 2: Symbol elements, qualifying symbols and other symbols having general application	IEC 60555-1 EN 60555 Part 1 VDE 0838-1 Disturbances in supply systems caused by household appliances and similar electrical equipment; Part 1: definitions
EN 50178 VDE 0160 Electronic equipment for use in power installations	IEC 61558-1 EN 61558-1 VDE 0570-1 Safety of power transformers, power supplies, reactors and similar products Part 1: General requirements and tests	IEC 60715 EN 60715 Dimensions of low-voltage switchgear and controlgear - Standardized mounting on rails for mechanical support of electrical devices in switchgear and controlgear installations
IEC 62305-1 EN 62305-1 VDE 0185-305-1 Protection against lightning - Part 1: General principles	IEC 60669-2-1 EN 60669-2-1 VDE 0632-2-1 Switches for household and similar fixed electrical installations - Part 2-1: Particular requirements - Electronic switches	IEC 60950-1 EN 60950-1 VDE 0805-1 Information technology equipment - Safety Part 1: General requirements
IEC 60060-1 HD 588.1 S1 VDE 0432-1 High voltage test techniques; Part 1: general specifications and test requirements	IEC 60947-7-1 EN 60947-7-1 VDE 0611-1 Low-voltage switchgear and controlgear - Part 7-1: Ancillary equipment - Terminal blocks for copper conductors	IEC 60127-6 EN 60127-6 VDE 0820-6 Miniature fuses - Part 6: Fuse-holders for miniature fuse-links
IEC 60085 EN 60085 VDE 0301-1 Electrical insulation - Thermal evaluation and designation		

EN 50155 VDE 0115-200 Railway applications – Electronic equipment used on rolling stock	Interfaces - Fieldbuses DIN 66259-1 Electrical characteristics for unbalanced double-current interchange circuits	IEC 60079-14 EN 60079-14 VDE 0165-1 Explosive atmospheres - Part 14: Electrical installations design, selection and erection
EN 50090-2-2 VDE 0829-2-2 Home and Building Electronic Systems (HBES) – Part 2-2: System overview – General technical requirements; German version	EN 50325-1 Industrial communications subsystem based ISO 11898 (CAN) for controller-device interfaces - Part 1: General requirements	IEC 60079-15 EN 60079-15 VDE 0170-16 Electrical apparatus for explosive gas atmospheres - Part 15: Construction, test and marking of type of protection "n" electrical apparatus
IEC 60099-1 EN 60099-1 VDE 0675-1 Surge arresters - Part 1: Non-linear resistor type gapped surge arresters for a.c. systems	IEC 61784-1 EN 61784-1 Industrial communication networks – Profiles Part 1: Fieldbus profiles	IEC 61241-0 EN 61241-0 VDE 0170-15-0 Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements
IEC 61643-1 EN 61643-11 VDE 0675-6-11 Low-voltage surge protective devices – Part 11: Surge protective devices connected to low-voltage power systems – Requirements and tests	IEC 61158-2 EN 61158-2 Industrial communication networks - Fieldbus specifications - Part 2: Physical layer specification and service definition	IEC 61241-1 EN 61241-1 VDE 0170-15-1 Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosures "tD"
IEC 61643-21 EN 61643-21 VDE 0845-3-1 Low voltage surge protective devices - Part 21: Surge protective devices connected to telecommunications and signalling networks; Performance requirements and testing methods	IEC 61158-6-x EN 61158-6-x DIN EN 61158-6-x Industrial communication networks - Fieldbus specifications - Part 6-x	IEC 61241-11 EN 61241-11 VDE 0170-15-11 Electrical apparatus for use in the presence of combustible dust - Part 11: Protection by intrinsic safety "iD"
IEC 61508-1 EN 61508-1 VDE 0803-1 Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 1: General requirements	Explosion Protection IEC 60079-0 EN 60079-0 VDE 0170-1 Electrical apparatus for explosive gas atmospheres - Part 0: General requirements	
IEC 62061 EN 62061 VDE 0113-50 Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems	IEC 60079-7 EN 60079-7 VDE 0170-6 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"	
	IEC 60079-11 EN 60079-11 VDE 0170-7 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"	

Specifications and Test Results (continued)

Environmental Testing

IEC 60068-2-6
EN 60068-2-6
VDE 0468-2-6
Environmental testing - Part 2-6: Tests -
Test Fc: Vibration (sinusoidal)

IEC 60068-2-27
EN 60068-2-27
Basic environmental testing procedures -
Part 2: Tests; test Ea and guidance:
Shock

IEC 60068-2-42
EN 60068-2-42
Environmental testing - Part 2-42: Tests -
Test Kc: Sulphur dioxide test for contacts
and connections

IEC 60068-2-43
EN 60068-2-43
Environmental testing - Part 2-43: Tests -
Test Kd: Hydrogen sulphide test for
contacts
and connections

EMC Requirements

IEC 61000-6-1
EN 61000-6-1
VDE 0839-6-1
Electromagnetic compatibility (EMC) -
Part 6-1: Generic standards - Immunity
for residential, commercial and light-
industrial environments

IEC 61000-6-2
EN 61000-6-2
VDE 0839-6-2
Electromagnetic compatibility (EMC) -
Part 6-2: Generic standards - Immunity
for industrial environments

IEC 61000-6-3
EN 61000-6-3
VDE 0839-6-3
Electromagnetic compatibility (EMC) -
Part 6-3: Generic standards - Emission
standard for residential, commercial and
light-industrial environments

IEC 61000-6-4
EN 61000-6-4
VDE 0839-6-4
Electromagnetic compatibility (EMC) -
Part 6-4: Generic standards - Emission
standard for industrial environments

IEC 61000-3-2
EN 61000-3-2
VDE 0838-2
Electromagnetic compatibility (EMC) -
Part 3-2: Limits
- Limits for harmonic current emissions
(equipment input current ≤ 16 A per
phase)

IEC/CISPR 11
EN 55011
VDE 0875-11
Industrial scientific and medical (ISM)
radiofrequency
equipment - Electromagnetic distur-
bance characteristics -
Limits and methods of measurement

IEC/CISPR 22
EN 55022
VDE 0878-22
Information technology equipment -
Radio
disturbance characteristics
- Limits and methods of measurement

IEC/CISPR 24
EN 55024
VDE 0878-24
Information technology equipment
- Immunity characteristics
- Limits and methods of measurement

IEC 61326-3-1
EN 61326-3-1
VDE 0843-20-3-1
Electrical equipment for measurement,
control and laboratory use - EMC re-
quirements - Part 3-1: Immunity require-
ments for safety-related systems and for
equipment intended to perform safety-
related functions (functional safety) -
General industrial applications

PLC & PC control

IEC 61131-1
EN 61131-1
Programmable controllers - Part 1: General information

IEC 61131-2
EN 61131-2
VDE 0411-500
Programmable controllers - Part 2: Equipment requirements and tests

IEC 61131-3
EN 61131-3
Programmable controllers - Part 3: Programming languages

Relay

IEC 61810-1
EN 61810-1
VDE 0435-201
Electromechanical elementary relays - Part 1: General requirements

IEC 61810-2
EN 61810-2
VDE 0435-120
Electromechanical elementary relays - Part 2: Reliability

IEC 61810-5
EN 50205
VDE 0435-2022
Electromechanical non-specified time all-or-nothing relays - Part 5: Insulation coordination

IEC 60255-5
EN 60255-5
VDE 0435-130
Electrical relays - Part 5: Insulation coordination for measuring relays and protection equipment - Requirements and tests

UL Directives

UL 1059; ANSI 1059
Terminal blocks

UL 486E
Equipment wiring terminals for use with aluminum and/or copper conductors

UL 508
Industrial control equipment

ANSI/ISA12.12.01
Non-incendive electrical equipment for use in Class I and Class II, Division 2 and Class III, Divisions 1 and 2 hazardous (classified) locations

Ship Classifications

ABS (American Bureau of Shipping)
Steel Vessels
Part 4: Vessel Systems and Machinery

BV (Bureau Veritas)
Rules for the classification of steel ships and offshore units

DNV (Det Norsk Veritas)
Det Norsk Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norsk Veritas' Offshore Standards: 2007

GL (Germanischer Lloyd)
Rules for Classification and Construction VI Additional Rules and Guidelines 7 Guidelines for the Performance of Type Test
2 Test Requirements for Electrical/Electronic Devices and Systems

LR (Lloyds Register)
Type Approval System
Test Specification Number 1

RINA (Registro Italiano Navale)
Rules for the classification of ships
Part C – Machinery, systems and fire protection Ch.3, Sect.6, Table 1

BSH (Federal Maritime and Hydrographic Agency)
Certificate on measurement of safe distance to the standard magnetic and steering magnetic compass in accordance with ISO R 695 and DIN EN 60945 Section 11.2

KR (Korean Register of Shipping)
List of approved Manufacturers And Type Approval Equipment; Pt.6, Ch.1, Sec.3 of the Rules for Classification, Steel Ships

NKK (Nippon Kaiji Kyokai)
Guidance for the approval and type approval of materials and equipment for marine use

PRS (Polski Rejestr Statkow)
Publication No.11/P
Environmental Tests on Marine Equipment

Electrical Engineering Laboratory: Product Safety for Our Customers

The WAGO laboratory in Minden is an "accredited test lab for electrical and mechanical tests on terminal blocks and connectors, as well as for environment simulations."

Accreditation, as ISO/IEC 17011:2004 defines, is a third party-attestation related to a conformity assessment body conveying formal demonstration of its competence to carry out specific conformity assessment tasks.

Accreditation, according to DIN EN ISO/IEC 17025, is granted by the Deutsche Akkreditierungsstelle GmbH DAkkS (German Accreditation Office GmbH DAkkS). This national accreditation office, which was established by the German Federal Ministry for Economics and Technology (BMWi), certifies that our test laboratory is officially recognized as possessing the necessary expertise to conduct defined tests and types of tests independently and objectively.

Through obtaining the accreditation, the following objectives were achieved:

- Customer requirements
- Workflow optimization
- Clearly defined processes
- Clear organization and structure
- Greater transparency
- Consistent, high-quality laboratory testing
- Maximum traceability
- Traceable measurement results
- Sustainable quality awareness

Visitor center



High-voltage test



Vibration- and shock-resistance testing



Conductor retention force testing



Deutsche Akkreditierungsstelle GmbH

Beliehene gemäß § 8 Absatz 1 AkkStelleG i.V.m. § 1 Absatz 1 AkkStelleGBV
 Unterzeichnerin der Multilateralen Abkommen
 von EA, ILAC und IAF zur gegenseitigen Anerkennung

Akkreditierung



Die Deutsche Akkreditierungsstelle GmbH bestätigt hiermit, dass das Prüflaboratorium

WAGO Kontakttechnik GmbH & Co. KG
Hansastraße 27, 32423 Minden

die Kompetenz nach DIN EN ISO/IEC 17025:2005 besitzt, Prüfungen in folgenden Bereichen durchzuführen:

**Elektrische und mechanische Prüfungen an Klemmen und Steckverbinder
 sowie Umweltsimulation**

Die Akkreditierungsurkunde gilt nur in Verbindung mit dem Bescheid vom 18.12.2014 mit der Akkreditierungsnummer D-PL-19704-01 und ist gültig bis 17.12.2019. Sie besteht aus diesem Deckblatt, der Rückseite des Deckblatts und der folgenden Anlage mit insgesamt 5 Seiten.

Registrierungsnummer der Urkunde: **D-PL-19704-01-00**

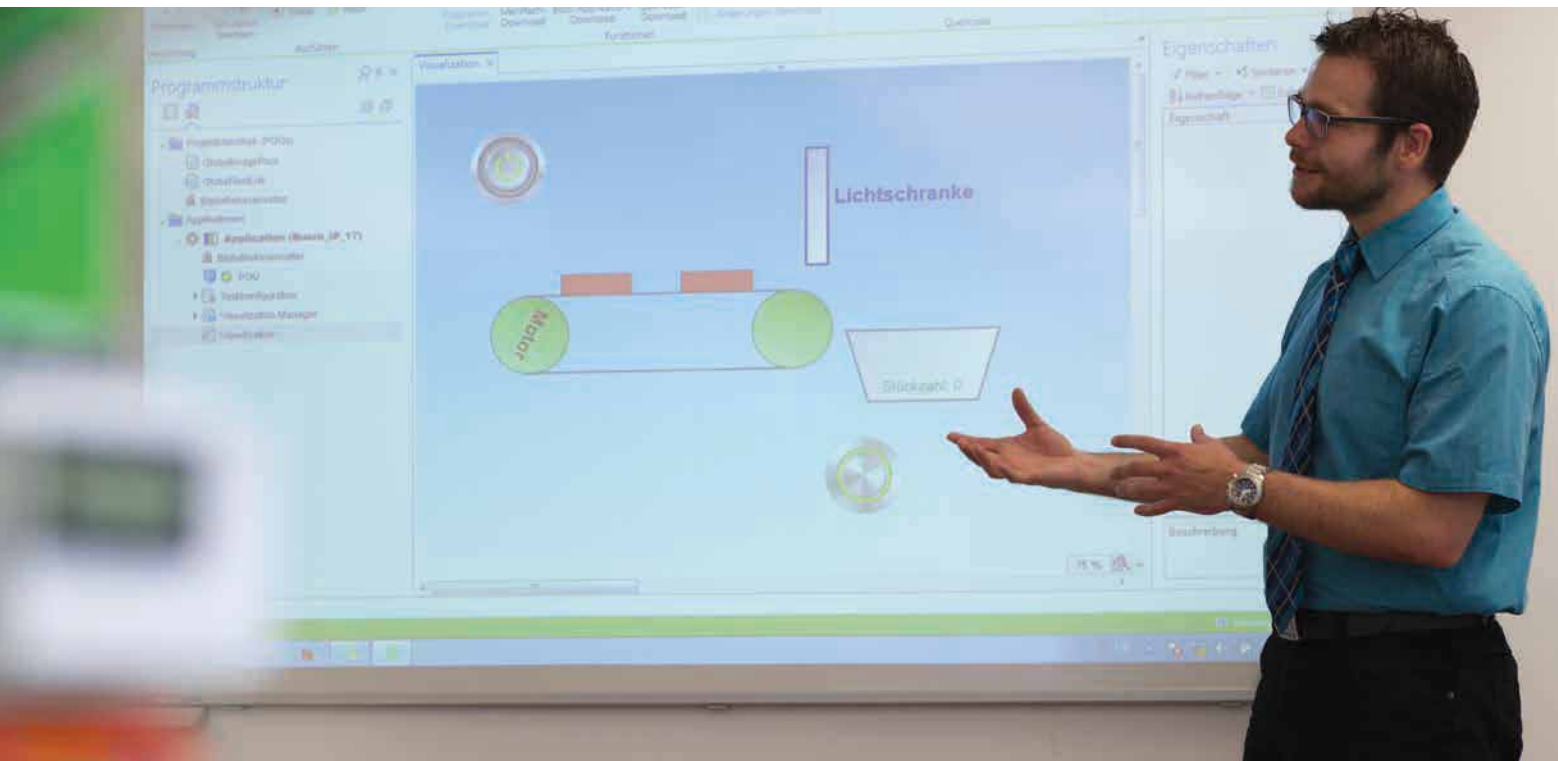
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Im Auftrag Dipl.-Ing. (FH) Ralf Egner
 Abteilungsleiter

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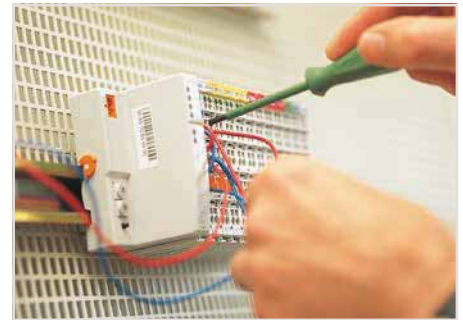
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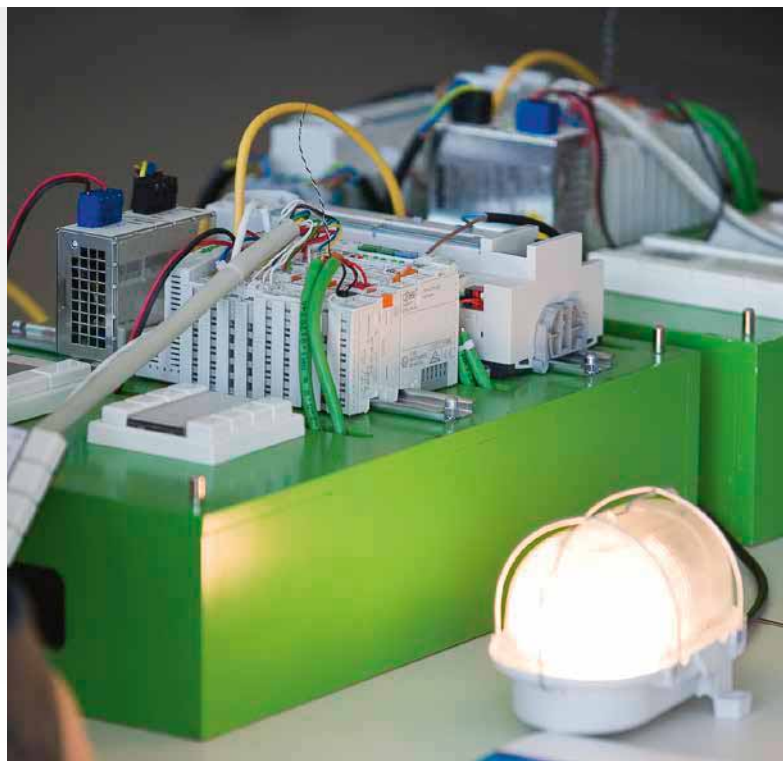
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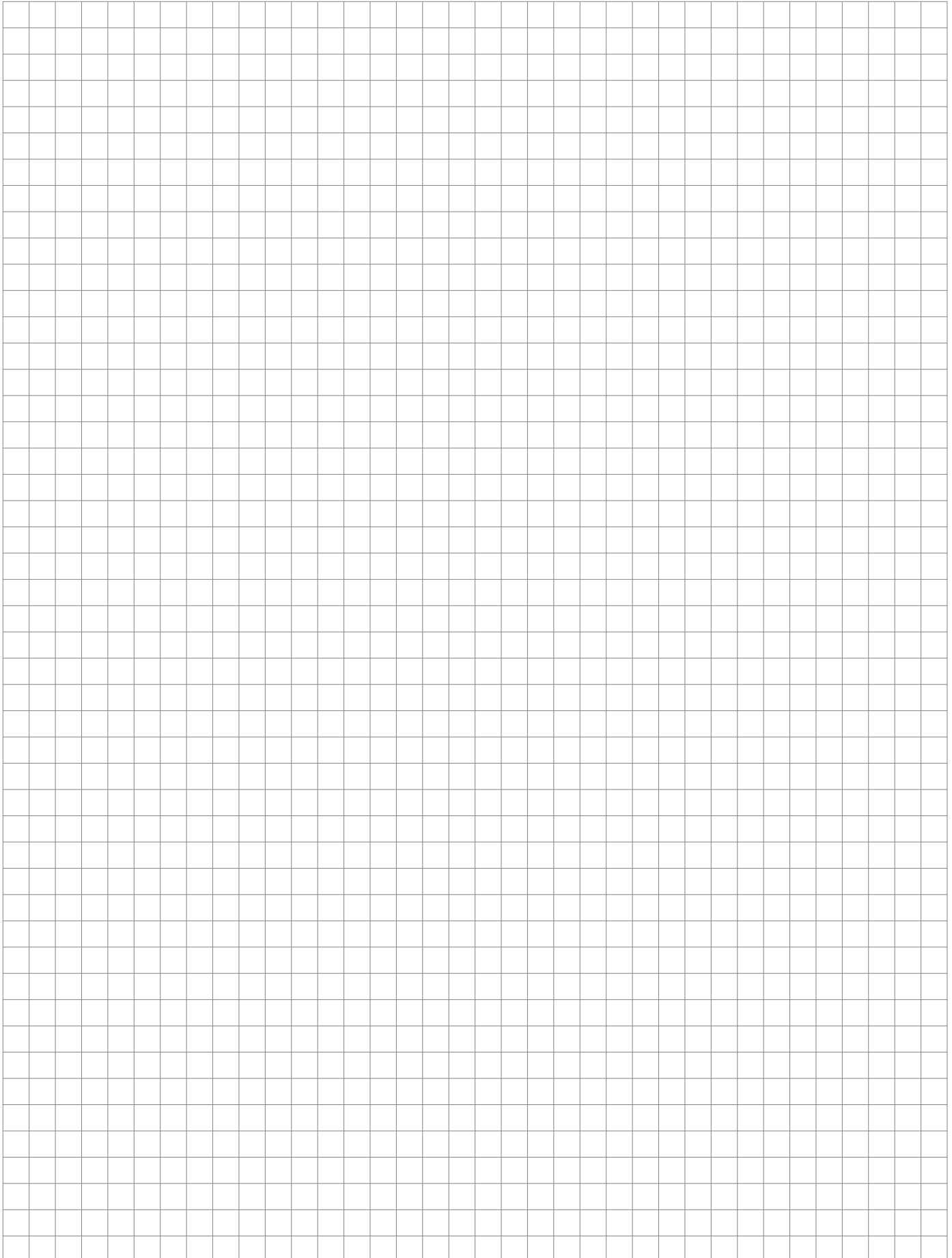
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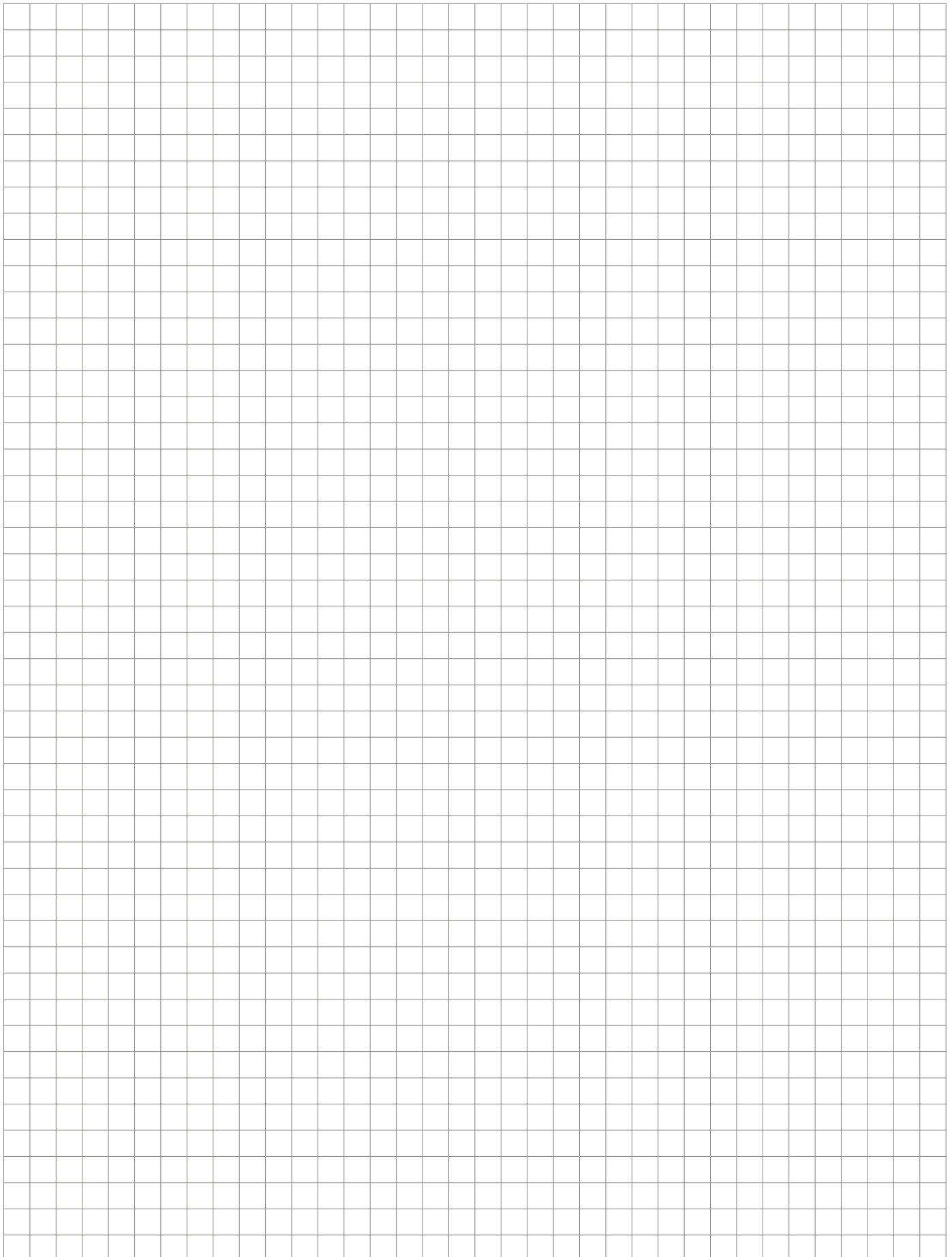
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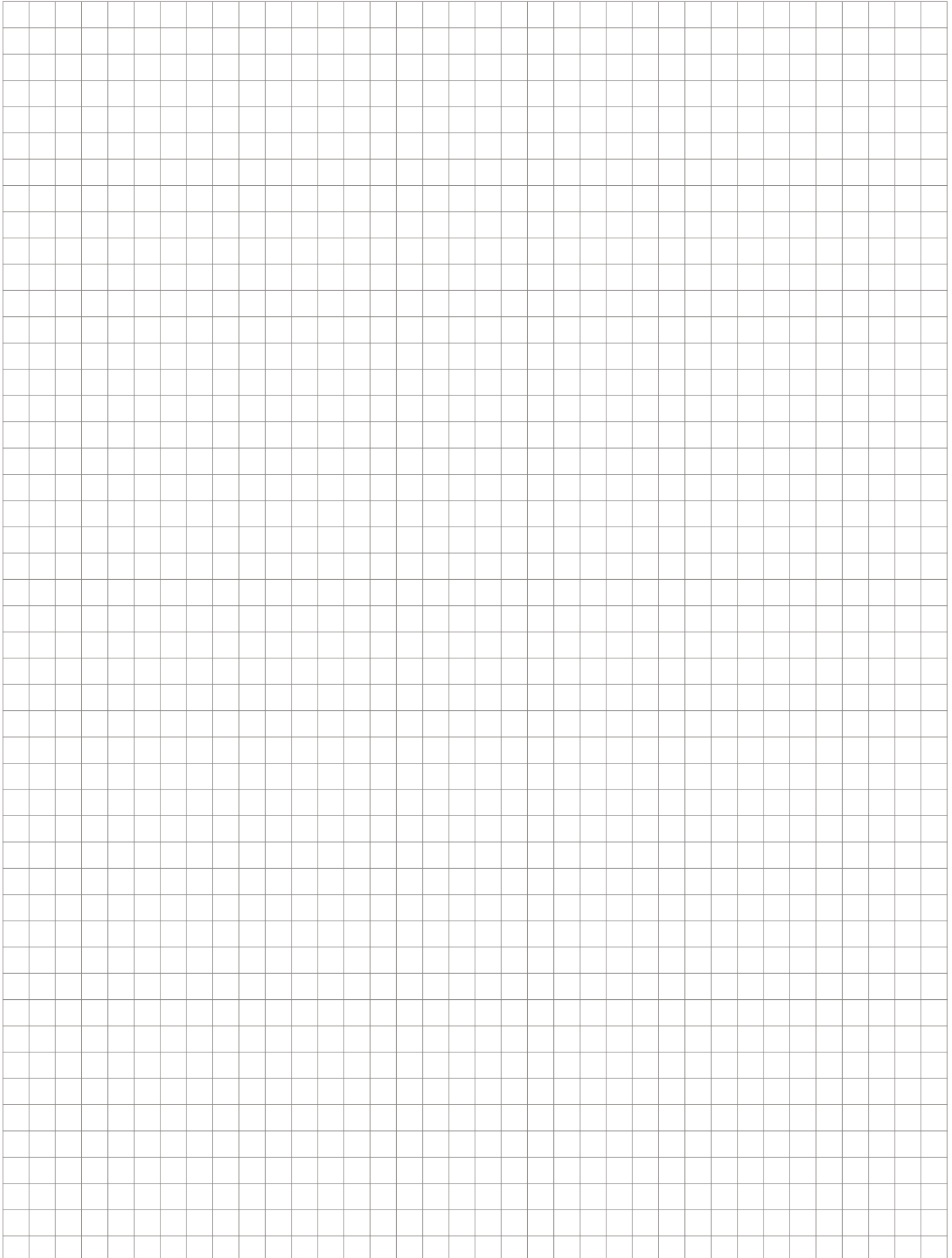
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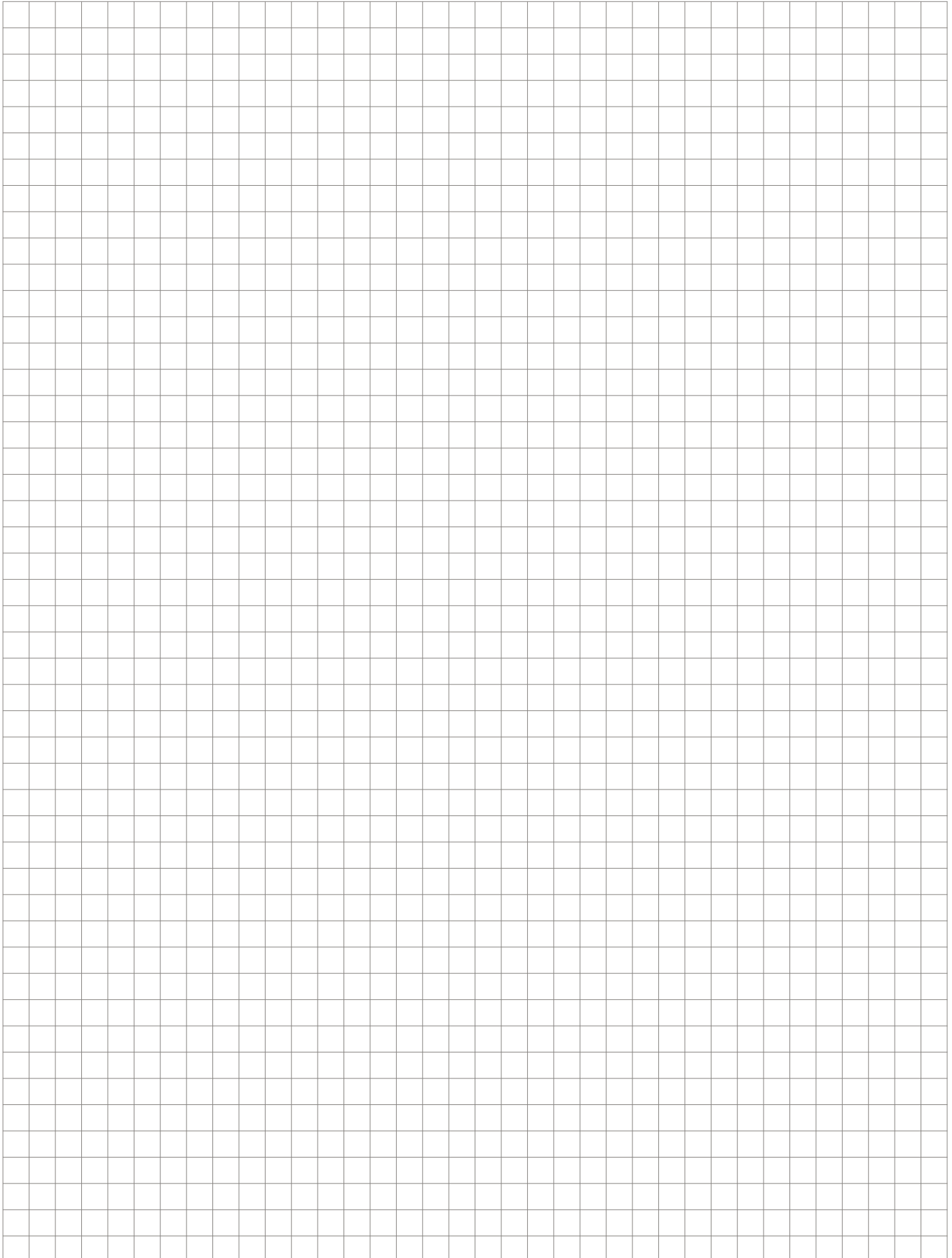
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