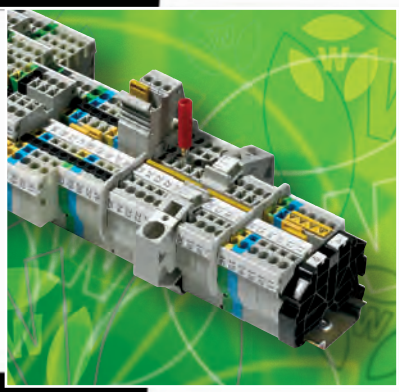
interface

wieland

interface
Solutions for the Control Cabinet

Catalog 2014



▲ Sales Center in Bamberg

▲ Company headquarters in Bamberg

▲ STOCKO main plant in Wuppertal

wieland group

automation
building
electronics

ACTIVE WORLDWIDE

The Wieland Group employs more than 2,000 people all around the globe. With some 15 locations and subsidiaries, and sales partners in more than 70 countries, Wieland Holding is present in nearly all important key markets worldwide. Always with a clear commitment to the German location where most of the products are still manufactured.

The group makes us strong

Wieland Holding is based in Bamberg, Bavaria, and comprises two independently acting subsidiaries: Wieland Electric and STOCKO Contact.

Groundbreaking innovations made Wieland Electric one of the leading suppliers of electrical connection technology. This company, founded in Bamberg in 1910, is the largest subsidiary of Wieland Holding.

STOCKO Contact is based in Wuppertal and joined the Wieland Group in 2001. Stocko has also more than 100 years of company history to its credit and is one of the largest manufacturers of connector systems and crimp contacts.

Established in industries

Control cabinet engineering, industrial automation, building system technology – our large product portfolio provides solutions for all kinds of applications.

From innovative interface and network technology to terminal blocks to "*safety first*" – with modular system solutions and safety components. With Wieland products in your control cabinet, you are always on the safe side.

Energy bus systems for distributed automation or indoor and outdoor field bus components – Wieland technology can be found everywhere, and in all kinds of applications.

In building system technology, Wieland Electric is the world market leader in pluggable eletrical installation.

There are good reasons why our system solutions can be found in the most spectacular building projects worldwide. When it comes to electronic networking, Wieland leads the way to the “smart home”.

Welcome Future

Wieland Electric is 100 years young, and full of innovative energy. And our commitment for the future is not only to find constantly new system solutions for our customers but also social responsibility.

Environmentally friendly high-tech products, manufactured to the latest production standards, an audited environmental management system and substantial investments in our locations are all part to this concept.

Global commitment and sustainable regional action – Wieland Electric is fit for the future: Contacts are green.

Contents

interface

Signal processing

throughout your control system, with our connectivity solutions

Versatility for every application

Wherever current flows and signals are processed, the unique strengths of Wieland Electric ***interface*** products shine through. Thanks to a broad range of relays, power supplies and overvoltage protection devices, as well as ***interface*** and analog modules, your application will also become a real all-rounder. Send all the right signals with our interface technology and innovative DIN rail terminal blocks.

Applications:

- Machine building
- Process control
- Transportation & material handling
- Automotive industry
- Power distribution
- Petrochemical
- Food industry
- Manufacturing engineering

Signal processing

throughout your control system with

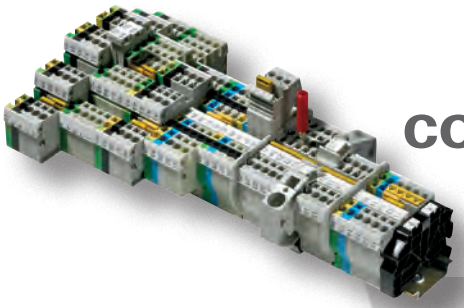
| supply |

wipos power supplies including single-phase and three-phase devices for DIN rail mounting in almost any application

| protection |

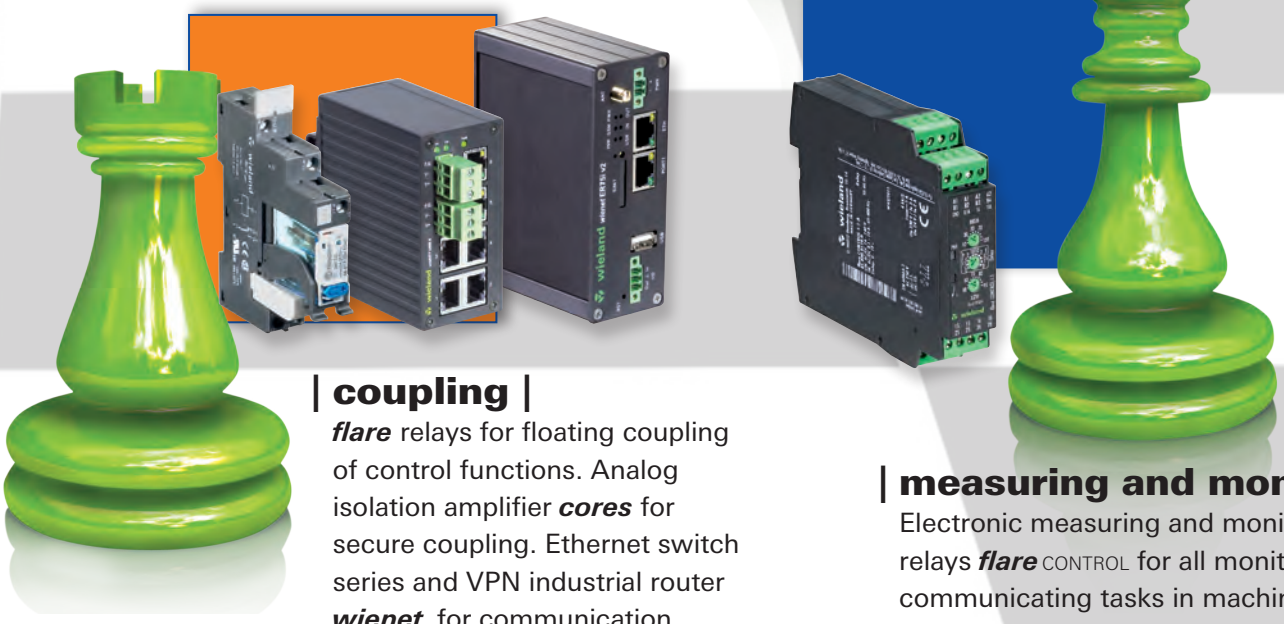
wietap overvoltage protection devices for guaranteed highest system availability and device protection

our connectivity solutions



| control |

ricos FLEX, the modular and compact I/O fieldbus system, which can be combined and used very flexible. Timer and multi-function relays ***flare*** TIME for simple to highly complex control tasks



| coupling |

flare relays for floating coupling of control functions. Analog isolation amplifier ***cores*** for secure coupling. Ethernet switch series and VPN industrial router ***wienet***, for communication

| measuring and monitoring |

Electronic measuring and monitoring relays ***flare*** CONTROL for all monitoring and communicating tasks in machines and systems

wietap

Overvoltage protection

Important information on overvoltage

The necessity of overvoltage protection on machines and systems as well as for building technology is ever increasing. The potential danger of damage and even complete destruction posed to valuable electronic components or even complete production systems, computer systems or communication systems by sudden overvoltage from the grid, or direct lightning strikes has mobilized not just insurance companies. Well-advised users also know the importance of protecting their electrical devices, plants and systems both sufficiently and reliably against this danger, and the overall advantage of increasing their system availability.

Overvoltage protection modules

Overvoltage protection modules come in three type categories which designate their capacity to absorb overvoltage energy. Type 1 arresters can divert the largest amount of energy to ground (PE). The ideal installation location for these devices is at the building's main supply. In this configuration the impulse energy is considerably weakened, if it moves downstream into the installation. In sub-panels and control cabinets, this surplus energy is reduced further by type 2 and 3 arresters, thus maintaining the survival of the protected devices.

Table 1

LEMP protection for buildings with electrical and electronic systems according to IEC 62305-4 (DIN EN 62305-4, DIN 0185-305-4)

Lightning protection zones

LPZ 0_A	At risk from direct lightning strikes, impulse currents up to the full lightning current and through the full lightning field.
LPZ 0_B	Protected against direct lightning strike. At risk from impulse currents up to partial lightning currents and through the full lightning field.
LPZ 1	Impulse currents further limited by current division and SPDs at the zone limits. In most cases, the lightning field is attenuated by shields.
LPZ 2	Impulse currents further limited by current division and SPDs at the zone limits. In most cases, the lightning field is attenuated by local shields.

Playing it safe with **overvoltage protection**

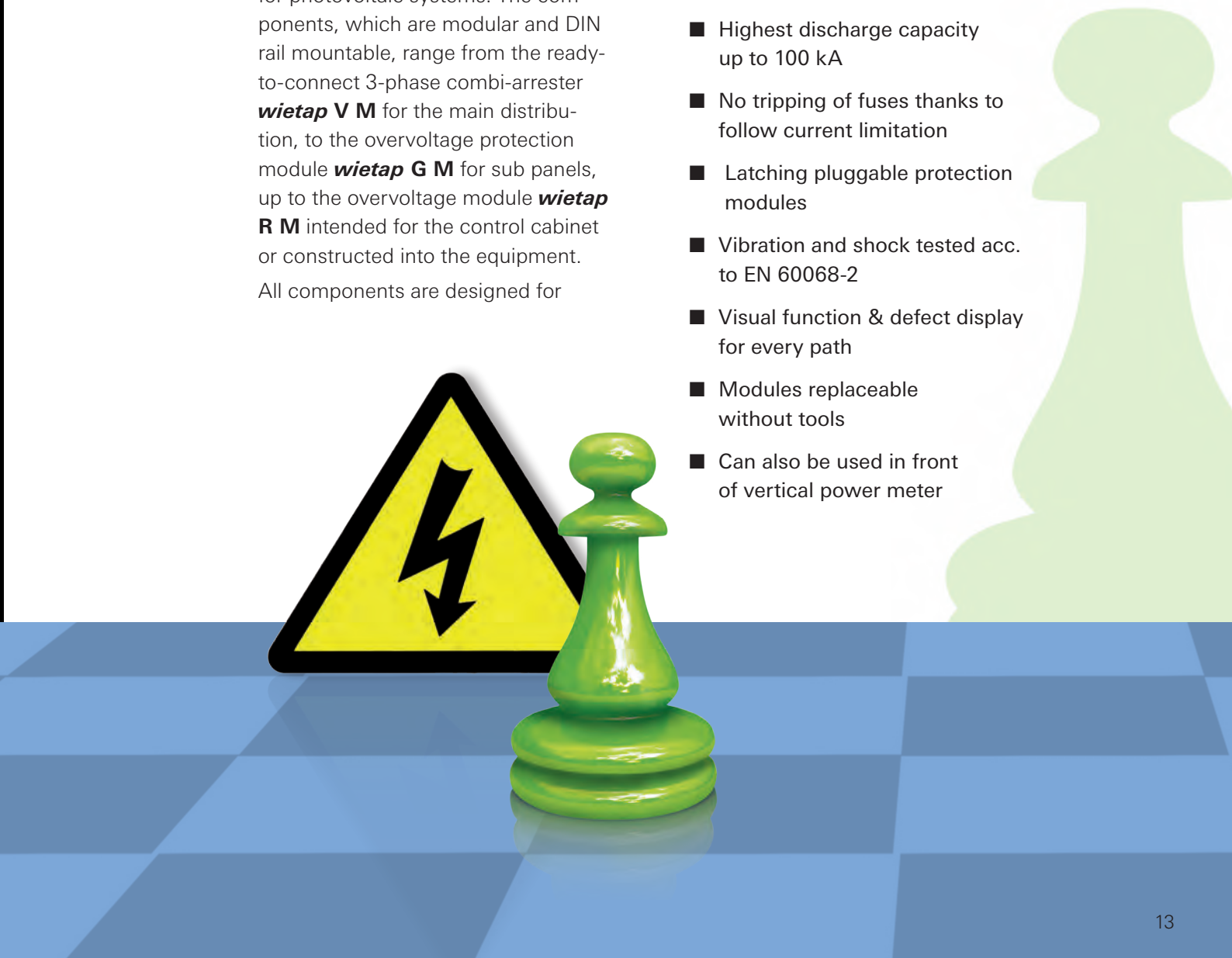
Very short response time and high discharge capacity

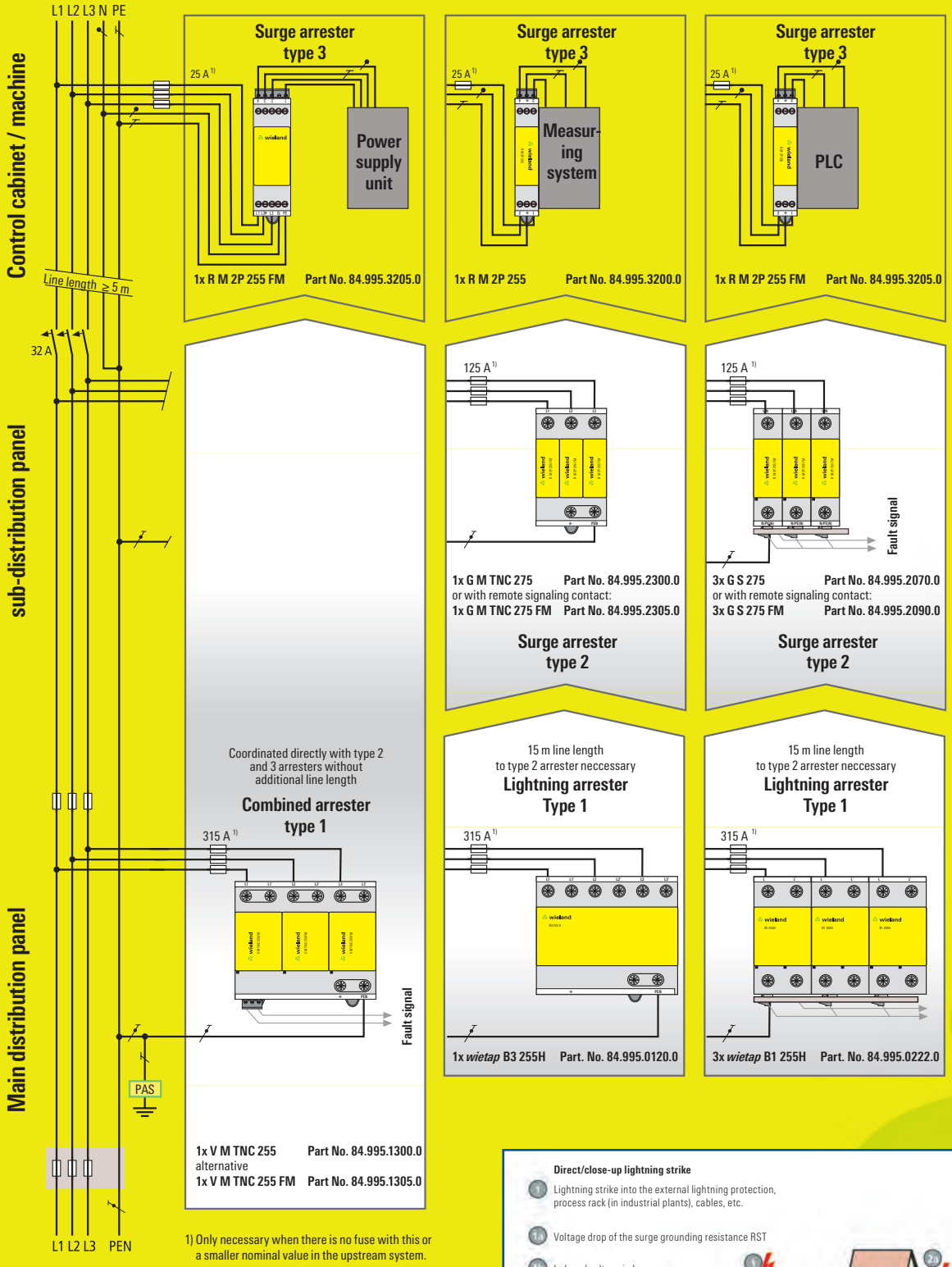
With its considerably expanded ***wietap*** product range, Wieland Electric offers comprehensive solutions for overvoltage protection in control cabinets and sub panels of machines and buildings, as well as for photovoltaic systems. The components, which are modular and DIN rail mountable, range from the ready-to-connect 3-phase combi-arrester ***wietap*** **V M** for the main distribution, to the overvoltage protection module ***wietap*** **G M** for sub panels, up to the overvoltage module ***wietap*** **R M** intended for the control cabinet or constructed into the equipment.

All components are designed for application temperatures from -40 to 80 °C and have a high discharge capacity. Devices are also available with a remote signaling contact.

Properties of *wietap*:

- Electrically coordinated product family
- Highest discharge capacity up to 100 kA
- No tripping of fuses thanks to follow current limitation
- Latching pluggable protection modules
- Vibration and shock tested acc. to EN 60068-2
- Visual function & defect display for every path
- Modules replaceable without tools
- Can also be used in front of vertical power meter





1) Only necessary when there is no fuse with this or a smaller nominal value in the upstream system.

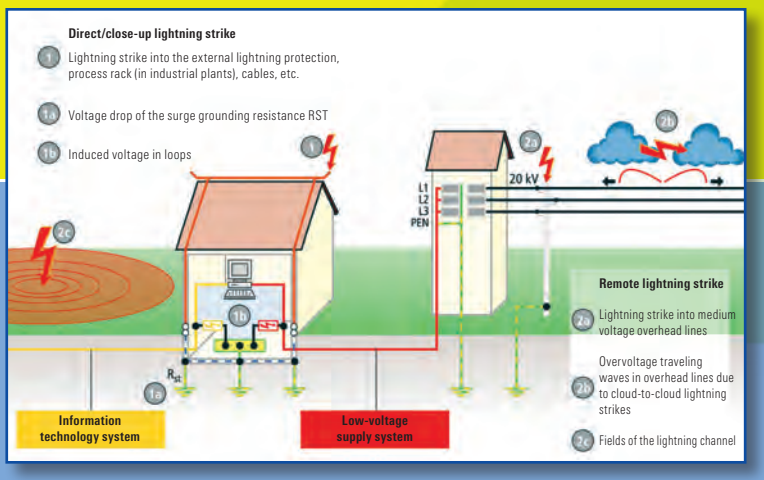


Figure 1

Overvoltage protection
The zone concept for **lightning protection**

The **zone concept for lightning protection** enables planners, builders and owners to plan, implement and monitor protective measures. All relevant devices, plants and systems can thus be protected reliably at economically justifiable costs..

Direct or close-up lightning strikes are lightning strikes into the lightning protection system of a building, in close proximity to it, or into the electrically conductive systems implemented in the building (e.g. low-voltage supply,telecommunications, control lines. **(Fig. 1)**

Remote lightning strikes are lightning strikes that occur far away from the object to be protected as well as lightning strikes into the medium voltage overhead system or in close proximity to it, or lightning discharge from cloud to cloud **(Fig. 1: cases 2a, 2b and 2c)**.

In addition to a lightning protection system in the building, additional measures for an overvoltage protection of electrical and electronic systems are required in order **to safeguard the continuous availability** of complex power engineering and IT systems even in the case of a direct lightning strike. It is important to consider all the causes for overvoltages.

The zone concept for **lightning protection** as described in IEC 62305-4 (DIN EN 62305-4, DIN 0185-305-4) applies accordingly **(Fig. 3)**. It divides a building into different risk zones. The relevant protective measures can then be derived for each zone, especially the devices and components for lightning and overvoltage protection.

The zones for lightning protection are defined as described in Table 1.

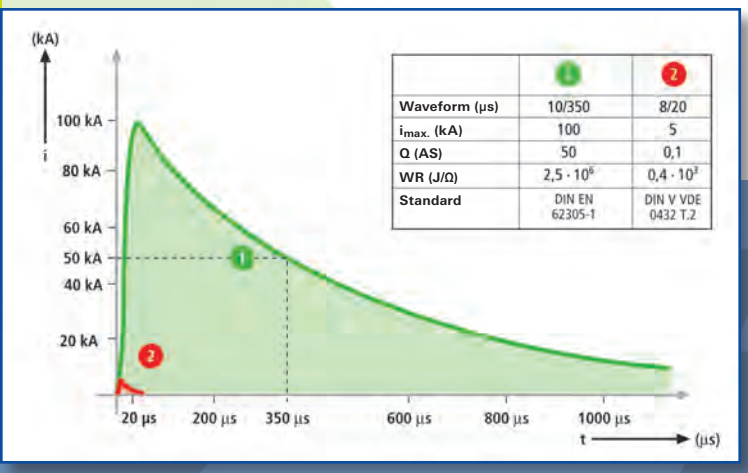


Figure 2: ① Peak current for testing of lightning arresters
② Peak current for testing of surge arresters

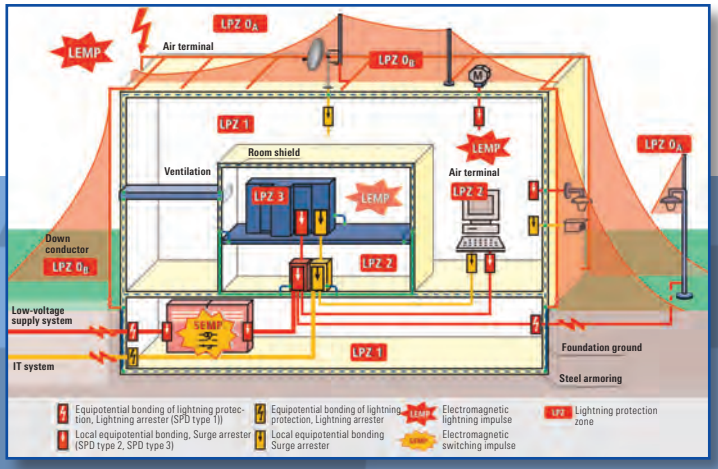


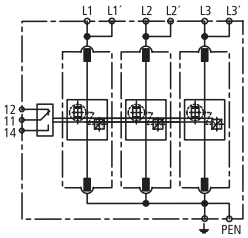
Figure 3: EMC-oriented zone concept for lightning protection

Three-phase combined arrester, type 1 (2, 3)

For protection of the building main supply

wietap V M TNC 255 (FM)

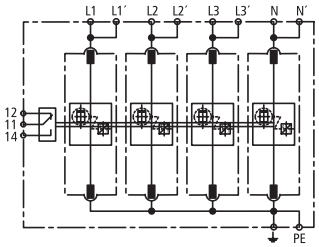
- Combined arrester, type 1
- For TN-C-systems
- With pluggable protection modules
- Max. system availability due to follow current limitation
- Switch-off selective for 20 A gL/gG fuses up to 50 kA_{eff}f short-circuit current
- Discharge capacity up to 75 kA (10/350)
- Function/failure indication according to VDE 0100-534
- Optional with remote signaling contact (FM)
- Vibration and shock tested acc. to EN 60068-2



Type	Part No.
***wietap* V M TNC 255**	84.995.1300.0
***wietap* V M TNC 255 FM**	84.995.1305.0
Replacement module L1, L2, L3 against ⏚	84.995.1001.0
Power network	TN-C
SPD accord. to EN 61643-11 / IEC 61643-1	Type 1 / Class I
Energy-coordinated protective function to the end device	Type 1 + Typ 2
Energy-coordinated protective function to the end device ≤ 5m	Type 1 + Type 2 + Type 3
Nominal voltage AC [U_N]	230 / 400 V
Nominal frequency [f_N]	50 / 60 Hz
Maximum continuous voltage AC [U_C]	255 V
Lightn. impulse current (10/350) [L1+L2+L3-PEN] [I_{total}]	75 kA
Lightn. impulse current (10/350) [L-PEN] [I_{imp}]	25 kA
Nominal discharge current (8/20) [I_n]	25 / 75 kA
Protection level [U_P]	≤ 1.5 kV
Follow current extinguishing capability AC [I_{fi}]	50 kA_{eff}
Operating time [t_A]	≤ 100 ns
Max. pre-fusing (L) up to I_K = 50 kA_{eff}	315 A gL/gG
Max. pre-fusing (L) up to I_K > 50 kA_{eff}	200 A gL/gG
Max. pre-fusing (L-L')	125 A gL/gG
TOV-voltage [U_T]	440 V / 5 sec.
Temperature range (Parallel wiring) [T_{UP}]	-40 ... +80 °C
Temperature range (Through wiring) [T_{US}]	-40 ... +60 °C
Function/failure indication	green / red
Wire range (L1, L1', L2, L2', L3, L3', PEN, ⏚) [min.]	10 mm^2 (AWG 8) solid/fine-stranded
Wire range (L1, L2, L3, PEN) [max.]	50 mm^2 (AWG 1) stranded/35 mm^2 (AWG 2) fine-stranded
Wire range (L1', L2', L3', ⏚) [max.]	35 mm^2 (AWG 2) stranded/25 mm^2 (AWG 4) fine-stranded
Mounted on DIN rail acc. to EN 60715	35 mm
Housing material	Thermoplast, UL 94 V-0
Degree of protection	IP 20
Dimensions	6 TE, DIN 43880 (108 mm)
Remote signaling contacts = Contact Type	Change-over contact
Switching capacity AC (FM)	250 V/0.5 A
Switching capacity DC (FM)	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Wire range for remote signaling terminals	max. 1.5 mm^2 (AWG 16) solid/fine-stranded
Approvals	CE

wietap V M TNS 255 (FM)

- Combined arrester Type 1
- For TN-S-systems
- With pluggable protection modules
- Max. system availability due to follow current limitation
- Switch-off selective for 20 A gL/gG fuses up to 50 kA_{eff}f short-circuit current
- Discharge capacity up to 100 kA (10/350)
- Function/failure indication according to VDE 0100-534 (valid since March 2009)
- Optional with remote signaling contact (FM)
- Vibration and shock tested acc. to EN 60068-2



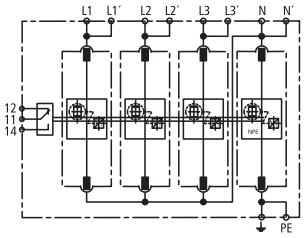
Type	Part No.
***wietap* V M TNS 255**	84.995.1400.0
***wietap* V M TNS 255 FM**	84.995.1405.0
Replacement module L1, L2, L3, N against ⏚	84.995.1001.0
Power network	TN-S
SPD accord. to EN 61643-11 / IEC 61643-1	Type 1 / Class I
Energy-coordinated protective function to the end device	Type 1 + Typ 2
Energy-coordinated protective function to the end device ≤ 5m	Type 1 + Type 2 + Type 3
Nominal voltage AC [U_N]	230 / 400 V
Nominal frequency [f_N]	50 / 60 Hz
Maximum continuous voltage AC [U_C]	255 V
Lightn. impulse current (10/350) [L1+L2+L3-PEN] [I_{total}]	100 kA
Lightn. impulse current (10/350) [L, N-PE] [I_{imp}]	25 kA
Nominal discharge current (8/20) [I_n]	25 / 100 kA
Protection level [L, N-PE] [U_P]	≤ 1.5 kV
Follow current extinguishing capability AC [I_{fi}]	50 kA_{eff}
Operating time [t_A]	≤ 100 ns
Max. pre-fusing (L) up to I_K = 50 kA_{eff}	315 A gL/gG
Max. pre-fusing (L) up to I_K > 50 kA_{eff}	200 A gL/gG
Max. pre-fusing (L-L')	125 A gL/gG
TOV-voltage [L-N] [U_T]	440 V / 5 sec.
Temperature range (Parallel wiring) [T_{UP}]	-40 ... +80 °C
Temperature range (Through wiring) [T_{US}]	-40 ... +60 °C
Function/failure indication	green / red
Wire range (L1, L1', L2, L2', L3, L3', N, N', PE, ⏚) [min.]	10 mm^2 (AWG 8) solid/fine-stranded
Wire range (L1, L2, L3, PE, N) [max.]	50 mm^2 (AWG 1) stranded/35 mm^2 (AWG 2) fine-stranded
Wire range (L1', L2', L3',N', ⏚) [max.]	35 mm^2 (AWG 2) stranded/25 mm^2 (AWG 4) fine-stranded
Mounted on DIN rail acc. to EN 60715	35 mm
Housing material	Thermoplast, UL 94 V-0
Degree of protection	IP 20
Dimensions	8 TE, DIN 43880 (144 mm)
Remote signaling contacts = Contact Type	Change-over contact
Switching capacity AC (FM)	250 V/0.5 A
Switching capacity DC (FM)	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Wire range for remote signaling terminals	max. 1.5 mm^2 (AWG 16) solid/fine-stranded
Approvals	CE

Three-phase combined arrester, type 1 (2, 3)

For protection of the building main supply

wietap V M TT 255 (FM)

- Combined arrester Type 1
- For TT- and TN-S-systems ("3+1" circuits)
- With pluggable protection modules
- Max. system availability due to follow current limitation
- Switch-off selective for 20 A gL/gG fuses up to 50 kA_{eff}f short-circuit current
- Discharge capacity up to 100 kA (10/350)
- Function/failure indication according to VDE 0100-534
- Optional with remote signaling contact (FM)
- Vibration and shock tested acc. to EN 60068-2



Type	Part No.
***wietap* V M TT 255**	84.995.1310.0
***wietap* V M TT 255 FM**	84.995.1315.0
Replacement module L1, L2, L3 against N	84.995.1001.0
Replacement module N against ⏚	84.995.1100.0

Power network	TT and TN-S
SPD according to EN 61643-11 / IEC 61643-1	Type 1 / Class I
Energy-coordinated protective function to the end device	Type 1 + Typ 2
Energy-coordinated protective function to the end device ≤ 5m	Type 1 + Type 2 + Type 3
Nominal voltage AC [U_N]	230 / 400 V
Nominal frequency [f_N]	50 / 60 Hz
Maximum continuous voltage AC [U_C]	255 V
Lightn. impulse current (10/350) [L1+L2+L3 +N-PE] [I_{total}]	100 kA
Lightn. impulse current (10/350) [L-N] [I_{imp}]	25 kA
Lightn. impulse current (10/350) [N-PE] [I_{imp}]	100 kA
Nominal discharge current (8/20) [I_n]	25 / 100 kA
Protection level [L-N, N-PE] [U_P]	≤ 1.5 kV
Follow current extinguishing capability [L-N] AC [I_{fi}]	50 kA_{eff}
Follow current extinguishing capability [N-PE] AC [I_{fi}]	100 A_{eff}
Operating time [t_A]	≤ 100 ns
Max. pre-fusing (L) up to I_K = 50 kA_{eff}	315 A gL/gG
Max. pre-fusing (L) up to I_K > 50 kA_{eff}	200 A gL/gG
Max. pre-fusing (L-L')	125 A gL/gG
TOV-voltage [L-N] [U_T]	440 V / 5 sec.
TOV-voltage [N-PE] [U_T]	1200 V / 200 ms
Temperature range (Parallel wiring) [T_{UP}]	-40 ... +80 °C
Temperature range (Through wiring) [T_{US}]	-40 ... +60 °C
Function/failure indication	green / red
Wire range (L1, L1', L2, L2', L3, L3', N, N', PE, ⏚) [min.]	10 mm^2 (AWG 8) solid/fine-stranded
Wire range (L1, L2, L3, N, PE) [max.]	50 mm^2 (AWG 1) stranded/35 mm^2 (AWG 2) fine-stranded
Wire range (L1', L2', L3', N, ⏚) [max.]	35 mm^2 (AWG 2) stranded/25 mm^2 (AWG 4) fine-stranded
Mounted on DIN rail acc. to EN 60715	35 mm
Housing material	Thermoplast, UL 94 V-0
Degree of protection	IP 20
Dimensions	8 TE, DIN 43880 (144 mm)
Remote signaling contacts = Contact Type	Change-over contact
Switching capacity AC (FM)	250 V/0.5 A
Switching capacity DC (FM)	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Wire range for remote signaling terminals	max. 1.5 mm^2 (AWG 16) solid/fine-stranded
Approvals	CE VDE cULus

Replacement module for *wietap* VM devices

wietap V MOD 255

Network spark gap protection module for all L – ⏚; L – N and for ***wietap*** V M TNS 255 (FM) N – ⏚

wietap V MOD NPE 100

Network spark gap protection module for ***wietap*** V M TT 255 (FM) N – ⏚

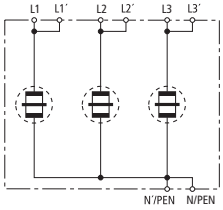
Type	Part No.
***wietap* V MOD 255**	84.995.1001.0
***wietap* V MOD NPE 100**	84.995.1100.0

3-phase lightning arrester, type 1

For protection of the building main supply

wietap B3 255H

- Lightning arrester, type 1
- For all systems (in connection with **wietap** GPM 255 if required)
- High limitation of follow current
- 50 kA discharge capacity per pole
- High insulation resistance; can therefore also be placed in front of the meter
- Double terminals for V connection



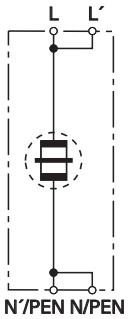
Type	Part No.
wietap B3 255H	84.995.0120.0
Technical Data	
SPD accord. to EN 61643-11	Type 1
SPD accord. to IEC 61643-1	Class I
Nominal voltage AC [U_N]	230/400 V
Maximum continuous voltage AC [U_C]	255 V
Lightn. impulse current (10/350) [L-N/PEN] [I_{imp}]	50 kA
Lightn. impulse current (10/350) [L1+L2+L3-N/PEN] [I_{total}]	100 kA
Nominal discharge current (8/20) [I_n]	50 / 100 kA
Protection level [U_P]	≤ 4 kV
Follow current extinguishing capability AC [I_{fi}]	50 kAeff
Limitation of follow current / selectivity	Non-tripping of a 35 A gL/gG fuse up to 50 kAeff (prosp.)
Operating time [t_A]	≤ 100 ns
Max. pre-fusing bis IK = 50 kAeff (ta ≤ 0,2 s)	500 A gL/gG
Max. pre-fusing bis IK = 50 kAeff (ta ≤ 5 s)	315 A gL/gG
Max. pre-fusing bei IK > 50 kAeff	200 A gL/gG
Max. pre-fusing (L-L´)	125 A gL/gG
TOV-voltage [U_T]	335 V / 5 sec.
Temperature range (Parallel wiring) [T_{UP}]	-40 ... +80 °C
Temperature range (Through wiring) [T_{US}]	-40 ... +60 °C
Wire range (L1, L1´, L2, L2´, L3, L3´, N/PEN, N´/PEN)	10 mm² (AWG 8) solid/fine-stranded
Wire range (L1, L2, L3, N/PEN)	50 mm² (AWG 1) stranded / 35 mm² (AWG 2) fine-stranded
Wire range (L1´, L2´, L3´, N´/PEN)	35 mm² (AWG 2) stranded / 25 mm² (AWG 4) fine-stranded
Mounted on DIN rail acc. to EN 60715	35 mm
Housing material	Thermoplast, UL 94 V-0
Degree of protection	IP 20
Dimensions	6 TE, DIN 43880 (108 mm)
Approvals	CE

1-phase lightning arrester, type 1

For the protection of the building main supply

wietap B1 255H

- Lightning arrester, type 1
- For all systems (in connection with **wietap** GPM 255 if required)
- High limitation of follow current
- 50 kA discharge capacity per pole
- High insulation resistance; can therefore also be placed in front of the meter
- Double terminals for V connection



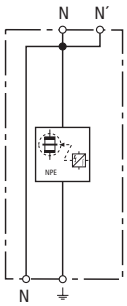
Type	Part No.
wietap B1 255H	84.995.0222.0
Technical Data	
SPD accord. to EN 61643-11	Type 1
SPD accord. to IEC 61643-1	Class I
Nominal voltage ac [U_N]	230 V
Maximum continuous voltage AC [U_C]	255 V
Lightn. impulse current (10/350) [I_{imp}]	50 kA
Nominal discharge current (8/20) [I_n]	50 kA
Protection level [U_P]	≤ 4 kV
Follow current extinguishing capability AC [I_{fi}]	50 kA_{eff}
Limitation of follow current / selectivity	Non-tripping of a 35 A gL/gG fuse up to 50 kAeff (prosp.)
Operating time [t_A]	≤ 100 ns
Max. pre-fusing bis IK = 50 kAeff (ta ≤ 0,2 s)	500 A gL/gG
Max. pre-fusing bis IK = 50 kAeff (ta ≤ 5 s)	315 A gL/gG
Max. pre-fusing bei IK > 50 kAeff	200 A gL/gG
Max. pre-fusing (L-L´)	125 A gL/gG
TOV-voltage [U_T]	335 V / 5 sec.
Temperature range (Parallel wiring) [T_{UP}]	-40 ... +80 °C
Temperature range (Through wiring) [T_{US}]	-40 ... +60 °C
Wire range (L, L´, N/PEN, N´/PEN) [min.]	10 mm² (AWG 8) solid/fine-stranded
Wire range (L, N/PEN) [max.]	50 mm² (AWG 1) stranded / 35 mm² (AWG 2) fine-stranded
Wire range (L´, N´/PEN) [max.]	35 mm² (AWG 2) stranded / 25 mm² (AWG 4) fine-stranded
Mounted on DIN rail acc. to EN 60715	35 mm
Housing material	Thermoplast, UL 94 V-0
Degree of protection	IP 20
Dimensions	2 TE, DIN 43880 (36 mm)
Approvals	CE

N-PE lightning arrester, type 1

For protection of the building main supply

wietap GMP 255

- N-PE lightning arrester, type 1
- In combination with ***wietap*** B1 255H or ***wietap*** B3 255H
- 100 kA discharge capacity



Type	Part No.
wietap **GPM 255**	84.995.0055.0

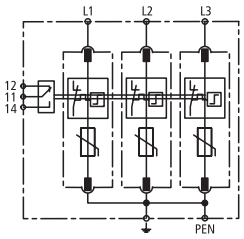
Technical Data	
SPD accord. to EN 61643-11	Type 1
SPD accord. to IEC 61643-1	Class I
Maximum continuous voltage AC [U_C]	255 V
Lightn. impulse current (10/350) [I_{imp}]	100 kA
Nominal discharge current (8/20) [I_n]	100 kA
Protection level [U_P]	≤ 1.5 kV
Follow current extinguishing capability AC [I_{fi}]	100 Aeff
Operating time [t_a]	≤ 100 ns
TOV-voltage	1200 V / 200 ms
Temperature range (Parallel wiring) [T_{UP}]	-40 ... +80 °C
Temperature range (Through wiring) [T_{US}]	-40 ... +60 °C
Function/failure indication	green / red
Wire range (min.)	10 mm² (AWG 8) solid/fine-stranded
Wire range (max.)	50 mm² (AWG 1) stranded / 35 mm² (AWG 2) fine-stranded
Mounted on DIN rail acc. to EN 60715	35 mm
Housing material	Thermoplast, UL 94 V-0
Degree of protection	IP 20
Dimensions	2 TE, DIN 43880 (36 mm)
Approvals	CE

Three-phase combined arrester, type 2

For protection of sub-distributions or the control cabinet main supply

wietap G M TNC 275 (FM)

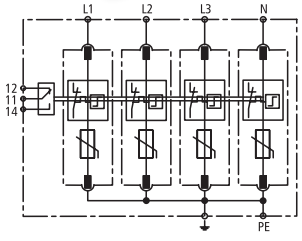
- Surge arrester, type 2
- For TN-C-systems
- With pluggable protection modules
- Function/failure indication according to VDE 0100-534
- Optional with remote signaling contact (FM)
- Vibration and shock tested acc. to EN 60068-2



Type	Part No.
wietap G M TNC 275	84.995.2300.0
wietap G M TNC 275 FM	84.995.2305.0
Replacement module L1, L2, L3 against ⏚	84.995.2010.0
Power network	TN-C
SPD accord. to EN 61643-11	Type 2
SPD accord. to IEC 61643-1	Class II
Nominal voltage AC [U_N]	230/400 V
Nominal frequency [f_N]	50 / 60 Hz
Maximum continuous voltage AC [U_C]	275 V
Nominal discharge current (8/20) [I_n]	20 kA
Max. discharge current (8/20) [I_{max}]	40 kA
Protection level [U_P]	≤ 1.25 kV
Protection level at 5 kA [U_P]	≤ 1 kV
Operating time [t_A]	≤ 25 ns
Maximum network overcurrent protection	125 A gL/gG
Short-circuit proof with max. network overcurrent protection	50 kA_{eff}
TOV-voltage [U_T]	335 V / 5 sec.
Temperature range [T_U]	-40 ... +80 °C
Function/failure indication	green / red
Wire range (min.)	1.5 mm² (AWG 14) solid/fine-stranded
Wire range (max.)	35 mm² (AWG 2) stranded / 25 mm² (AWG 4) fine-stranded
Mounted on DIN rail acc. to EN 60715	35 mm
Housing material	Thermoplast, UL 94 V-0
Degree of protection	IP 20
Dimensions	3 TE, DIN 43880 (54 mm)
Remote signaling contacts = Contact Type	Change-over contact
Switching capacity AC (FM)	250 V/0.5 A
Switching capacity DC (FM)	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Wire range for remote signaling terminals	max. 1.5 mm² (AWG 14) solid/fine-stranded
Approvals	CE, VDE, cULus

wietap G M TNS 275 (FM)

- Surge arrester, type 2
- For TN-S-systems
- With pluggable protection modules
- Function/failure indication according to VDE 0100-534
- Optional with remote signaling contact (FM)
- Vibration and shock tested acc. to EN 60068-2



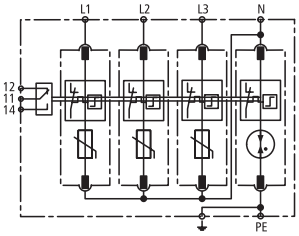
Type	Part No.
wietap G M TNS 275	84.995.2400.0
wietap G M TNS 275 FM	84.995.2405.0
Replacement module L1, L2, L3, N against ⏚	84.995.2010.0
Power network	TN-S
SPD accord. to EN 61643-11	Type 2
SPD accord. to IEC 61643-1	Class II
Nominal voltage AC [U_N]	230/400 V
Nominal frequency [f_N]	50 / 60 Hz
Maximum continuous voltage AC [U_C]	275 V
Nominal discharge current (8/20) [I_n]	20 kA
Max. discharge current (8/20) [I_{max}]	40 kA
Protection level [U_P]	≤ 1.25 kV
Protection level at 5 kA [U_P]	≤ 1 kV
Operating time [t_A]	≤ 25 ns
Maximum network overcurrent protection	125 A gL/gG
Short-circuit proof with max. network overcurrent protection	50 kA_{eff}
TOV-voltage [U_T]	335 V / 5 sec.
Temperature range [T_U]	-40 ... +80 °C
Function/failure indication	green / red
Wire range (min.)	1.5 mm² (AWG 14) solid/fine-stranded
Wire range (max.)	35 mm² (AWG 2) stranded / 25 mm² (AWG 4) fine-stranded
Mounted on DIN rail acc. to EN 60715	35 mm
Housing material	Thermoplast, UL 94 V-0
Degree of protection	IP 20
Dimensions	4 TE, DIN 43880 (72 mm)
Remote signaling contacts = Contact Type	Change-over contact
Switching capacity AC (FM)	250 V/ 0.5 A
Switching capacity DC (FM)	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Wire range for remote signaling terminals	max. 1.5 mm² (AWG 14) solid/fine-stranded
Approvals	CE, VDE, cULus

Three-phase combined arrester, type 2

For protection of sub-distributions or the control cabinet main supply

wietap G M TT 275 (FM)

- Surge arrester, type 2
- For TT- and TN-S-systems ("3+1" circuits)
- With pluggable protection modules
- Function/failure indication according to VDE 0100-534
- Optional with remote signaling contact (FM)
- Vibration and shock tested acc. to EN 60068-2



Type	Part No.
***wietap* G M TT 275**	84.995.2310.0
***wietap* G M TT 275 FM**	84.995.2315.0
Replacement module L1, L2, L3 against N	84.995.2010.0
Replacement module N against ⏚	84.995.2050.0

Power network	TT and TN-S (Variante „3+1“)
SPD accord. to EN 61643-11	Type 2
SPD accord. to IEC 61643-1	Class II
Nominal voltage AC [U_N]	230/400 V
Nominal frequency [f_N]	50 / 60 Hz
Maximum continuous voltage AC [L-N] [U_C]	275 V
Maximum continuous voltage AC [N-PE] [U_C]	255 V
Nominal discharge current (8/20) [I_n]	20 kA
Max. discharge current (8/20) [I_{max}]	40 kA
Lightn. impulse current (10/350) [N-PE] [I_{imp}]	12 kA
Protection level [L-N] [U_P]	≤ 1.25 kV
Protection level [L-N] at 5 kA [U_P]	≤ 1 kV
Protection level [N-PE] [U_P]	≤ 1.5 kV
Follow current extinguishing capability [N-PE] [I_fi]	100 A_{eff}
Operating time [L-N] [t_A]	≤ 25 ns
Operating time [N-PE] [t_A]	≤ 100 ns
Maximum network overcurrent protection	125 A gL/gG
Short-circuit proof with network overcurrent protection with 25 A gL/gG	50 kA_{eff}
TOV-voltage [L-N] [U_T]	335 V / 5 sec.
TOV-voltage [N-PE] [U_T]	1200 V / 200 ms
Temperature range [T_U]	-40 ... +80 °C
Function/failure indication	green / red
Wire range (min.)	1.5 mm² (AWG 14) solid/fine-stranded
Wire range (max.)	35 mm² (AWG 2) stranded / 25 mm² (AWG 4) fine-stranded
Mounted on DIN rail acc. to EN 60715	35 mm
Housing material	Thermoplast, UL 94 V-0
Degree of protection	IP 20
Dimensions	4 TE, DIN 43880 (72 mm)
Remote signaling contacts = Contact Type	Change-over contact
Switching capacity AC (FM)	250 V/0.5 A
Switching capacity DC (FM)	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Wire range for remote signaling terminals	max. 1.5 mm² (AWG 14) solid/fine-stranded
Approvals	CE

Replacement module for *wietap* G M devices

wietap G MOD 275

Varistor protection module
for all L – ⏚; L – N
and for
wietap G M TNS 275 (FM)
N – ⏚

wietap G MOD NPE

Spark gap protection module
for N – ⏚
and for
wietap G M TT 275 (FM)
N – ⏚

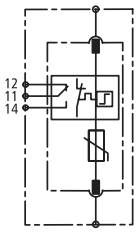
Type	Part No.
***wietap* G MOD 275**	84.995.2010.0
***wietap* G MOD NPE**	84.995.2050.0

Single-phase surge arrester, type 2

For protection of sub-distributions or the control cabinet main supply

wietap G S 275 (FM)

- Surge arrester, type 2
- All-purpose surge arrester
- With pluggable protection modules
- High discharge capacity due to powerful zinc oxid varistor
- High reliability due to arrester monitoring
- Slim design (modular construction) acc. to DIN 43880
- Multi-function connection for conductors and comb rails
- Function/failure indication according to VDE 0100-534
- Optional with remote signaling contact (FM)
- Vibration and shock tested acc. to EN 60068-2



Type	Part No.
wietap G S 275	84.995.2070.0
wietap G S 275 FM	84.995.2090.0
Power network	universal
SPD accord. to EN 61643-11	Type 2
SPD accord. to IEC 61643-1	Class II
Maximum continuous voltage AC [U_C]	275 V
Nominal frequency [f_N]	50 / 60 Hz
Maximum continuous voltage DC [U_C]	350 V
Nominal discharge current (8/20) [I_n]	20 kA
Max. discharge current (8/20) [I_{max}]	40 kA
Protection level [U_P]	≤ 1.25 kV
Protection level at 5 kA [U_P]	≤ 1 kV
Operating time [t_A]	≤ 25 ns
Maximum network overcurrent protection	125 A gL/gG
Short-circuit proof with max. network overcurrent protection	50 kA_{eff}
TOV-voltage [U_T]	335 V / 5 sec.
Temperature range [T_U]	-40 ... +80 °C
Function/failure indication	green / red
Wire range (min.)	1.5 mm² (AWG 14) solid/fine-stranded
Wire range (max.)	35 mm² (AWG 2) stranded / 25 mm² (AWG 4) fine-stranded
Mounted on DIN rail acc. to EN 60715	35 mm
Housing material	Thermoplast, UL 94 V-0
Degree of protection	IP 20
Dimensions	1 TE, DIN 43880 (18 mm)
Remote signaling contacts = Contact Type	Change-over contact
Switching capacity AC (FM)	250 V/0,5 A
Switching capacity DC (FM)	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Wire range for remote signaling terminals	max. 1.5 mm² (AWG 14) solid/fine-stranded
Approvals	CE

wietap G MOD 275

- Replacement module for **wietap** G S 275 (FM)

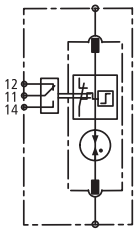
Type	Part No.
wietap G MOD 275	84.995.2010.0

Single-phase surge arrester, type 2

For protection of sub-distributions or the control cabinet main supply

wietap GP C S (FM)

- Surge arrester, type 2
- For use in TT systems in "3+1" and "1+1" circuits acc. to E DIN VDE 0100-534 between neutral conductor N and protective conductor PE
- High discharge capacity
- With pluggable protection modules
- Function/failure indication according to VDE 0100-534
- Optional with remote signaling contact (FM)
- Vibration and shock tested acc. to EN 60068-2



Type	Part No.
***wietap* GP C S**	84.995.2030.0
***wietap* GP C S FM**	84.995.2035.0
Power network	TT
SPD accord. to EN 61643-11	Type 2
SPD accord. to IEC 61643-1	Class II
Maximum continuous voltage AC [U_C]	255 V
Nominal frequency [f_N]	50 / 60 Hz
Nominal discharge current (8/20) [I_n]	20 kA
Max. discharge current (8/20) [I_{max}]	40 kA
Follow current extinguishing capability [I_{fi}]	100 A_{eff}
Lightn. impulse current (10/350) [I_{imp}]	12 kA
Protection level [U_p]	≤ 1.5 kV
Operating time [t_A]	≤ 100 ns
TOV-voltage [U_T]	1200 V / 200 ms
Temperature range [T_U]	-40 ... +80 °C
Function/failure indication	green / red
Wire range (min.)	1.5 mm² (AWG 14) solid/fine-stranded
Wire range (max.)	35 mm² (AWG 2) stranded / 25 mm² (AWG 4) fine-stranded
Mounted on DIN rail acc. to EN 60715	35 mm
Housing material	Thermoplast, UL 94 V-0
Degree of protection	IP 20
Dimensions	1 TE, DIN 43880 (18 mm)
Remote signaling contacts = Contact Type	Change-over contact
Switching capacity AC(FM)	250 V/0.5 A
Switching capacity DC (FM)	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Wire range for remote signaling terminals	max. 1.5 mm² (AWG 14) solid/fine-stranded
Approvals	CE

wietap GP C MOD

- Replacement module for ***wietap*** G CS (FM)

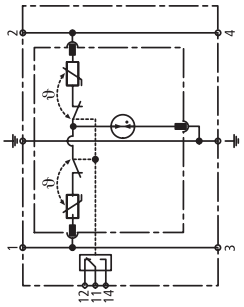
Type	Part No.
***wietap* GP C MOD**	84.995.2060.0

Surge arrester, type 3

For direct load protection in control cabinets or sub-distributions

wietap R M 2P 30 FM
wietap R M 2P 255 (FM)

- Surge arrester, type 3
- Two-pole surge arrester
- High discharge capacity due to powerful zinc oxide varistor
- Slim design (modular construction) acc. to DIN 43880
- With pluggable protection modules
- Function/failure indication according to VDE 0100-534
- Optional with remote signaling contact (FM)
- Vibration and shock tested acc. to EN 60068-2



Type	Part No.	Part No.
wietap R M 2P 30 FM		84.995.3206.0
wietap R M 2P 255	84.995.3200.0	
wietap R M 2P 255 FM	84.995.3205.0	
SPD accord. to EN 61643-11	Type 3	Type 3
SPD accord. to IEC 61643-1	Class III	Category A / Class III
Nominal voltage AC [U_N]	230 V	24 V
Maximum continuous voltage AC [U_C]	255 V	30 V
Maximum continuous voltage DC [U_C]	255 V	30 V
Nominal load current AC [I_L]	25 A	25 A
Nominal discharge current (8/20) [I_n]	3 kA	1 kA
Total discharge current (8/20) [L+N-PE] [I_{total}]	5 kA	2 kA
Combined surge [U_{OC}]	6 kV	2 kV
Combined surge [L+N-PE] [$U_{OC\ total}$]	10 kV	4 kV
Protection level [L-N] [U_P]	≤ 1250 V	≤ 180 V
Protection level [L/N-PE] [U_P]	≤ 1500 V	≤ 630 V
Operating time [L-N] [t_A]	≤ 25 ns	≤ 25 ns
Operating time [L/N-PE] [t_A]	≤ 100 ns	≤ 100 ns
Maximum network overcurrent protection	25 A gL/gG oder B 25 A	25 A gL/gG or B 25 A
Short-circuit proof with network overcurrent protection with 25 A gL/gG	6 kA_{rms}	6 kA_{rms}
TOV-voltage [L-N] [U_T]	335 V / 5 sec.	--
TOV-voltage [L/N-PE] (I) [U_T]	400 V / 5 sec.	--
TOV-voltage [L+N-PE] (II) [U_T]	1200 V + U_O / 200 ms	--
Temperature range [T_U]	-40 ... +80 °C	
Function/failure indication	green / red	
Wire range min.	0.5 mm² (AWG 20) solid/fine-stranded	
Wire range max.	4 mm² (AWG 12) solid / 2.5 mm² (AWG 14) fine-stranded	
Mounted on DIN rail acc. to EN 60715	35 mm	
Housing material	Thermoplast, UL 94 V-0	
Degree of protection	IP 20	
Dimensions	1 TE, DIN 43880 (18 mm)	
Remote signaling contacts = Contact Type	Change-over contact	
Switching capacity AC (FM)	250 V/0.5 A	
Switching capacity DC (FM)	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A	
Wire range for Remote signaling terminals	max. 1.5 mm² (AWG 16) solid/fine-stranded	
Approvals		

wietap R MOD 255

- Replacement module for **wietap** R M 2P 255 (FM)

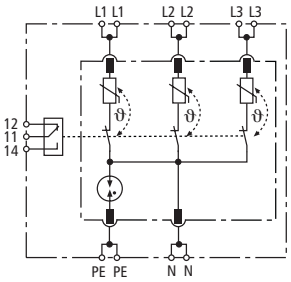
Type	Part No.
wietap R MOD 255	84.995.3010.0

Surge arrester, type 3

For direct load protection in control cabinets or sub-distributions

wietap R M 4P 255 (FM)

- Surge arrester, type 3
- Four-pole surge arrester
- High discharge capacity due to powerful zinc oxide varistor
- Slim design (modular construction) acc. to DIN 43880
- With pluggable protection modules
- Function/failure indication according to VDE 0100-534
- Optional with remote signaling contact (FM)
- Vibration and shock tested acc. to EN 60068-2



Type	Part No.
***wietap* R M 4P 255**	84.995.3400.0
***wietap* R M 4P 255 FM**	84.995.3405.0

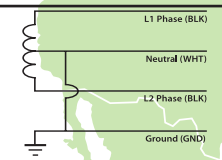
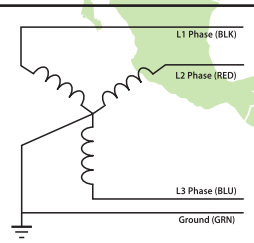
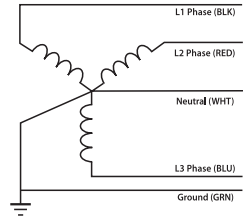
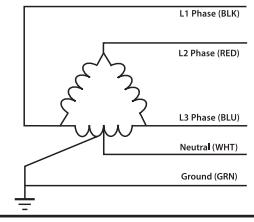
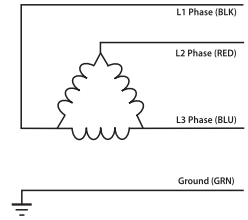
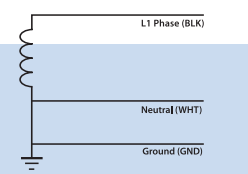
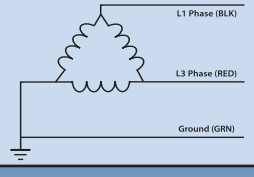
Technical Data	
SPD accord. to EN 61643-11	Type 3
SPD accord. to IEC 61643-1	Class III
Nominal voltage AC [U_N]	230/400 V
Maximum continuous voltage AC [U_C]	255/440 V
Nominal load current AC [I_L]	25 A
Nominal discharge current (8/20) [I_n]	3 kA
Total discharge current (8/20) [L+N-PE] [I_{total}]	8 kA
Combined surge [U_{OC}]	6 kV
Combined surge [L+N-PE] [$U_{OC\ total}$]	16 kV
Protection level [L-N] [U_P]	≤ 1000 V
Protection level [L/N-PE] [U_P]	≤ 1500 V
Operating time [L-N] [t_A]	≤ 25 ns
Operating time [L/N-PE] [t_A]	≤ 100 ns
Maximum network overcurrent protection	25 A gL/gG oder B 25 A
Short-circuit proof with network overcurrent protection with 25 A gL/gG	6 kA_{eff}
TOV-voltage [L-N] [U_T]	335 V / 5 sec.
TOV-voltage [L/N-PE] (I) [U_T]	400 V / 5 sec.
TOV-voltage [L+N-PE] (II) [U_T]	1200 V + U0 / 200 ms
Temperature range [T_U]	-40 ... +80 °C
Function/failure indication	green / red
Wire range (min.)	0.5 mm² (AWG 20) solid/fine-stranded
Wire range (max.)	4 mm² (AWG 12) solid / 2.5 mm² (AWG 14) fine-stranded
Mounted on DIN rail acc. to EN 60715	35 mm
Housingwerkstoff	Thermoplast, UL 94 V-0
Degree of protection	IP 20
Dimensions	2 TE, DIN 43880 (36 mm)
Remote signaling contacts = Contact Type	Change-over contact
Switching capacity AC (FM)	250 V/0.5 A
Switching capacity DC (FM)	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Wire range for remote signaling terminals	max. 1.5 mm² (AWG 16) solid/fine-stranded
Approvals	CE

wietap R M MOD 4P 255

- Replacement module for ***wietap*** R M 4P 255

Type	Part No.
***wietap* R M MOD 4P 255**	84.995.3020.0

Solutions for Category B for the different mains systems: Selection Matrix

Circuit	Circuit Voltage Configuration	Used Types	Connected between
	120/240V Split Phase 1Ø 3W + Grnd	***wietap*** G S 150 FM UL ***wietap*** G S 150 FM UL	L1 Phase-Grnd L2 Phase-Grnd
	240/480V Split Phase 1Ø 3W + Grnd	***wietap*** G S 320 FM UL ***wietap*** G S 320 FM UL	L1 Phase-Grnd L2 Phase-Grnd
	127/254V Split Phase 1Ø 3W + Grnd	***wietap*** G S 150 FM UL ***wietap*** G S 150 FM UL	L1 Phase-Grnd L2 Phase-Grnd
	120/208V Wye 3Ø 3W + Grnd	***wietap*** G S 150 FM UL ***wietap*** G S 150 FM UL ***wietap*** G S 150 FM UL	L1 Phase-Grnd L2 Phase-Grnd L3 Phase-Grnd
	277/480V Wye 3Ø 3W + Grnd	***wietap*** G S 320 FM UL ***wietap*** G S 320 FM UL ***wietap*** G S 320 FM UL	L1 Phase-Grnd L2 Phase-Grnd L3 Phase-Grnd
	347/600V Wye 3Ø 3W + Grnd	***wietap*** G S 440 FM UL ***wietap*** G S 440 FM UL ***wietap*** G S 440 FM UL	L1 Phase-Grnd L2 Phase-Grnd L3 Phase-Grnd
	120/208V Wye 3Ø 4W + Grnd	***wietap*** G S 150 FM UL ***wietap*** G S 150 FM UL ***wietap*** G S 150 FM UL ***wietap*** G S 150 FM UL	L1 Phase-Grnd L2 Phase-Grnd L3 Phase-Grnd Neutral-Grnd
	277/480V Wye 3Ø 4W + Grnd	***wietap*** G S 320 FM UL ***wietap*** G S 320 FM UL ***wietap*** G S 320 FM UL ***wietap*** G S 320 FM UL	L1 Phase-Grnd L2 Phase-Grnd L3 Phase-Grnd Neutral-Grnd
	347/600V Wye 3Ø 4W + Grnd	***wietap*** G S 440 FM UL ***wietap*** G S 440 FM UL ***wietap*** G S 440 FM UL ***wietap*** G S 440 FM UL	L1 Phase-Grnd L2 Phase-Grnd L3 Phase-Grnd Neutral-Grnd
	127/220V Wye 3Ø 4W + Grnd	***wietap*** G S 150 FM UL ***wietap*** G S 150 FM UL ***wietap*** G S 150 FM UL ***wietap*** G S 150 FM UL	L1 Phase-Grnd L2 Phase-Grnd L3 Phase-Grnd Neutral-Grnd
	120/240V High Leg Delta - B High	***wietap*** G S 150 FM UL ***wietap*** G S 150 FM UL ***wietap*** G S 150 FM UL ***wietap*** G S 275 FM UL	L1 Phase-Neutral L3 Phase-Neutral Neutral-Grnd L2 Phase-Neutral
	240/480V High Leg Delta - B High	***wietap*** G S 320 FM UL ***wietap*** G S 320 FM UL ***wietap*** G S 320 FM UL ***wietap*** G S 600 FM UL	L1 Phase-Neutral L3 Phase-Neutral Neutral-Grnd L2 Phase-Neutral
	480V Delta 3Ø 3W + Grnd & HRG Wye	***wietap*** G S 600 FM UL ***wietap*** G S 600 FM UL ***wietap*** G S 600 FM UL	L1 Phase-Grnd L2 Phase-Grnd L3 Phase-Grnd
	240V Delta 3Ø 3W + Grnd	***wietap*** G S 320 FM UL ***wietap*** G S 320 FM UL ***wietap*** G S 320 FM UL	L1 Phase-Grnd L2 Phase-Grnd L3 Phase-Grnd
	600V Delta 3Ø 3W + Grnd & HRG	***wietap*** G S WE 600 FM UL ***wietap*** G S WE 600 FM UL ***wietap*** G S WE 600 FM UL	L1 Phase-Grnd L2 Phase-Grnd L3 Phase-Grnd
	120V Single Phase	***wietap*** G S 150 FM UL	L1 Phase-Neutral
	240V Single Phase	***wietap*** G S 320 FM UL	L1 Phase-Neutral
	127V Single Phase	***wietap*** G S 150 FM UL	L1 Phase-Neutral
	254V Single Phase	***wietap*** G S 320 FM UL	L1 Phase-Neutral
	347V Single Phase	***wietap*** G S 440 FM UL	L1 Phase-Neutral
	277V Single Phase	***wietap*** G S 320 FM UL	L1 Phase-Neutral
	480V Single Phase	***wietap*** G S 600 FM UL	L1 Phase-Neutral
	600V Single Phase	***wietap*** G S WE 600 FM UL	L1 Phase-Neutral
	480V B Corner Grnd Delta 3Ø 3W + Grnd	***wietap*** G S 600 FM UL ***wietap*** G S 600 FM UL	L1 Phase-Grnd L3 Phase-Grnd
	240V B Corner Grnd Delta 3Ø 3W + Grnd	***wietap*** G S 320 FM UL ***wietap*** G S 320 FM UL	L1 Phase-Grnd L3 Phase-Grnd
	600V B Corner Grnd Delta 3Ø 3W + Grnd	***wietap*** G S WE 600 FM UL ***wietap*** G S WE 600 FM UL	L1 Phase-Grnd L3 Phase-Grnd

Overvoltage Protection for **North and Central America**

For the North and Central American region OVP modules have to be used with UL or CSA approval. At the same time the voltage levels are different compared to Europe or the Asian region.

For this reason Wieland offers specialized OVP modules. The green marked countries have energy network systems according UL and CSA mains systems and voltage levels.

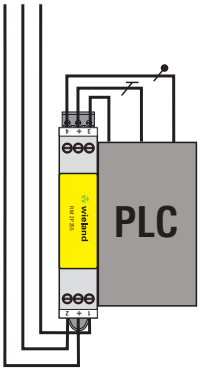
The overvoltage protection according IEEE is defined into 3 different areas:

- **Category C (Class I according IEC):** is mainly used at the feed in point of a building or production site. Mainly at outside termination
- **Category B (Class II according IEC):** this category is often used inside of buildings in main distribution panels or in switch board cabinets of machines
- **Category A (Class III according IEC):** is mainly used for the protection of single devices inside a switch board cabinet

Wieland is offering solutions for inside the building. This means for Category B and Category A.

At Category A applications the arrester is connected up front in series to the device.

The rated voltage of the OVP is selected according the nominal voltage of the device which is connected.



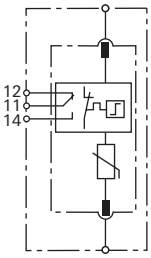
Category A

Single-phase surge arrester, category B & A

For protection of sub-distributions or the control cabinet main supply

wietap G S 150 FM UL
wietap G S 275 FM UL

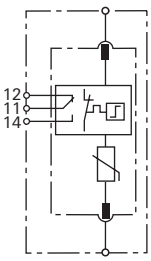
- Surge arrester, type 2, category B
- Multi-purpose surge arrester
- With plug-in protection module
- Thermo Dynamic Control SPD monitoring device
- Small housing
- Operating state/fault indication by indicator flag in window
- With signaling contact (FM)
- Vibration and shock tested according EN 60068-2



Type	Part No.	Part No.
wietap G S 150 FM UL	84.995.2092.1	
wietap G S 275 FM UL		84.995.2090.1
SPD accord. to EN 61643-11	Type 2	Type 2
SPD accord. to IEC 61643-1	Category B / Class II	Category B / Class II
Maximum continuous voltage AC [U_C]	150 V	275 V
Maximum continuous voltage DC [U_C]	200 V	350 V
Rated varistor voltage AC [U_{mov}]	200 V	350 V
Rated voltage (50/60 Hz) [V]	150 V	275 V
Max. continuous operating voltage [MCOV]	150 V	275 V
Voltage protection rating [VPR]	700 V	1000 V
Rated discharge current [I_n]	20 kA	20 kA
Max. discharge current (8/20) [I_{max}]	40 kA	40 kA
Protection level [U_P]	≤ 0.7 kV	≤ 1.25 kV
Protection level at 5 kA [U_P]	≤ 0.55 kV	≤ 1 kV
Operating time [t_A]	≤ 25 ns	≤ 25 ns
Maximum network overcurrent protection	125 A gL/gG	125 A gL/gG
Short-circuit proof with max. network overcurrent protection	50 kA_{rms}	50 kA_{rms}
TOV-voltage [U_T]	175 V / 5 sec.	335 V / 5 sec.
Temperature range [T_U] acc. to UL 1449 3rd edition acc. to EN 61643-11	 0... +85 °C -40... +85 °C	
Function/failure indication	green / red	
Wire range (min.)	1.5 mm² (AWG 14) solid/fine-stranded	
Wire range (max.)	35 mm² (AWG 2) stranded / 25 mm² (AWG 4) fine-stranded	
Mounted on DIN rail acc. to EN 60715	35 mm	
Housing material	thermoplastic, UL 94 V-0	
Degree of protection	IP 20	
Dimensions	1 mod., DIN 43880	
Remote signaling contacts (FM)	changeover contact	
Switching capacity AC (FM)	250 V/0.5 A	
Switching capacity DC (FM)	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A	
Wire range for remote signaling terminals	max. 1.5 mm² (AWG 14) solid/fine-stranded	
Approvals	CE, cULus, CSA	

wietap G S 320 FM UL
wietap G S 385 FM UL

- Surge arrester, type 2, category B
- Multi-purpose surge arrester
- With plug-in protection module
- Thermo Dynamic Control SPD monitoring device
- Small housing
- Operating state/fault indication by indicator flag in window
- With signaling contact (FM)
- Vibration and shock tested according EN 60068-2



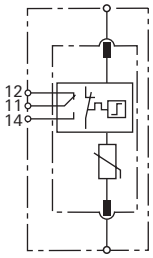
Type	Part No.	Part No.
wietap G S 320 FM UL	84.995.2093.1	
wietap G S 385 FM UL		84.995.2094.1
SPD accord. to EN 61643-11	Type 2	Type 2
SPD accord. to IEC 61643-1	Category B / Class II	Category B / Class II
Maximum continuous voltage AC [U_C]	320 V	385 V
Maximum continuous voltage DC [U_C]	420 V	500 V
Rated varistor voltage AC [U_{mov}]	420 V	500 V
Rated voltage (50/60 Hz) [V]	320 V	385 V
Max. continuous operating voltage [MCOV]	320 V	385 V
Voltage protection rating [VPR]	1200 V	1500 V
Rated discharge current [I_n]	20 kA	20 kA
Max. discharge current (8/20) [I_{max}]	40 kA	40 kA
Protection level [U_P]	≤ 1.5 kV	≤ 1.75 kV
Protection level at 5 kA [U_P]	≤ 1.2 kV	≤ 1.35 kV
Operating time [t_A]	≤ 25 ns	≤ 25 ns
Maximum network overcurrent protection	125 A gL/gG	125 A gL/gG
Short-circuit proof with max. network overcurrent protection	25 kA_{rms}	25 kA_{rms}
TOV-voltage [U_T]	335 V / 5 sec.	385 V / 5 sec.
Temperature range [T_U] acc. to UL 1449 3rd edition acc. to EN 61643-11	 0... +85 °C -40... +85 °C	
Function/failure indication	green / red	
Wire range (min.)	1.5 mm² (AWG 14) solid/fine-stranded	
Wire range (max.)	35 mm² (AWG 2) stranded / 25 mm² (AWG 4) fine-stranded	
Mounted on DIN rail acc. to EN 60715	35 mm	
Housing material	thermoplastic, UL 94 V-0	
Degree of protection	IP 20	
Dimensions	1 mod., DIN 43880	
Remote signaling contacts (FM)	changeover contact	
Switching capacity AC (FM)	250 V/0.5 A	
Switching capacity DC (FM)	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A	
Wire range for remote signaling terminals	max. 1.5 mm² (AWG 14) solid/fine-stranded	
Approvals	CE, cULus, CSA	

Single-phase surge arrester, category B & A

For protection of sub-distributions or the control cabinet main supply

wietap G S 440 FM UL
wietap G S 600 FM UL

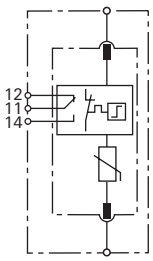
- Surge arrester, type 2, category B
- Multi-purpose surge arrester
- With plug-in protection module
- Thermo Dynamic Control SPD monitoring device
- Small housing
- Operating state/fault indication by indicator flag in window
- With signaling contact (FM)
- Vibration and shock tested according EN 60068-2



Type	Part No.	Part No.
wietap G S 440 FM UL	84.995.2095.1	
wietap G S 600 FM UL		84.995.2096.1
SPD accord. to EN 61643-11	Type 2	Type 2
SPD accord. to IEC 61643-1	Category B / Class II	Category B / Class II
Maximum continuous voltage AC [U_c]	440 V	600 V
Maximum continuous voltage DC [U_c]	585 V	600 V
Rated varistor voltage AC [U_{mov}]	585 V	600 V
Rated voltage (50/60 Hz) [V]	440 V	600 V
Max. continuous operating voltage [MCOV]	440 V	600 V
Voltage protection rating [VPR]	1500 V	2000 V
Rated discharge current [I_n]	20 kA	20 kA
Max. discharge current (8/20) [I_{max}]	40 kA	30 kA
Protection level [U_P]	≤ 2 kV	≤ 2.5 kV
Protection level at 5 kA [U_P]	≤ 1.7 kV	≤ 2 kV
Operating time [t_A]	≤ 25 ns	≤ 25 ns
Maximum network overcurrent protection	125 A gL/gG	100 A gL/gG
Short-circuit proof with max. network overcurrent protection	25 kA_{rms}	25 kA_{rms}
TOV-voltage [U_T]	580 V / 5 sec.	600 V / 5 sec.
Temperature range [T_U] acc. to UL 1449 3rd edition acc. to EN 61643-11	 0... +85 °C -40... +85 °C	
Function/failure indication	green / red	
Wire range (min.)	1.5 mm² (AWG 14) solid/fine-stranded	
Wire range (max.)	35 mm² (AWG 2) stranded / 25 mm² (AWG 4) fine-stranded	
Mounted on DIN rail acc. to EN 60715	35 mm	
Housing material	thermoplastic, UL 94 V-0	
Degree of protection	IP 20	
Dimensions	1 mod., DIN 43880	
Remote signaling contacts (FM)	changeover contact	
Switching capacity AC (FM)	250 V/0.5 A	
Switching capacity DC (FM)	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A	
Wire range for remote signaling terminals	max. 1.5 mm² (AWG 14) solid/fine-stranded	
Approvals	CE cULus SB	

wietap G S WE 600 FM UL

- Surge arrester, type 2, category B
- Multi-purpose surge arrester
- With plug-in protection module
- Thermo Dynamic Control SPD monitoring device
- Small housing
- Operating state/fault indication by indicator flag in window
- With signaling contact (FM)
- Vibration and shock tested according EN 60068-2



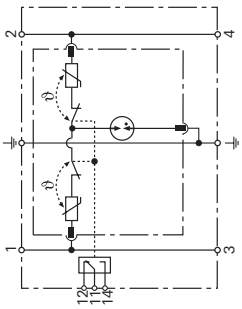
Type	Part No.	Part No.
wietap G S WE 600 FM UL	84.995.2097.1	
SPD accord. to EN 61643-11	Type 2	
SPD accord. to IEC 61643-1	Category B / Class II	
Maximum continuous voltage AC [U_c]	600 V	
Maximum continuous voltage DC [U_c]	600 V	
Rated varistor voltage AC [U_{mov}]	750V	
Rated voltage (50/60 Hz) [V]	600 V	
Max. continuous operating voltage [MCOV]	750 V	
Voltage protection rating [VPR]	2500V	
Rated discharge current [I_n]	10 kA	
Max. discharge current (8/20) [I_{max}]	25 kA	
Protection level [U_P]	≤ 3 kV	
Protection level at 5 kA [U_P]	≤ 2.5 kV	
Operating time [t_A]	≤ 25 ns	
Maximum network overcurrent protection	100 A gL/gG	
Short-circuit proof with max. network overcurrent protection	25 kA_{rms}	
TOV-voltage [U_T]	900 V / 5 sec.	
Temperature range [T_U] acc. to UL 1449 3rd edition acc. to EN 61643-11	 0... +85 °C -40... +85 °C	
Function/failure indication	green / red	
Wire range (min.)	1.5 mm² (AWG 14) solid/fine-stranded	
Wire range (max.)	35 mm² (AWG 2) stranded / 25 mm² (AWG 4) fine-stranded	
Mounted on DIN rail acc. to EN 60715	35 mm	
Housing material	thermoplastic, UL 94 V-0	
Degree of protection	IP 20	
Dimensions	1 mod., DIN 43880	
Remote signaling contacts (FM)	changeover contact	
Switching capacity AC (FM)	250 V/0.5 A	
Switching capacity DC (FM)	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A	
Wire range for remote signaling terminals	max. 1.5 mm² (AWG 14) solid/fine-stranded	
Approvals	CE cULus SB	

Surge arrester, category A

For direct load protection in control cabinets or sub-distributions

wietap R M 2P 30 FM

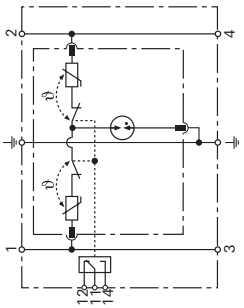
- Surge arrester, type 3
- Two-pole surge arrester
- High discharge capacity due to powerful zinc oxide varistor
- Slim design (modular construction) acc. to DIN 43880
- With pluggable protection modules
- Function/failure indication according to VDE 0100-534
- With remote signaling contact (FM)
- Vibration and shock tested acc. to EN 60068-2



Type	Part No.
wietap R M 2P 30 FM	84.995.3206.0
Technical Data	
SPD accord. to EN 61643-11	Type 3
SPD accord. to IEC 61643-1	Category A / Class III
Rated voltage (50/60 Hz) [V]	24 V
Maximum continuous voltage AC [U_C]	30 V
Maximum continuous voltage DC [U_C]	30 V
Max. continuous operating voltage [MCOV]	30 V
Voltage protection rating [VPR]	330 V
Rated current AC acc. UL 1449 3rd edition | EN 61643-11	20 A | 25 A
Rated discharge current (8/20) [I_n]	1 kA
Total discharge current (8/20) [L+N-PE] [I_{total}]	2 kA
Combined surge [U_{OC}]	2 kV
Combined surge [L+N-PE] [$U_{OC\ total}$]	4 kV
Protection level [L-N] [U_P]	≤ 180 V
Protection level [L/N-PE] [U_P]	≤ 630 V
Operating time [L-N] [t_A]	≤ 25 ns
Operating time [L/N-PE] [t_A]	≤ 100 ns
Maximum network overcurrent protection	25 A gL/gG or B 25 A
Short-circuit proof with network overcurrent protection with 25 A gL/gG	6 kA_{rms}
Temperature range [T_U]	
acc. to UL 1449 3rd edition	0... +85 °C
acc. to EN 61643-11	-40... +85 °C
Function/failure indication	green / red
Wire range (min.)	0.5 mm² (AWG 20) solid/fine-stranded
Wire range (max.)	4 mm² (AWG 12) solid / 2.5 mm² (AWG 14) fine-stranded
Mounted on DIN rail acc. to EN 60715	35 mm
Housing material	thermoplastic, UL 94 V-0
Degree of protection	IP 20
Dimensions	1 mod., DIN 43880
Remote signaling contacts (FM)	changeover contact
Switching capacity AC (FM)	250 V/0.5 A
Switching capacity DC (FM)	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Wire range for remote signaling terminals	max. 1.5 mm² (AWG 16) solid/fine-stranded
Approvals	CE cULus SR

wietap R M 2P 150 FM

- Surge arrester, type 3
- Two-pole surge arrester
- High discharge capacity due to powerful zinc oxide varistor
- Slim design (modular construction) acc. to DIN 43880
- With pluggable protection modules
- Function/failure indication according to VDE 0100-534
- With remote signaling contact (FM)
- Vibration and shock tested acc. to EN 60068-2



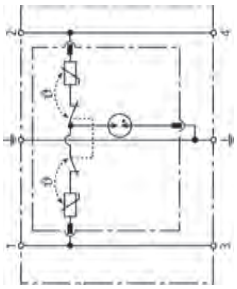
Type	Part No.
wietap R M 2P 150 FM	84.995.3209.0
Technical Data	
SPD accord. to EN 61643-11	Type 3
SPD accord. to IEC 61643-1	Category A / Class III
Rated voltage (50/60 Hz)	120 V
Maximum continuous voltage AC [U_C]	150 V
Maximum continuous voltage DC [U_C]	150 V
Max. continuous operating voltage [MCOV]	150 V
Voltage protection rating [VPR]	700 V
Rated current AC acc. UL 1449 3rd edition | EN 61643-11	20 A | 25 A
Rated discharge current (8/20) [I_n]	2 kA
Total discharge current (8/20) [L+N-PE] [I_{total}]	4 kA
Combined surge [U_{OC}]	4 kV
Combined surge [L+N-PE] [$U_{OC\ total}$]	8 kV
Protection level [L-N] [U_P]	≤ 640 V
Protection level [L/N-PE] [U_P]	≤ 800 V
Operating time [L-N] [t_A]	≤ 25 ns
Operating time [L/N-PE] [t_A]	≤ 100 ns
Maximum network overcurrent protection	25 A gL/gG or B 25 A
Short-circuit proof with network overcurrent protection with 25 A gL/gG	6 kA_{rms}
Temperature range [T_U]	
acc. to UL 1449 3rd edition	0... +85 °C
acc. to EN 61643-11	-40... +85 °C
Function/failure indication	green / red
Wire range (min.)	0.5 mm² (AWG 20) solid/fine-stranded
Wire range (max.)	4 mm² (AWG 12) solid / 2.5 mm² (AWG 14) fine-stranded
Mounted on DIN rail acc. to EN 60715	35 mm
Housing material	thermoplastic, UL 94 V-0
Degree of protection	IP 20
Dimensions	1 mod., DIN 43880
Remote signaling contacts (FM)	changeover contact
Switching capacity AC (FM)	250 V/0.5 A
Switching capacity DC (FM)	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Wire range for remote signaling terminals	max. 1.5 mm² (AWG 14) solid/fine-stranded
Approvals	CE cULus SR

Surge arrester, category A

For direct load protection in control cabinets or sub-distributions

wietap R M 2P 255

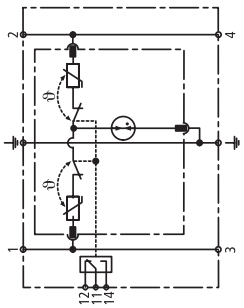
- Surge arrester, type 3
- Two-pole surge arrester
- High discharge capacity due to powerful zinc oxide varistor
- Slim design (modular construction) acc. to DIN 43880
- With pluggable protection modules
- Function/failure indication according to VDE 0100-534
- Vibration and shock tested acc. to EN 60068-2



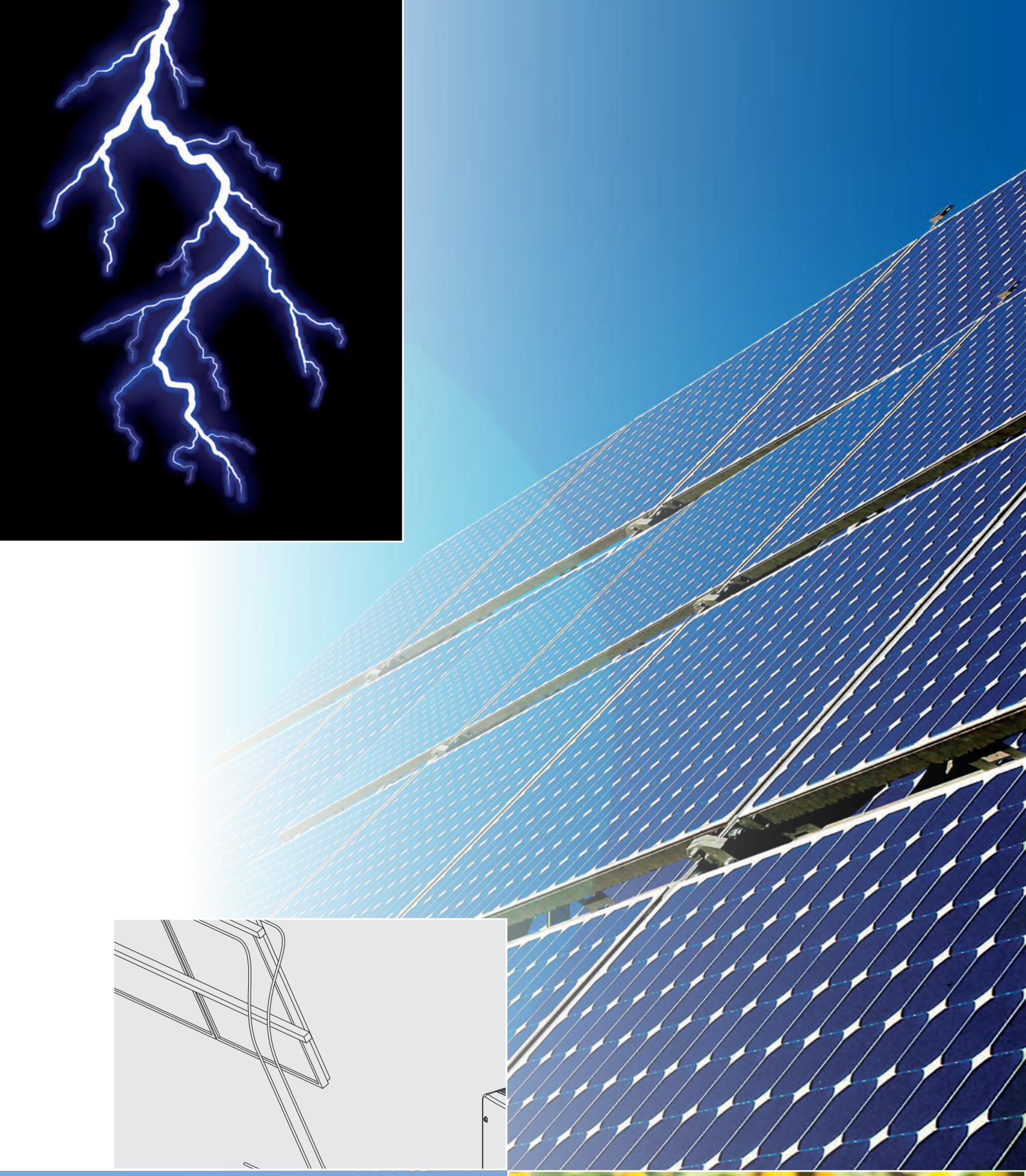
Type	Part No.
wietap R M 2P 255	84.995.3200.0
Technical Data	
SPD accord. to EN 61643-11	Type 3
SPD accord. to IEC 61643-1	Category A / Class III
Rated voltage (50/60 Hz) [V]	240 V
Maximum continuous voltage AC [U_C]	255 V
Maximum continuous voltage DC [U_C]	255 V
Max. continuous operating voltage [MCOV]	255 V
Voltage protection rating [VPR]	1200 V
Rated current AC	20 A
Rated discharge current (8/20) [I_n]	3 kA
Total discharge current (8/20) [L+N-PE] [I_{total}]	5 kA
Combined surge [U_{OC}]	6 kV
Combined surge [L+N-PE] [$U_{OC\ total}$]	10 kV
Protection level [L-N] [U_P]	≤ 1250 V
Protection level [L/N-PE] [U_P]	≤ 1500 V
Operating time [L-N] [t_A]	≤ 25 ns
Operating time [L/N-PE] [t_A]	≤ 100 ns
Maximum network overcurrent protection	25 A gL/gG or B 25 A
Short-circuit proof with network overcurrent protection with 25 A gL/gG	6 kA_{rms}
TOV-voltage [L-N] [U_T]	335 V / 5 sec.
TOV-voltage [L/N-PE] (I) [U_T]	400 V / 5 sec.
TOV-voltage [L+N-PE] (II) [U_T]	1200 V + UCS / 200 ms
Temperature range [T_U] acc. to UL 1449 3rd edition acc. to EN 61643-11	 0... +85 °C -40... +85 °C
Function/failure indication	green / red
Wire range (min.)	0.5 mm² (AWG 20) solid/fine-stranded
Wire range (max.)	4 mm² (AWG 12) solid / 2.5 mm² (AWG 14) fine-stranded
Mounted on DIN rail acc. to EN 60715	35 mm
Housing material	thermoplastic, UL 94 V-0
Degree of protection	IP 20
Dimensions	1 mod., DIN 43880
Approvals	CE, EAC, cULus, CSA

wietap R M 2P 255 FM

- Surge arrester, type 3
- Two-pole surge arrester
- High discharge capacity due to powerful zinc oxide varistor
- Slim design (modular construction) acc. to DIN 43880
- With pluggable protection modules
- Function/failure indication according to VDE 0100-534
- With remote signaling contact (FM)
- Vibration and shock tested acc. to EN 60068-2



Type	Part No.
wietap R M 2P 255 FM	84.995.3205.0
Technical Data	
SPD accord. to EN 61643-11	Type 3
SPD accord. to IEC 61643-1	Category A / Class III
Rated voltage (50/60 Hz) [V]	240 V
Maximum continuous voltage AC [U_C]	255 V
Maximum continuous voltage DC [U_C]	255 V
Max. continuous operating voltage [MCOV]	255 V
Voltage protection rating [VPR]	1200 V
Rated current AC acc. UL 1449 3rd edition | EN 61643-11	20 A | 25 A
Rated discharge current (8/20) [I_n]	3 kA
Total discharge current (8/20) [L+N-PE] [I_{total}]	5 kA
Combined surge [U_{OC}]	6 kV
Combined surge [L+N-PE] [$U_{OC\ total}$]	10 kV
Protection level [L-N] [U_P]	≤ 1250 V
Protection level [L/N-PE] [U_P]	≤ 1500 V
Operating time [L-N] [t_A]	≤ 25 ns
Operating time [L/N-PE] [t_A]	≤ 100 ns
Maximum network overcurrent protection	25 A gL/gG or B 25 A
Short-circuit proof with network overcurrent protection with 25 A gL/gG	6 kA_{rms}
TOV-voltage [L-N] [U_T]	335 V / 5 sec.
TOV-voltage [L/N-PE] (I) [U_T]	400 V / 5 sec.
TOV-voltage [L+N-PE] (II) [U_T]	1200 V + UCS / 200 ms
Temperature range [T_U] acc. to UL 1449 3rd edition acc. to EN 61643-11	 0... +85 °C -40... +85 °C
Function/failure indication	green / red
Wire range (min.)	0.5 mm² (AWG 20) solid/fine-stranded
Wire range (max.)	4 mm² (AWG 12) solid / 2.5 mm² (AWG 14) fine-stranded
Mounted on DIN rail acc. to EN 60715	35 mm
Housing material	thermoplastic, UL 94 V-0
Degree of protection	IP 20
Dimensions	1 mod., DIN 43880
Remote signaling contacts (FM)	changeover contact
Switching capacity AC (FM)	250 V/0.5 A
Switching capacity DC (FM)	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Wire range for remote signaling terminals	max. 1.5 mm² (AWG 16) solid/fine-stranded
Approvals	CE, EAC, cULus, CSA



Overvoltage protection for **Photovoltaic systems**

Photovoltaic systems, abbreviated as PV systems, are a considerable investment that must be protected from failure and damage. As these systems are installed outdoors, they are exposed to the danger of overvoltage from lightning strikes.

Overvoltage protection in the DC circuit with central inverters

The generator circuit (the PV modules) produces a direct current. Connecting the PV modules and arrays in series allows voltages of 1000 V to be reached. This combination with the fact that the generator circuit can continue to supply energy after overvoltage requires sophisticated technology for the overvoltage arrester.

DC overvoltage protection:

The PV/DC overvoltage arresters are specially designed for use in PV systems.

Both the housing technology and the connections are designed for the requirements of a PV systems high voltages and conductor cross-sections. With a width of only 36 or 48 mm, the units are easily installed inside distribution panels, requiring the minimum of space.

- High discharge capacity due to powerful zinc-oxide varistor
- No fire hazard caused by permanent electric arc due to combined disconnect and short-circuit facility. Overload indicated in display window
- Signaling contacts for remote monitoring in all remote signaling types

AC overvoltage protection:

On the AC side of the inverters overvoltage protection must also be installed. The arresters listed here are the most commonly used versions.

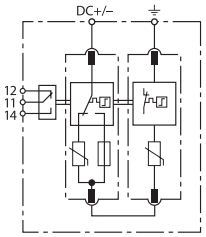
Suitable units can be found inside the chapters ***wietap*** IEC and ***wietap*** UL/CSA.

Surge protection for solar modules

To be used in photovoltaic DC circuits

wietap GS PV SCI 600 (FM)

- DC solar arrester for 600 V string voltage
- For DC grounded solar systems
- No fire hazard during overload due to combined disconnection and short-circuit device
- Safe, arc-free replacement of protection modules due to integrated DC fuse
- High discharge capacity
- Function/failure indication
- ***wietap*** GS PV SCI 600 FM with remote signaling contact (FM)



Type	Part No.
wietap **GS PV SCI 600**	84.995.2550.0
wietap **GS PV SCI 600 FM**	84.995.2555.0

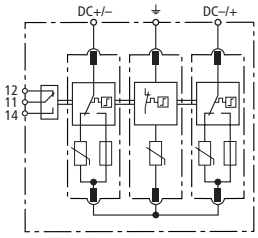
Technical Data	
Connection between	DC – Grnd
SPD accord. to EN 50539-11	Type 2
SPD accord. to IEC 61643-11	Class II
Maximum PV voltage [U_{CPV}]	≤ 600 V
Protection level [U_P]	≤ 2.5 kV
Protection level at 5 kA [U_P]	≤ 2 kV
Nominal discharge current (8/20) [(DC+/DC-) → PE] [I_n]	12.5 kA
Max. discharge current (8/20) [(DC+/DC-) → PE] [I_{max}]	25 kA
Operating time [t_A]	≤ 25 ns
Temperature range [T_U]	-40 ... +80 °C
Short-circuit resistance (I_{SCPV})	1000 A
Function/failure indication	green / red
Wire range (min.)	1.5 mm² (AWG 14) solid/fine-stranded
Wire range (max.)	35 mm² (AWG 2) stranded / 25 mm² (AWG 4) fine-stranded
Mounted on DIN rail acc. to EN 60715	35 mm
Housing material	Thermoplast, UL 94 V-0
Degree of protection	IP 20
Dimensions	2 TE, DIN 43880 (36 mm)
Remote signaling contacts (FM)	Change-over contact
Switching capacity AC (FM)	250 V/0.5 A
Switching capacity DC (FM)	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Wire range for remote signaling terminals	max. 1.5 mm² (AWG 14) solid/fine-stranded
Approvals	CE cULus CSA

Surge protection for solar modules

To be used in photovoltaic DC circuits

wietap GM YPV SCI 600 (FM)

- DC solar arrester for 600 V string voltage
- No fire hazard during overload due to combined disconnection and short-circuit device
- Safe, arc-free replacement of protection modules due to integrated DC fuse
- High discharge capacity
- Function/failure indication
- ***wietap*** GM YPV SCI 600 FM with remote signaling contact (FM)



Type	Part No.
wietap **GM YPV SCI 600**	84.995.2511.0
wietap **GM YPV SCI 600 FM**	84.995.2516.0
Repl. module "+" or "–" against int. neutral point	84.995.2053.0
Repl. module int. neutral point against ⏚	84.995.2010.0

Technical Data	
Connection between	DC+ – Grnd – DC-
SPD accord. to EN 50539-11	Type 2
SPD accord. to IEC 61643-11	Class II
Maximum PV voltage [U_{CPV}]	≤ 600 V
Protection level [U_P]	≤ 2.5 kV
Protection level at 5 kA [U_P]	≤ 2 kV
Total discharge current (8/20) [I_{total}]	40 kA
Nominal discharge current (8/20) [(DC+/DC-) → PE] [I_n]	12.5 kA
Max. discharge current (8/20) [(DC+/DC-) → PE] [I_{max}]	25 kA
Operating time [t_A]	≤ 25 ns
Temperature range [T_U]	-40 ... +80 °C
Short-circuit resistance (I_{SCPV})	1000 A
Function/failure indication	green / red
Wire range (min.)	1.5 mm² (AWG 14) solid/fine-stranded
Wire range (max.)	35 mm² (AWG 2) stranded / 25 mm² (AWG 4) fine-stranded
Mounted on DIN rail acc. to EN 60715	35 mm
Housing material	Thermoplast, UL 94 V-0
Degree of protection	IP 20
Dimensions	3 TE, DIN 43880 (54 mm)
Remote signaling contacts (FM)	Change-over contact
Switching capacity AC (FM)	250 V/0.5 A
Switching capacity DC (FM)	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Wire range for remote signaling terminals	max. 1.5 mm² (AWG 14) solid/fine-stranded
Approvals	CE cULus SEV

Replacement module for *wietap* GM YPV SCI 600 (FM)

wietap G MOD PV SCI 300

"+" or "–" against internal neutral point

wietap G MOD 275

Internal neutral point against PE

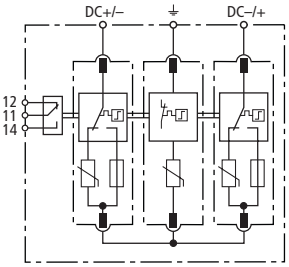
Type	Part No.
wietap **G MOD PV SCI 300**	84.995.2053.0
wietap **G MOD 275**	84.995.2010.0

Surge protection for solar modules

To be used in photovoltaic DC circuits

wietap GM YPV SCI 1000 (FM)

- DC solar arrester for 1000 V string voltage
- No fire hazard during overload due to combined disconnection and short-circuit device
- Safe, arc-free replacement of protection modules due to integrated DC fuse
- High discharge capacity
- Function/failure indication
- ***wietap*** GM YPV SCI 1000 FM with remote signaling contact (FM)



Type	Part No.
wietap **GM YPV SCI 1000**	84.995.2510.0
wietap **GM YPV SCI 1000 FM**	84.995.2515.0
Repl. module "+" or "–" against int. neutral point	84.995.2051.0
Repl. module int. neutral point against ⏚	84.995.2015.0

Technical Data	
Connection between	DC+ – Grnd – DC-
SPD accord. to EN 50539-11	Type 2
SPD accord. to IEC 61643-11	Class II
Maximum PV voltage [U_{CPV}]	≤ 1000 V
Protection level [U_P]	≤ 4 kV
Protection level at 5 kA [U_P]	≤ 3.5 kV
Total discharge current (8/20) [I_{total}]	40 kA
Nominal discharge current (8/20) [(DC+/DC-) → PE] [I_n]	12.5 kA
Max. discharge current (8/20) [(DC+/DC-) → PE] [I_{max}]	25 kA
Operating time [t_A]	≤ 25 ns
Temperature range [T_U]	-40 ... +80 °C
Short-circuit resistance (I_{SCPV})	1000 A
Function/failure indication	green / red
Wire range (min.)	1.5 mm² (AWG 14) solid/fine-stranded
Wire range (max.)	35 mm² (AWG 2) stranded / 25 mm² (AWG 4) fine-stranded
Mounted on DIN rail acc. to EN 60715	35 mm
Housing material	Thermoplast, UL 94 V-0
Degree of protection	IP 20
Dimensions	3 TE, DIN 43880 (54 mm)
Remote signaling contacts (FM)	Change-over contact
Switching capacity AC (FM)	250 V/0.5 A
Switching capacity DC (FM)	250 V/0.1 A; 125 V/0.2 A; 75 V/0.5 A
Wire range for remote signaling terminals	max. 1.5 mm² (AWG 14) solid/fine-stranded
Approvals	CE cULus CSA

Replacement module for *wietap* GM YPV SCI 1000 (FM)

wietap G MOD PV SCI 500

"+" or "–" against internal neutral point

wietap G MOD 440

Internal neutral point against PE

Type	Part No.
wietap **G MOD PV SCI 500**	84.995.2051.0
wietap **G MOD 440**	84.995.2015.0

Surge protection for solar modules

To be used in photovoltaic DC circuits

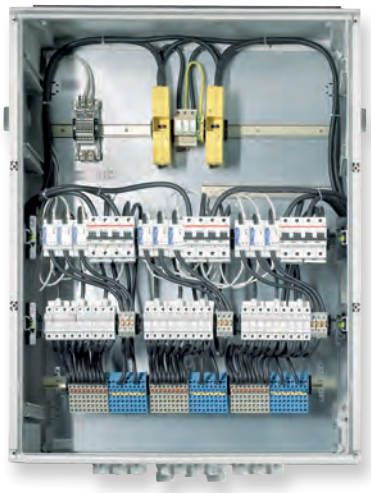
AC arrester on mains for Class 1/2/3

The used arrester type of the AC side is depending on the mains system.

A suitable arrester with the relevant certifications can be found in the previous chapters.

The suitable distribution for your project

AC combiner box



DC combiner box

Housing

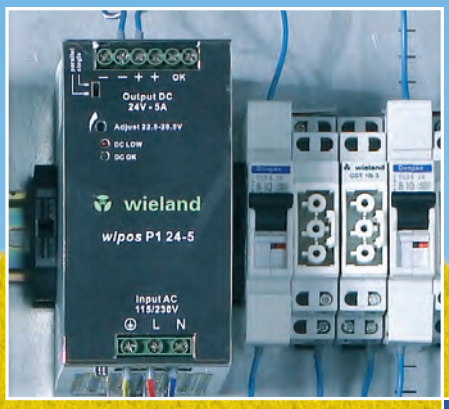
Protection	Class II
UV-resistant	yes
Material	polycarbonate
Cable connection	pluggable or gland

Build in components

- Termination points for solar connectors
- Big termination points for inverter connection
- PE connection
- String fusing
- Reverse current diodes
- String monitoring
- Main switch
- Circuit breaker
- Overvoltage protection and many more

Wieland will support you during the planning phase. High product quality and documentation are a standard for us.

More information and a planning tool can be found in the brochure *gesis* SOLAR, Part No. 0710.1.


OK
Output DC
24V - 5A
DC LOW
DC OK
wieland
wipos P1 24-5
Input AC
115/230V
L N

wipos Power supply units

Pure Power. No-Frills.

Power supplies perform a central function in the control cabinet. Their reliability affects the availability of the machine or the process to a great degree. That is why a robust and proven design is very important for a power supply unit. There are no unnecessary frills with the ***wipos*** family. Instead, these power supply units score with their fundamental features.

wipos **satisfies your requirements in the significant disciplines:**

- **100% power** up to 60°C
- Can be connected in **parallel (from 5 A)** to increase power and redundancy
- **Automatic or wide-input voltage range** for worldwide use
- **High operational reliability** due to long hold-up times >30 ms
- **PFC-technology** for high functional reliability
- **Compensation of voltage drops** via adjustable output voltage
- **Outdoor installation possible** due to wide temperature range
- **Easy to commission** via LED diagnosis
- **Active monitoring** with signalling contact
- **For mounting** on DIN Rail TS 35 / TS 32

wipos P1 Modules

Power supply *wipos* P1 24-1.25 P1 24-2.5

Type	Part No.	Part No.
***wipos* P1 24-1.25**	81.000.6110.0	
***wipos* P1 24-2.5**		81.000.6120.0
Technical Data		
Input voltage	85 – 264 V AC, 90 – 375 V DC	
PFC	not necessary	not necessary
Hold up time	> 30 ms at 230 V	> 30 ms at 230 V
Output voltage	24 – 28 V	24 – 28 V
Output current	1.25 A	2.5 A
Parallel operation	no	no
In series connectable	yes	yes
Temperature range	-40 … +70 °C	-40 … +70 °C
Derating	> 60 °C	> 60 °C
Signal contact	yes	yes
Dimensions (mm) W x H x D	40.5 x 90 x 114	40.5 x 90 x 114
Weight	290 g	360 g
Type of connectors	Screw terminal	Screw terminal
Connector size	0.2 – 2.5 mm² (AWG 24 – 14)	0.2 – 2.5 mm² (AWG 24 – 14)
Efficiency	83 – 86 %	86 – 89 %
Approvals	CE cULus UL 1310 Class 2 Haz. cULus Class I Div.2	CE cULus UL 1310 Class 2 Haz. cULus Class I Div.2

Power supply *wipos* P1 24-3.8 P1 24-5

Type	Part No.	Part No.
***wipos* P1 24-3.8**	81.000.6135.0	
***wipos* P1 24-5**		81.000.6130.0
Technical Data		
Input voltage	115/230 V AC auto, 210 – 375 V DC	
PFC	yes	yes
Hold up time	> 30 ms at 230 V	> 30 ms at 230 V
Output voltage	22.5 – 24,5 V	22.5 – 28.5 V
Output current	3.8 A	5 A
Parallel operation	no	yes (up to 3)
In series connectable	yes	yes
Temperature range	-35 … +70 °C	-35 … +70 °C
Derating	> 60 °C	> 60 °C
Signal contact	yes	yes
Dimensions (mm) W x H x D	64 x 124.5 x 123.6	64 x 124.5 x 123.6
Weight	920 g	920 g
Type of connectors	Screw terminal	Screw terminal
Connector size	0.5 – 6 mm² (AWG 22 – 10)	0.5 – 6 mm² (AWG 22 – 10)
Efficiency	83 – 85 %	84 – 86 %
Approvals	CE cULus UL 1310 Class 2 Haz. cULus Class I Div.2	CE cULus Haz. cULus Class I Div.2

Power supply *wipos* P1 24-10 P1 24-20

Type	Part No.	Part No.
***wipos* P1 24-10**	81.000.6140.0	
***wipos* P1 24-20**		81.000.6150.0
Technical Data		
Input voltage	115/230 V AC auto, 210 – 375 V DC	115/230 V AC auto 120 – 370 V DC
PFC	yes	yes
Hold up time	> 30 ms at 230 V	> 30 ms at 230 V
Output voltage	22.5 – 28.5 V	22.5 – 28.5 V
Output current	10 A	20 A
Parallel operation	yes (up to 3)	yes (up to 3)
In series connectable	yes	yes
Temperature range	-40 … +70 °C	-40 … +70 °C
Derating	> 60 °C	> 55 °C
Signal contact	yes	yes
Dimensions (mm) W x H x D	83.5 x 124.5 x 123.6	175.5 x 124.5 x 123.6
Weight	1300 g	1920 g
Type of connectors	Screw terminal	Screw terminal
Connector size	0.5 – 6 mm² (AWG 22 – 10)	0.5 – 6 mm² (AWG 22 – 10)
Efficiency	87 – 89 %	86 – 89 %
Approvals	CE cULus Haz. cULus Class I Div.2	CE cULus Haz. cULus Class I Div.2

wipos P1 Modules

Power supply *wipos* P1 12-5

Type	Part No.
***wipos* P1 12-5**	81.000.6132.0
Technical Data	
Input voltage	85 – 264 V AC, 90 – 375 V DC
PFC	not necessary
Hold up time	>30 ms at 230 V
Output voltage	12 – 14 V
Output current	5 A
Parallel operation	no
In series connectable	yes
Temperature range	-40 … +70 °C
Derating	>61 °C
Signal contact	no
Dimensions (mm) W x H x D	40.5 x 90 x 114
Weight	340 g
Type of connectors	Screw terminal
Connector size	0.2 – 2.5 mm² (AWG 24 – 14)
Efficiency	86 %
Approvals	CE cULus Haz. cULus Class I Div.2

Power supply *wipos* P1 12-10

Type	Part No.
***wipos* P1 12-10**	81.000.6142.0
Technical Data	
Input voltage	115/230 V AC auto, 210 – 375 V DC
PFC	not necessary
Hold up time	>30 ms at 230 V
Output voltage	11,4 – 14,5 V
Output current	10 A
Parallel operation	yes (up to 3)
In series connectable	yes
Temperature range	-35 … +70 °C
Derating	>61 °C
Signal contact	no
Dimensions (mm) W x H x D	64 x 124.5 x 123.6
Weight	920 g
Type of connectors	Screw terminal
Connector size	0.5 – 6 mm² (AWG 22 – 10)
Efficiency	84 %
Approvals	CE cULus Haz. cULus Class I Div.2

Power supply *wipos* P1 48-5

Type	Part No.
***wipos* P1 48-5**	81.000.6134.0
Technical Data	
Input voltage	115/230 V AC auto, 210 – 375 V DC
PFC	not necessary
Hold up time	>30 ms at 230 V
Output voltage	47 – 56 V
Output current	5 A
Parallel operation	yes (up to 3)
In series connectable	yes
Temperature range	-40 … +70 °C
Derating	>61 °C
Signal contact	no
Dimensions (mm) W x H x D	83.5 x 124.5 x 123.6
Weight	1380 g
Type of connectors	Screw terminal
Connector size	0.5 – 6 mm² solid/fine str. (AWG 22 – 10)
Efficiency	90 %
Approvals	CE cULus Haz. cULus Class I Div.2

wipos P3 Modules

Power supply *wipos* P3 24-5 P3 24-10

Type	Part No.	Part No.
***wipos* P3 24-5**	81.000.6160.0	
***wipos* P3 24-10**		81.000.6170.0
Technical Data		
Input voltage	340 – 575 V AC 480 – 820 V DC	340 – 575 V AC 480 – 820 V DC
PFC	yes (0.55)	yes (0.6)
Hold up time	20 ms	20 ms
Output voltage	22.5 – 28.5 V	22.5 – 28.5 V
Output current	5 A	10 A
Parallel operation	yes (up to 2)	yes (up to 2)
In series connectable	yes	yes
Temperature range	-40 … +70 °C	-40 … +70 °C
Derating	> 60 °C	> 60 °C
Signal contact	yes	yes
Dimensions (mm) W x H x D	75 x 124 x 119	89 x 124 x 119
Weight	800 g	1100 g
Type of connectors	Screw terminal	Screw terminal
Connector size	to 6 mm² (AWG 10)	to 6 mm² (AWG 10)
Efficiency	88 – 90 %	88 – 90 %
Approvals	CE cULus Haz. cULus Class I Div.2	CE cULus Haz. cULus Class I Div.2

Power supply *wipos* P3 24-20

Type	Part No.
***wipos* P3 24-20**	81.000.6180.0
Technical Data	
Input voltage	340 – 575 V AC 480 – 820 V DC
PFC	yes (0.7)
Hold up time	20 ms
Output voltage	22.5 – 28.5 V
Output current	20 A
Parallel operation	yes (up to2)
In series connectable	yes
Temperature range	-30 … +70 °C
Derating	> 60 °C
Signal contact	yes
Dimensions (mm) W x H x D	150 x 124 x 119
Weight	1750 g
Type of connectors	Screw terminal
Connector size	to 6 mm² (AWG 10)
Efficiency	88 – 90 %
Approvals	CE cULus Haz. cULus Class I Div.2

Power supply *wipos* P3 24-40

Type	Part No.
***wipos* P3 24-40**	81.000.6190.0
Technical Data	
Input voltage	340 – 575 V AC 480 – 820 V DC
PFC	yes (0.7)
Hold up time	15 ms
Output voltage	22.5 – 28.5 V
Output current	40 A
Parallel operation	yes (up to 2)
In series connectable	yes
Temperature range	-40 … +70 °C
Derating	>60 °C
Signal contact	yes
Dimensions (mm) W x H x D	276 x 127 x 119
Weight	3200 g
Type of connectors	Screw terminal
Connector size	to 6 mm² (AWG 10)/ output to 16 mm² (AWG 6)
Efficiency	90 – 92 %
Approvals	CE cULus Haz. cULus Class I Div.2

wipos Modules

Redundancy module *wipos* R20

Type	Part No.
***wipos* R20**	81.000.6200.0

Technical Data	
Input voltage	21 – 28 V DC
Input current	20 A (in total)
Output current	20 A
Typical voltage drop	0.5 V
Temperature range	-40 … +70 °C
Signal contact	one each for channel A and B
Signal contact	1 A at 30 V DC
Display/Relay OK	Input voltage 20…30 V (+/-5 %)
Display/Relay fail	Input voltage <20 V or >30 V (+/-5 %)
Dimensions (mm) W x H x D	54 x 90 x 114
Weight	210 g
Type of connectors	Screw terminal
Connector size	0.2 – 2.5 mm² (AWG 24–12)
Connector size for signal contacts	0.2 – 1.5 mm² (AWG 24–14)
Approvals	CE cULus

Fusing module *wipos* FM 4-10

Type	Part No.
***wipos* FM 4-10**	81.000.6210.0

Technical Data	
Input voltage	18 – 30 V
Output current via all 4 fuses	40 A max.
Output voltage	24 V (equivalent to input voltage)
Number of fusing circuits	4
Nominal current of fuse	max. 10 A (check power losses of fuse)
Fuses	4 x G-fuse holder 5 x 20 mm
LED	one per fuse, LED lights whe fuse is broken
Alarm contact	yes
Temperature range	0 … +60 °C
Dimensions (mm) W x H x D	48 x 96 x 68
Mounting type	DIN rail mounting
Weight	110 g
Type of connectors	Screw terminal
Connector size input	10 mm² (AWG 8)
Connector size output	up to 4 mm² (AWG 12) solid,2.5 mm² (AWG 14) fine-stranded
Approvals	CE cULus

Uninterrupted power supply *wipos* UPS 24-30

Type	Part No.
***wipos* UPS 24-30**	81.000.6220.0

Technical Data	
Rated input voltage U_{IN}	24 V DC
Input current	max. 35 A
Rated output voltage U_{OUT}	24 V DC
Output current I_{OUT}	max. 30 A
Output voltage (battery mode)	18.7 – 28.0 V
Output current (battery mode)	max. 30 A
Temperature range	-40 … +70 °C
Derating	> 51 °C
Signal contact mains or battery current	yes
Signal contact discharge battery	yes
Signal contact broken battery	yes
Battery type	Lead-acid or lead-gel
Battery size	2 … 12 Ah / 2 x 12 V
Dimensions (mm) W x H x D	54 x 90 x 114
Weight	370 g
Type of connectors	Screw terminal
Connector size	0.2–4 mm² (AWG 24–12)
Approvals	CE cULus

wipos PB1 Modules

Power supply *wipos* PB1 5-1.5 PB1 5-3

Type	Part No.	Part No.
***wipos* PB1 5-1.5**	81.000.6321.0	
***wipos* PB1 5-3**		81.000.6331.0
Technical Data		
Input voltage	90 – 264 V AC, 120 – 375 V DC	90 – 264 V AC, 120 – 375 V DC
PFC	not necessary	not necessary
Hold up time	> 30 ms at 230 V	> 80 ms at 230 V
Output voltage	5 V	5 – 5.5 V
Output current	1.5 A	3 A
Temperature range	-40 … +70 °C	-40 … +70 °C
Derating	> 61 °C	> 61 °C
LED display	yes	yes
Dimensions W x H x D	18 x 91 x 57	35 x 91 x 57
Installation dimensions	for junction boxes and flat control panels	for junction boxes and flat control panels
Mounting type	DIN rail mounting	DIN rail mounting
Weight	65 g	130 g
Type of connectors	Screw terminal	Screw terminal
Connector size	0.2 – 2.5 mm² (AWG 24 – 14)	0.2 – 2.5 mm² (AWG 24 – 14)
Efficiency	74 %	82 %
Approvals	CE cULus UL 1310 Class 2 Haz. cULus Class I Div.2	CE cULus UL 1310 Class 2

Power supply *wipos* PB1 12-0.83 PB1 24-0.42

Type	Part No.	Part No.
***wipos* PB1 12-0.83**	81.000.6302.0	
***wipos* PB1 24-0.42**		81.000.6300.0
Technical Data		
Input voltage	90 – 264 V AC, 120 – 375 V DC	90 – 264 V AC, 120 – 375 V DC
PFC	not necessary	not necessary
Hold up time	> 30 ms at 230 V	> 30 ms at 230 V
Output voltage	12 V	24 – 28 V
Output current	0.83 A	0.42 A
Temperature range	-40 … +70 °C	-25 … +70 °C
Derating	> 61 °C: 100 %, 70 °C: 75 %	> 60 °C
LED display	yes	yes
Dimensions W x H x D	18 x 91 x 57	18 x 91 x 57
Installation dimensions	for junction boxes and flat control panels	for junction boxes and flat control panels
Mounting type	DIN rail mounting	DIN rail mounting
Weight	65 g	65 g
Type of connectors	Screw terminal	Screw terminal
Connector size	0.2 – 2.5 mm² (AWG 24 – 14)	0.2 – 2.5 mm² (AWG 24 – 14)
Efficiency	78 %	80 %
Approvals	CE cULus Haz. cULus Class I Div.2	CE cULus UL 1310 Class 2 Haz. cULus Class I Div.2

Power supply *wipos* PB1 12-2 PB1 24-1

Type	Part No.	Part No.
***wipos* PB1 12-2**	81.000.6322.0	
***wipos* PB1 24-1**		81.000.6310.0
Technical Data		
Input voltage	90 – 264 V AC, 120 – 375 V DC	90 – 264 V AC, 120 – 375 V DC
PFC	not necessary	not necessary
Hold up time	> 80 ms at 230 V	> 80 ms at 230 V
Output voltage	12 – 14 V	24 – 28 V
Output current	2 A	1 A
Temperature range	-40 … +70 °C	-25 … +70 °C
Derating	> 61 °C: 100 %, 70 °C: 75 %	> 60 °C
LED display	yes	yes
Dimensions W x H x D	35 x 91 x 57	35 x 91 x 57
Installation dimensions	for junction boxes and flat control panels	for junction boxes and flat control panels
Mounting type	DIN rail mounting	DIN rail mounting
Weight	130 g	130 g
Type of connectors	Screw terminal	Screw terminal
Connector size	0.2 – 2.5 mm² (AWG 24 – 14)	0.2 – 2.5 mm² (AWG 24 – 14)
Efficiency	84 %	85 %
Approvals	CE cULus UL 1310 Class 2	CE cULus UL 1310 Class 2

wipos PB1 Modules

Power supply *wipos* PB1 12-2.75 PB1 24-1.5

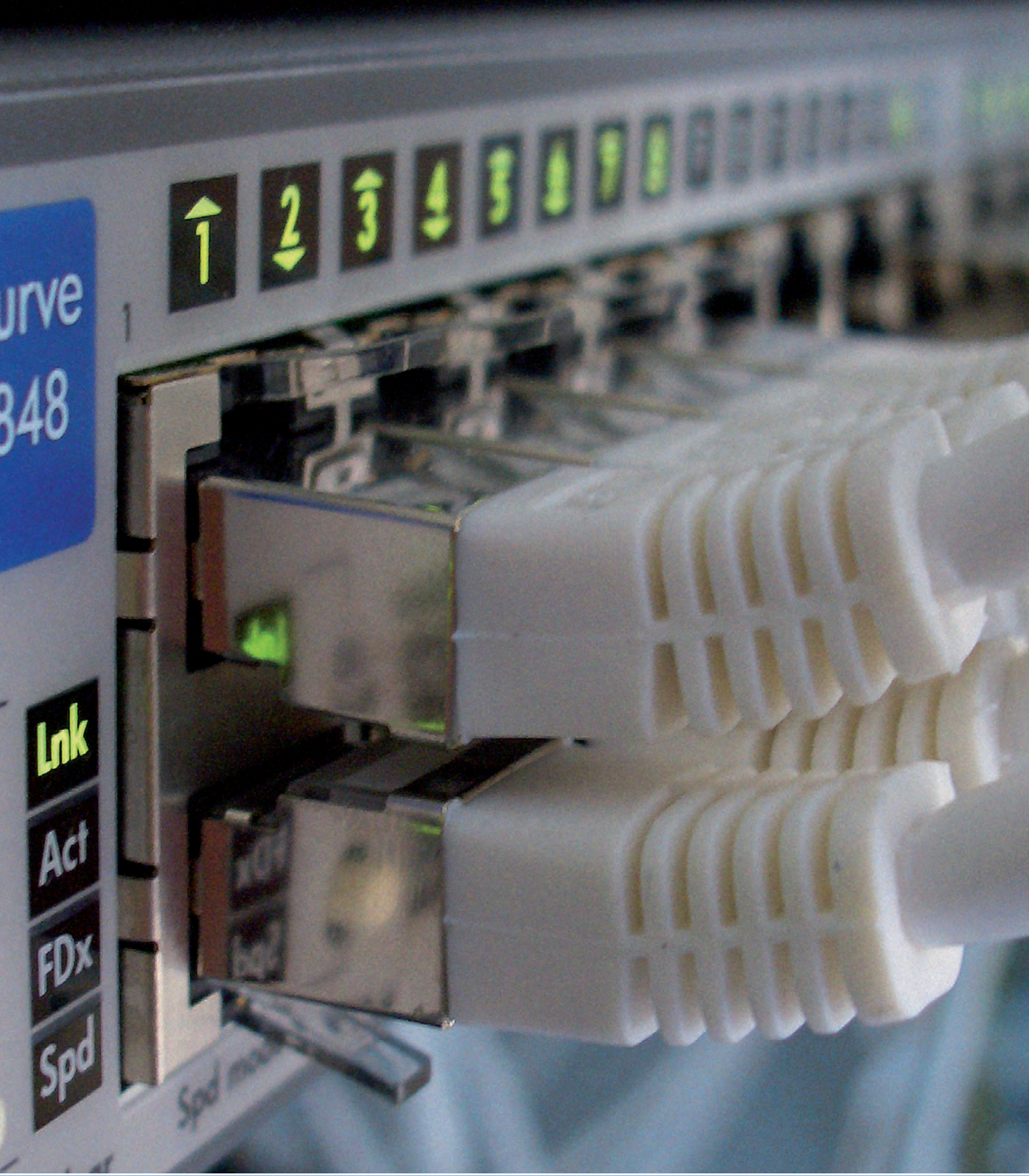
Type	Part No.	Part No.
***wipos* PB1 12-2.75**	81.000.6332.0	
***wipos* PB1 24-1.5**		81.000.6320.0
Technical Data		
Input voltage	90 – 264 V AC, 120 – 375 V DC	90 – 264 V AC, 120 – 375 V DC
PFC	not necessary	not necessary
Hold up time	> 60 ms at 230 V	> 100 ms at 230 V
Output voltage	12 – 14 V	24 – 28 V
Output current	2.75 A	1.5 A
Temperature range	-40 … +70 °C	-25 … +70 °C
Derating	> 56 °C	> 56 °C
LED display	yes	yes
Dimensions (mm) W x H x D	53 x 91 x 57	53 x 91 x 57
Installation dimensions	for junction boxes and flat control panels	for junction boxes and flat control panels
Mounting type	DIN rail mounting	DIN rail mounting
Weight	250 g	190 g
Type of connectors	Screw terminal	Screw terminal
Connector size	0.2 – 2.5 mm² (AWG 24–14)	0.2 – 2.5 mm² (AWG 24–14)
Efficiency	84 %	84 %
Approvals	CE cULus UL1310 Class 2	CE cULus UL1310 Class 2

Power supply *wipos* PB1 12-4.5 PB1 24-2.5

Type	Part No.	Part No.
***wipos* PB1 12-4.5**	81.000.6342.0	
***wipos* PB1 24-2.5**		81.000.6330.0
Technical Data		
Input voltage	90 – 264 V AC, 120 – 375 V DC	90 – 264 V AC, 120 – 375 V DC
PFC	not necessary	not necessary
Hold up time	> 60 ms at 230 V	> 60 ms at 230 V
Output voltage	12 – 14 V	24 – 28 V
Output current	4,5 A	2.5 A
Temperature range	-40 … +70 °C	-25 … +70 °C
Derating	> 56 °C	> 60 °C
LED display	ja	yes
Dimensions (mm) W x H x D	71 x 91 x 57	71 x 91 x 57
Installation dimensions	for junction boxes and flat control panels	for junction boxes and flat control panels
Mounting type	DIN rail mounting	DIN rail mounting and screw connection
Weight	250 g	250 g
Type of connectors	Screw terminal	Screw terminal
Connector size	0.2 – 2.5 mm² (AWG 24–14)	0.2 – 2.5 mm² (AWG 24–14)
Efficiency	84 %	86 %
Approvals	CE cULus UL1310 Class 2 Haz. cULus Class I Div.2	CE cULus UL1310 Class 2 Haz. cULus Class I Div.2

Power supply *wipos* PB1 24-4.2

Type	Part No.
***wipos* PB1 24-4.2**	81.000.6340.0
Technical Data	
Input voltage	90 – 264 V AC, 120 – 375 V DC
PFC	not necessary
Hold up time	> 60 ms at 230 V
Output voltage	24 – 28 V
Output current	4.2 A
Temperature range	-40 … +70 °C
Derating	> 60 ° C
LED display	yes
Dimensions (mm) W x H x D	90 x 91 x 57
Installation dimensions	for junction boxes and flat control panels
Mounting type	DIN rail mounting and screw connection
Weight	380 g
Type of connectors	Screw terminal
Connector size	0.2 – 2.5 mm² (AWG 24–14)
Efficiency	89 %
Approvals	CE cULus Haz. cULus Class I Div.2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Lnk
Act
FDx
Spd

Industrial Ethernet switches

Safe and fast communication for your process.

Ethernet connections have become part of many areas of life. This global standard is also making inroads into automation technology. Ethernet switches have become quite common for safe networking and coupling between machines, or inside the system. They manage the data flow in an effective and target-oriented manner. The devices are designed to be very robust and are optimally suited to harsh industrial environments.

Benefits:

- Redundant power supply
- Full compatibility according to IEEE 802.3, including autocrossing, autonegotiation, autosensing, auto-polarity
- Complete diagnostics display via various LEDs
- Compact design
- DIN rail mounting or screw connection
- Robust designs
- High degree of protection (IP40)

Ethernet Switches (Fast Ethernet)

wienet UMS 6-L

Type	Part No.
***wienet* UMS 6-L**	83.040.0000.1
Technical Data	
Number of ports	6 RJ45 ports
Port types	6 x Ethernet and Fast Ethernet (10/100 Mbit/s)
Store and forward switching mode	yes
Autocrossing	yes
Autonegotiation	yes
Autosensing	yes
Autopolarity	yes
Full IEEE 802.3 compatibility	yes
Line, star and network topologies are possible	yes
Operating voltage	9 … 30 V DC
Redundant power supply	2 infeeds
Diagnostic LEDs (power / link status / data / data rate)	yes / yes / yes / yes
Operating temperature	0 … +60 °C
Dimensions (mm) W x H x D	45 x 90 x 80
Housing	Thermoset
Mounting	DIN rail and screw mounting
Type of connectors	Screw terminal, pluggable
Connector size	up to 1.5 mm² (AWG 16)
Weight	160 g
Degree of protection	IP 40
Approvals	CE cULus FCC

wienet UMS 6

Type	Part No.
***wienet* UMS 6**	83.040.0000.0
Technical Data	
Number of ports	6 RJ45 ports
Port types	6 x Ethernet and Fast Ethernet (10/100 Mbit/s)
Store and forward switching mode	yes
Autocrossing	yes
Autonegotiation	yes
Autosensing	yes
Autopolarity	yes
Full IEEE 802.3 compatibility	yes
Line, star and network topologies are possible	yes
Operating voltage	9 … 30 V DC
Redundant power supply	2 infeeds
Diagnostic LEDs (power / link status / data / data rate)	yes / yes / yes / yes
Operating temperature	0 … +60 °C
Dimensions (mm) W x H x D	45.3 x 90 x 90.5
Housing	Aluminum extrusion
Mounting	DIN rail and screw mounting
Type of connectors	Screw terminal, pluggable
Connector size	up to 1.5 mm² (AWG 16)
Weight	250 g
Degree of protection	IP 40
Approvals	CE cULus FCC

Ethernet Switches (Fast Ethernet)

wienet **UMS 8**

Type	Part No.
wienet **UMS 8**	83.040.0001.0
Technical Data	
Number of ports	8 RJ45-Ports
Port types	8 x Ethernet and Fast-Ethernet (10/100 Mbit/s)
Store and forward switching mode	yes
Autocrossing	yes
Autonegotiation	yes
Autosensing	yes
Autopolarity	yes
Full IEEE 802.3 compatibility	yes
Line, star and network topologies are possible	yes
Operating voltage	9 … 30 V DC
Redundant power supply	2 infeeds
Diagnostic LEDs (power / link status / data / data rate)	yes / yes / yes / yes
Operating temperature	-10 … +70 °C
Dimensions (mm) W x H x D	45.3 x 90 x 90.5
Housing	Aluminum extrusion
Mounting	DIN rail and screw mounting
Type of connectors	Screw terminal, pluggable
Connector size	up to 1.5 mm² (AWG 16)
Weight	270 g
Degree of protection	IP 40
Approvals	CE cULus FCC

Ethernet Switches (Giga Ethernet)

wienet UMS 8-G

Type	Part No.
***wienet* UMS 8-G**	83.040.0106.0
Technical Data	
Number of ports	8 x RJ45
Port types	6 x Giga-Ethernet (10/100/1000 Mbit/s)
Store and forward switching mode	yes
Autocrossing	yes
Autonegotiation	yes
Autosensing	yes
Autopolarity	yes
Full IEEE 802.3 compatibility	yes
Line, star and network topologies are possible	yes
Operating voltage	9 … 48 V DC
Redundant power supply	2 infeeds
Diagnostic LEDs (power / link status / data / data rate)	yes / yes / yes / yes
Operating temperature	-10 … +70 °C
Dimensions (mm) W x H x D	45.3 x 90 x 90.5
Housing	Metal
Mounting	DIN rail and screw mounting
Type of connectors	Screw terminal, pluggable
Connector size	0.2 – 1.5 mm² (AWG 24–16)
Weight	255 g
Degree of protection	IP 50
Approvals	CE cULus FCC

wienet UMS 8-2G

Type	Part No.
***wienet* UMS 8-2G**	83.040.0103.0
Technical Data	
Number of ports	10 RJ45-Ports
Port types	8 x Ethernet and Fast-Ethernet (10/100 Mbit/s) 2 x Giga-Ethernet (10/100/1000 Mbit/s)
Store and forward switching mode	yes
Autocrossing	yes
Autonegotiation	yes
Autosensing	yes
Autopolarity	yes
Full IEEE 802.3 compatibility	yes
Line, star and network topologies are possible	yes
Operating voltage	12 … 48 V DC
Redundant power supply	2 infeeds
Diagnostic LEDs (power / link status / data / data rate)	yes / yes / yes / yes
Operating temperature	-40 … +70 °C
Dimensions (mm) W x H x D	54 x 146 x 130.5
Housing	Aluminum extrusion
Mounting	DIN rail and screw mounting
Type of connectors	Screw terminal, pluggable
Connector size	up to 1.5 mm² (AWG 16)
Weight	1000 g
Degree of protection	IP 40
Approvals	CE cULus FCC

Ethernet Switches (with optical ports)

wienet UMS 4-1FM

Type	Part No.
***wienet* UMS 4-1FM**	83.040.0002.0
Technical Data	
Number of ports	4 x RJ45, 1 x ST (optical multi mode)
Port types	10/100BaseT(X), 100BaseFX
Store and forward switching mode	yes
Autocrossing	yes
Autonegotiation	yes
Autosensing	yes
Autopolarity	yes
Full IEEE 802.3 compatibility	yes
Line, star and network topologies are possible	yes
Operating voltage	9 … 30 V DC
Redundant power supply	2 infeeds
Diagnostic LEDs (power / link status / data / data rate)	yes / yes / yes / yes
Operating temperature	-10 … +70 °C
Dimensions (mm) W x H x D	45.3 x 90 x 90.5
Housing	Metal
Mounting	DIN rail and screw mounting
Type of connectors	Screw terminal, pluggable
Connector size	0.2 – 1.5 mm² (AWG 24–16)
Weight	260 g
Degree of protection	IP 50
Approvals	CE cULus FCC

wienet UMS 4-1FS

Type	Part No.
***wienet* UMS 4-1FS**	83.040.0003.0
Technical Data	
Number of ports	4 x RJ45, 1 x SC (optical single mode)
Port types	10/100BaseT(X), 100BaseFX
Store and forward switching mode	yes
Autocrossing	yes
Autonegotiation	yes
Autosensing	yes
Autopolarity	yes
Full IEEE 802.3 compatibility	yes
Line, star and network topologies are possible	yes
Operating voltage	9 … 30 V DC
Redundant power supply	2 infeeds
Diagnostic LEDs (power / link status / data / data rate)	yes / yes / yes / yes
Operating temperature	-10 … +70 °C
Dimensions (mm) W x H x D	45.3 x 90 x 90.5
Housing	Metal
Mounting	DIN rail and screw mounting
Type of connectors	Screw terminal, pluggable
Connector size	0.2 – 1.5 mm² (AWG 24–16)
Weight	260 g
Degree of protection	IP 50
Approvals	CE cULus FCC

Applications

- Energy systems
  - Wind turbines
  - Solar farms
  - Biogas cogeneration systems
  - Heat pumps, ...
- Water and waste water management
- System monitoring in machine building
  - Washing machines
  - Packaging machines
  - Compressors, ...
- External surveillance camera
- Vending
  Telemetry online sales or ticket machines
- Smart metering
- Mobile fleet management

wienet VPN Industrial Router – unlimited M2M communication

Functionality which convinces

Wieland's ***wienet*** VPN industrial routers ensure increased efficiency and data security. Whether it is about the control of machines, monitoring of production lines or the co-ordination of all production areas a permanent communication between devices is needed to complete such a complex task. Access to stored data using wireless networks is not always possible or safe. Now Wieland develops with its modern router technology new fields of applications. For example control commands, level indicators or video signals can now be transmitted. At download speeds of up to 100 Mbit/s and upload speeds of up to 50 Mbits/s (depending on the network operator) the ***wienet*** VPN industrial router is sure to cover the available connectivity options of GPRS up to LTE. With automatic login ***wienet*** VPN industrial router will always access the fastest available connection.

Each router has its own IP address and can be configured through the integrated web interface.
It supports services such as DHCP, NAT and DynDNS. The routers communicate directly or via the control panel to open a secure VPN connection. The establishment of an IPSec encrypted tunnel is alternatively possible.
wienet VPN routers are ideal components for industrial use in conjunction with VPN-service portals, such as Wie-Service24.
With the arrangement of the ports on the front-panel and a standard USB port, the ***wienet*** VPN industrial router are extremely user friendly. A clear statistic of mobile connections is used for better control. Optionally, the devices are available with a second SIM card slot, additional I/O, RS-232, RS-422/RS-485, M-Bus, second Ethernet interface, WiFi module or integrated 3 port switch.

Advantages

- Expanded operating temperature range of -30 °C to 70 °C
- DIN top hat rail assembly
- An extremely robust aluminium housing

Industrial Mobile Router – GSM/GPRS/EDGE

wienet EDGE ER75iv2 SL „Basic“

- 1x SIM-card-slot
- 1x RJ45 port extension
- 1x USB

wienet EDGE ER75iv2f SL „Full“

- 2x SIM-card-slot
- 2x RJ45 port extension
- 1x USB

Supply scope:

VPN Industrial router
Magnetic foot antenna with 2.5 m cable
Power supply unit
RJ45 patch cable
Variable top hat rail adapter
USB stick

Type	Port 1	Port 2	Part No.
***wienet* EDGE basic version**			
ER75iv2 SL	-	-	**83.041.0000.1**
ER75iv2 SL RS232	RS-232	-	83.041.0001.1
ER75iv2 SL RS485/422	RS-485/422	-	83.041.0002.1
ER75iv2 SL MBUS	M-Bus	-	83.041.0003.1
ER75iv2 SL CNT	4DI, 2DO, 2AI	-	83.041.0004.1
ER75iv2 SL ETH	Ethernet	-	**83.041.0005.1**
***wienet* EDGE full version**			
ER75iv2f SL	-	-	83.041.0100.1
ER75iv2f SL RS232	RS-232	-	83.041.0101.1
ER75iv2f SL RS485/422	RS-485/422	-	83.041.0102.1
ER75iv2f SL MBUS	M-Bus	-	83.041.0103.1
ER75iv2f SL IO	IO	-	83.041.0104.1
ER75iv2f SL ETH	ETH	-	83.041.0105.1
ER75iv2f SL WIFI	-	WiFi/WLAN	83.041.0160.1
ER75iv2f SL SD	-	SD-FLASH	83.041.0170.1
ER75iv2f SL RS232 RS232	RS-232	RS-232	83.041.0111.1
ER75iv2f SL RS485 RS232	RS-485/422	RS-232	83.041.0112.1
ER75iv2f SL MBUS RS232	M-Bus	RS-232	83.041.0113.1
ER75iv2f SL CNT RS232	IO	RS-232	83.041.0114.1
ER75iv2f SL ETH RS232	ETH	RS-232	83.041.0115.1
ER75iv2f SL RS485 RS485	RS-485/422	RS-485/422	83.041.0122.1
ER75iv2f SL MBUS RS485	M-Bus	RS-485/422	83.041.0123.1
ER75iv2f SL CNT RS485	IO	RS-485/422	83.041.0124.1
ER75iv2f SL ETH RS485	ETH	RS-485/422	83.041.0125.1
ER75iv2f SL RS232 WIFI	RS-232	WiFi/WLAN	83.041.0161.1
ER75iv2f SL RS485 WIFI	RS-485/422	WiFi/WLAN	83.041.0162.1
E ER75iv2f SL MBUS WIFI	M-Bus	WiFi/WLAN	83.041.0163.1
ER75iv2f SL CNT WIFI	IO	WiFi/WLAN	83.041.0164.1
ER75iv2f SL ETH WIFI	ETH	WiFi/WLAN	83.041.0165.1
ER75iv2f SL 3P	3-port Switch	3-port Switch	**83.041.0199.1**
			preferred types

Technical Data	
Transmission	GSM/GPRS/EDGE (Class 10)
Frequency bands	850/900/1800/1900 MHz
SIM-card-slots	1
RJ45-extension-ports	1
Interfaces	Ethernet 10/100 Mbit/s; USB 2.0 Type A (Host); 1x Digital In / 1x Digital Out
Max. Download/Upload	236 Kbit/s / 118.4 Kbit/s
VPN-Client for encrypted connection to the control center	IPSec Client/Server; OpenVPN Client/Server; L2TP; PPTP
Mounting	DIN-rail or table
Operating voltage	10 - 30 V DC
Operating temperature	-30 … +60°C
Antenna	external GSM-antenna (SMA - 50 Ohm)
Dimensions (mm) WxHxD	42x114x81
Weight	280 g
Approvals	CE
Norms	EN 301 511, v 9.0.2; EN 301 908-1&2, v 3.2.1; ETSI EN 301 489-1 V1.8.1; EN 60950-1:06 ed. 2 + A11:09

Functions
Support of NAT/PAT and X.509
Firewall (SPI)
VPN: OpenVPN, IPsec, L2TP, GRE
Easy web interface, DHCP, DynDNS, VRRP; Dial-in
Router-control by SMS
Comprehensive mobile statistic options
Data volume-/roaming-control by SMS
Status information by SNMP and SMS
Status by LED
FTP server
Linux based operating system: ability to integrate their own applications

Industrial Mobile Router – UMTS/HSDPA/HSUPA/HSPA+

wienet HSPA+ UR5iv2 SL „Basic“

- 1x SIM-card-slot
- 1x RJ45 port extension
- 1x USB

wienet HSPA+ UR5iv2f SL Compact

- 2x SIM-card-slot
- 2x Ethernet (LAN-to-LAN or Switch-Bridge)
- Best price-performance ratio
- No USB interface

wienet HSPA+ UR5iv2f SL „Full“

- 2x SIM-card-slot
- 2x RJ45 port extension
- GPS (not in combination with WiFi)
- 1x USB

Supply scope:

VPN Industrial router
Magnetic foot antenna with 2.5 m cable
Power supply unit
RJ45 patch cable
Variable top hat rail adapter
USB stick

Type	Port 1	Port 2	Part No.
***wienet* HSPA+ basic version**			
UR5iv2 SL	-	-	**83.041.0040.1**
UR5iv2 SL RS232	RS-232		83.041.0041.1
UR5iv2 SL RS485/422	RS-485/422		83.041.0042.1
UR5iv2 SL MBUS	M-Bus		83.041.0043.1
UR5iv2 SL CNT	4DI, 2DO, 2AI		**83.041.0044.1**
UR5iv2 SL ETH	Ethernet		**83.041.0045.1**
***wienet* HSPA+ compact version**			
UR5iv2f SL Compact	ETH	-	**83.041.0305.1**
***wienet* HSPA+ full version**			
UR5iv2f SL	-	-	83.041.0400.1
UR5iv2f SL	-	-	83.041.0400.2 [1]
UR5iv2f SL RS232	RS-232	-	83.041.0401.1
UR5iv2f SL RS232	RS-232	-	83.041.0401.2 [1]
UR5iv2f SL RS485/422	RS-485/422	-	83.041.0402.1
UR5iv2f SL MBUS	M-Bus	-	83.041.0403.1
UR5iv2f SL IO	IO	-	83.041.0404.1
UR5iv2f SL IO	IO	-	83.041.0404.2 [1]
UR5iv2f SL ETH	ETH	-	83.041.0405.1
UR5iv2f SL ETH	ETH	-	83.041.0405.2 [1]
UR5iv2f SL WIFI	-	WiFi/WLAN	83.041.0460.1
UR5iv2f SL SD	-	SD-FLASH	83.041.0470.1
UR5iv2f SL RS232 RS232	RS-232	RS-232	83.041.0411.1
UR5iv2f SL RS485 RS232	RS-485/422	RS-232	83.041.0412.1
UR5iv2f SL MBUS RS232	M-Bus	RS-232	83.041.0413.1
UR5iv2f SL CNT RS232	IO	RS-232	83.041.0414.1
UR5iv2f SL ETH RS232	ETH	RS-232	**83.041.0415.1**
UR5iv2f SL ETH RS232	ETH	RS-232	83.041.0415.2 [1]
UR5iv2f SL RS485 RS485	RS-485/422	RS-485/422	83.041.0422.1
UR5iv2f SL MBUS RS485	M-Bus	RS-485/422	83.041.0423.1
UR5iv2f SL CNT RS485	IO	RS-485/422	83.041.0424.1
UR5iv2f SL ETH RS485	ETH	RS-485/422	**83.041.0425.1**
UR5iv2f SL ETH RS485	ETH	RS-485/422	83.041.0425.2 [1]
UR5iv2f SL RS232 WIFI	RS-232	WiFi/WLAN	83.041.0461.1
UR5iv2f SL RS485 WIFI	RS-485/422	WiFi/WLAN	83.041.0462.1
UR5iv2f SL MBUS WIFI	M-Bus	WiFi/WLAN	83.041.0463.1
UR5iv2f SL CNT WIFI	IO	WiFi/WLAN	83.041.0464.1
UR5iv2f SL ETH WIFI	ETH	WiFi/WLAN	**83.041.0465.1**
UR5iv2f SL ETH WIFI	ETH	WiFi/WLAN	83.041.0465.2 [1]
UR5iv2f SL 3P	3-port Switch	3-port Switch	**83.041.0499.1**
UR5iv2f SL 3P	3-port Switch	3-port Switch	83.041.0499.2 [1]

[1] US/CAN version (expected from 2014)

preferred types

Technical Data	
Transmission	GSM/GPRS/EDGE/UMTS/HSDPA/HSPA+
Frequency bands	Quad-band UMTS (WCDMA): 850/900/1900/2100 MHz; Quad-band GSM/GPRS/EDGE: 850/900/1800/1900 MHz
SIM-card-slots	1
RJ45-extension-ports	1
Interfaces	Ethernet 10/100 Mbit/s; USB 2.0 Type A (Host); 1x Digital In / 1x Digital Out
Max. Download/Upload	14.4 Mbit/s / 5.7 Mbit/s
VPN-Client for encrypted connection to the control center	IPSec Client/Server; OpenVPN Client/Server; L2TP; PPTP
Mounting	DIN-rail or table
Operating voltage	10 - 30 V DC
Operating temperature	-30 … +60°C
Antenna	external GSM-antenna (SMA - 50 Ohm)
Dimensions (mm) WxHxD	42x114x81
Weight	280 g
Approvals	CE
Norms	EN 301 511, v 9.0.2; EN 301 908-1&2, v 3.2.1; ETSI EN 301 489-1 V1.8.1; EN 60950-1:06 ed. 2 + A11:09

Functions
Support of NAT/PAT and X.509
Firewall (SPI)
Easy web interface, DHCP, DynDNS, VRRP; Dial-in
Router-control by SMS, alerting via SMS and email
Comprehensive mobile statistic options
Data volume-/roaming-control by SMS
Status information by SNMP and SMS
Status by LED
FTP server
Integrated GPS receiver (full version only, not in combination with WiFi)
Linux based operating system: ability to integrate their own applications

Industrial Mobile Router – LTE 4G

wienet LTE LR77 v2 SL „Basic“

- 1x SIM-card-slot
- 1x RJ45 port extension
- 1x USB

wienet LTE LR77 v2f SL „Full“

- 2x SIM-card-slot
- 2x RJ45 port extension
- GPS (not in combination with WiFi)
- 1x USB

Supply scope:

VPN Industrial router
Magnetic foot antenna with 2.5 m cable
Power supply unit
RJ45 patch cable
Variable top hat rail adapter
USB stick

Type	Port 1	Port 2	Part No.
***wienet* LTE basic version**			
LR77v2 SL	-	-	**83.041.0050.1**
LR77v2 SL RS232	RS-232	-	83.041.0051.1
LR77v2 SL RS485/422	RS-485/422	-	83.041.0052.1
LR77v2 SL MBUS	M-Bus	-	83.041.0053.1
LR77v2 SL CNT	4DI, 2DO, 2AI	-	**83.041.0054.1**
LR77v2 SL ETH	Ethernet	-	**83.041.0055.1**
***wienet* LTE full version**			
LR77v2f SL	-	-	83.041.0500.1
LR77v2f SL RS232	RS-232	-	83.041.0501.1
LR77v2f SL RS485/422	RS-485/422	-	83.041.0502.1
LR77v2f SL MBUS	M-Bus	-	83.041.0503.1
LR77v2f SL IO	IO	-	83.041.0504.1
LR77v2f SL ETH	ETH	-	83.041.0505.1
LR77v2f SL WIFI	-	WiFi/WLAN	83.041.0560.1
LR77v2f SL SD	-	SD-FLASH	83.041.0570.1
LR77v2f SL RS232 RS232	RS-232	RS-232	83.041.0511.1
LR77v2f SL RS485 RS232	RS-485/422	RS-232	83.041.0512.1
LR77v2f SL MBUS RS232	M-Bus	RS-232	83.041.0513.1
LR77v2f SL CNT RS232	IO	RS-232	83.041.0514.1
LR77v2f SL ETH RS232	ETH	RS-232	**83.041.0515.1**
LR77v2f SL RS485 RS485	RS-485/422	RS-485/422	83.041.0522.1
LR77v2f SL MBUS RS485	M-Bus	RS-485/422	83.041.0523.1
LR77v2f SL CNT RS485	IO	RS-485/422	83.041.0524.1
LR77v2f SL ETH RS485	ETH	RS-485/422	**83.041.0525.1**
LR77v2f SL RS232 WIFI	RS-232	WiFi/WLAN	83.041.0561.1
LR77v2f SL RS485 WIFI	RS-485/422	WiFi/WLAN	83.041.0562.1
LR77v2f SL MBUS WIFI	M-Bus	WiFi/WLAN	83.041.0563.1
LR77v2f SL CNT WIFI	IO	WiFi/WLAN	83.041.0564.1
LR77v2f SL ETH WIFI	ETH	WiFi/WLAN	**83.041.0565.1**
LR77v2f SL 3P	3-port Switch	3-port Switch	**83.041.0599.1**

preferred types

Technical Data	
Transmission	GSM/GPRS/EDGE/UMTS/HSDPA/HSPA+/LTE
Frequency bands	LTE: 800/900/1800/2100/2600 MHz; UMTS: 900/2100 MHz; GSM/GPRS/EDGE: 900/1800/1900 MHz
SIM-card-slots	1
RJ45-extension-ports	1
Interfaces	Ethernet 10/100 Mbit/s; USB 2.0 Type A (Host); 1x Digital In / 1x Digital Out
Max. Download/Upload	100 Mbit/s / 50 Mbit/s
VPN-Client for encrypted connection to the control center	IPSec Client/Server; OpenVPN Client/Server; L2TP; PPTP
Mounting	DIN-rail or table
Operating voltage	10 - 30 V DC
Operating temperature	-30 … +60°C
Antenna	external GSM-antenna (SMA - 50 Ohm)
Dimensions (mm) WxHxD	42x114x81
Weight	280 g
Approvals	CE
Norms	EN 301 511, v 9.0.2; EN 301 908-1&2, v 3.2.1; ETSI EN 301 489-1 V1.8.1; EN 60950-1:06 ed. 2 + A11:09

Functions
Support of NAT/PAT and X.509
Firewall (SPI)
Easy web interface, DHCP, DynDNS, VRRP; Dial-in
Router-control by SMS
Comprehensive mobile statistic options
Data volume-/roaming-control by SMS
Status information by SNMP and SMS
Status by LED
FTP server
Integrated GPS receiver (full version only, not in combination with WiFi)
Linux based operating system: ability to integrate their own applications

Industrial Router – LAN-to-LAN

wienet LAN XRi v2...

Supply scope:

VPN Industrial router
Power supply unit
2x RJ45 patch cable
Variable top hat rail adapter
USB stick

Type	Port 1	Port 2	Part No.
***wienet* LAN-to-LAN-Router**			
XR5iv2 ETH	Ethernet	-	**83.041.0605.1**
XR5iv2f SL ETH RS232	Ethernet	RS-232	83.041.0615.1
XR5iv2f SL ETH RS485	Ethernet	RS-485	83.041.0625.1
XR5iv2f SL ETH MBUS	Ethernet	M-Bus	83.041.0635.1
XR5iv2f SL WIFI	-	WiFi/WLAN	83.041.0660.1
XR5iv2f SL RS232 WIFI	RS-232	WiFi/WLAN	83.041.0661.1
XR5iv2f SL RS485 WIFI	RS-485	WiFi/WLAN	83.041.0662.1
XR5iv2f SL MBUS WIFI	M-Bus	WiFi/WLAN	83.041.0663.1
XR5iv2f SL IO WIFI	4DI, 2DO, 2AI	WiFi/WLAN	83.041.0664.1
XR5iv2f SL ETH WIFI	Ethernet	WiFi/WLAN	**83.041.0665.1**
XR5iv2f SL ETH SD	Ethernet	SD-FLASH	83.041.0675.1

preferred types

Technical Data	
Transmission	LAN-to-LAN, WiFi/WLAN
RJ45-extension-ports	1 (basic version), 2 (full version)
Interfaces	Ethernet 10/100 Mbit/s; USB 2.0 Type A (Host); 1x Digital In / 1x Digital Out
Max. Download/Upload	100 Mbit/s / 50 Mbit/s
VPN-Client for encrypted connection to the control center	IPSec Client/Server; OpenVPN Client/Server; L2TP; PPTP
Mounting	DIN-rail or table
Operating voltage	10 - 30 V DC
Operating temperature	-30 … +60°C
Antenna	external GSM-antenna (SMA - 50 Ohm)
Dimensions (mm) WxHxD	42x114x81
Weight	280 g
Approvals	CE
Norms	ETSI EN 301 489-1 V1.8.1; EN 60950-1:06 ed. 2 + A11:09 + A1:10

Functions
Support of NAT/PAT and X.509
Firewall (SPI)
Easy web interface, DHCP, DynDNS, VRRP; Dial-in
PPPoE - DSL-Modem Support
Status by LED
SNMP - Integration to the network management
FTP server
Linux based operating system: ability to integrate their own applications

Accessories, VPN-Server „Wie-Service24“

Omnidirectional rod antenna *wienet* GXS606

Type	Part No.
***wienet* GXS606**	83.041.0210.0
Technical Data	
Frequency bandwidth	GSM, GPRS, EDGE, UMTS
Connector	FME/F
Gain	2.2 dBi
Length of cable	5 m
Length of rod (mm)	approx. 300

Top flat antenna *wienet* GXR623

Type	Part No.
***wienet* GXR623**	83.041.0200.0
Technical Data	
Frequency bandwidth	GSM, GPRS, EDGE, UMTS
Connector	FME/F
Gain	2.2 dBi
Length of cable	2.5 m
Dimensions (mm)	approx. 75 x 80 x 13

Programming adapter MPI-ETH ADAPTER ACCON-NETLINK-PRO

Type	Part No.
MPI-ETH ADAPTER ACCON-NETLINK-PRO	F0.000.0031.8
Technical Data	
Supported operating systems	no restriction
Hardware requirements	Ethernet interface and TCP/IP protocol
Supported SPS	S7-200, S7-300, S7-400
Weight in kg	approx. 0.25
Protection type	IP 20
Operating voltage	24 V DC ± 25%
External power supply	yes
Max. current consumption	150 mA
Electrically isolated	yes
Operating temperature	0 °C to 60 °C
Storage/transport temperature	-20 °C to 90 °C
Admissible relative air humidity	5 % to 85 % at 30 °C (non-condensing)
Connection cable to the PLC	permanently mounted, active (no stub line, 1.2 m)
Connection cable to PC/router	patch cable (Ethernet, straight, 3 m)
Supported bus profiles	MPI, DP, standard, universal (DP/FMS), user-defined with automatic detection
Supported transmission rates from bus connection to PLC	9.6 Kbit/s to 12 Mbit/s with automatic detection
Supported transmission rates, Ethernet	10/100 Mbit/s with automatic detection
Max. number of connections on TCP/IP	16

Additional VPN channels to VPN-server Wie-Service24

- Rent of additional VPN-tunnels to VPN-Server of Wieland Electric
- High availability of VPN connections
- Immediately usable
- Client access on the server

Type		Part No.
***wienet* WIE-SERVICE24-EINZEL-R**	VPN-Router-Client	ZD.000.0011.0
***wienet* WIE-SERVICE24-EINZEL-PC**	VPN-PC-Client	ZD.000.0011.1
Properties		
Security by VPN		
Automatic generation of router configurations		
Only outgoing connections to the VPN server Wie-Service24		
No changes in the local network needed		
Connection complete networks without additional route settings		
Contract data		
Calculation	12 months in advance	
Termination	any time at the end of a month	
Administration	Wieland Electric	
Server hardware	Internet high-performance computing center	

VPN server „Wie-Service24“

Compact VPN server „Smartservice24“

- VPN server portal is customer installation
- Administration at the customer
- High-availability VPN connections
- Adaptable layout

Type	Installation	Part No.
***wienet* SMARTSERVICE24**	Pre-installed on compact LINUX-PC	ZD.000.0017.0

Features	
The "Smartservice24" VPN server is the VPN portal, installed on a small, energy-saving hardware system, hence immediately operational and functional.	
Networks	PPTP (Smartphone access); SSL; direct http:// or https:// WEB access to all web servers in the downstream network
VPN tunnel	maximum of 100 VPN connections; secure data encryption with OpenVPN (incl. X.509 certificates)
Configuration and diagnostics	configuration via web interface; network configuration for individual subscribers; certificates and configuration files for routers and road warriors automatically generated; status displays for individual connections; log files for routers and road warriors; SSH diagnostic potentials for network engineers; 1:1 NAT entire network; scalable number of VPN connections
Optional expansions	customized application, adaptable layout; 300 Mbit/s wireless module
Hardware specification	AMD Geode LX CPU, 500 MHz (LX800) 5x86 CPU; 256 MB SDRAM; 128 KB L1 cache; 128 KB L2 cache; 4 GB CompactFlash; without disc and fan

Technical data	
Power supply	7 V to 200 V DC
Power consumption	7 W
Operating temperature range	0 °C to 50 °C
Interfaces	1x Ethernet (10/100 Mbit/s); 1x USB 2.0 type A; 1x serial interface; 2x Mini PCI ports; 1x VGA
Housing – dimensions	113 x 163 x 30 mm
Housing – weight	390 g
Mounting	not required (desktop device)
Complies with standards	
Norms	EN 61000-6-3 (2007); EN 61000-6-2 (2006); FCC 47 CFR Part 15 (2006)

Access parameters	
Web interface	http://192.168.1.1
User name	root
Password	root

Customer installation of the VPN server Wie-Service24

- Customer installation of the VPN server
- Administration on customer side
- High availability of VPN connections
- Customized layout possible

Type	Installation	Part No.
***wienet* WIESERVICE24-VM**	Virtual machine “Oracle Virtual Box“	**ZD.000.0012.0**
***wienet* WIESERVICE24-IPC SAVE**	On energy-saving PC hardware	ZD.000.0013.0
***wienet* WIESERVICE24-IPC HIGH**	On High Performance 19 "PC	ZD.000.0014.0
***wienet* WIESERVICE24-DC CUSTOM**	In customer data center	ZD.000.0015.0
***wienet* WIESERVICE24-DC INTERN.**	In internet data center (”in the cloud“)	**ZD.000.0016.0 preferably**

Properties
Security by VPN
Automatic generation of router configurations
Only outgoing connections to the VPN server Wie-Service24
No changes in the local network needed
Connection complete networks without additional route settings

Contract data	
Calculation	fixed rate
Number of VPN connections	> 1000
Administration	customer
Server hardware	selectable

M2M Device Management in its own M2M Cloud

Wie-Service24

A perfect team

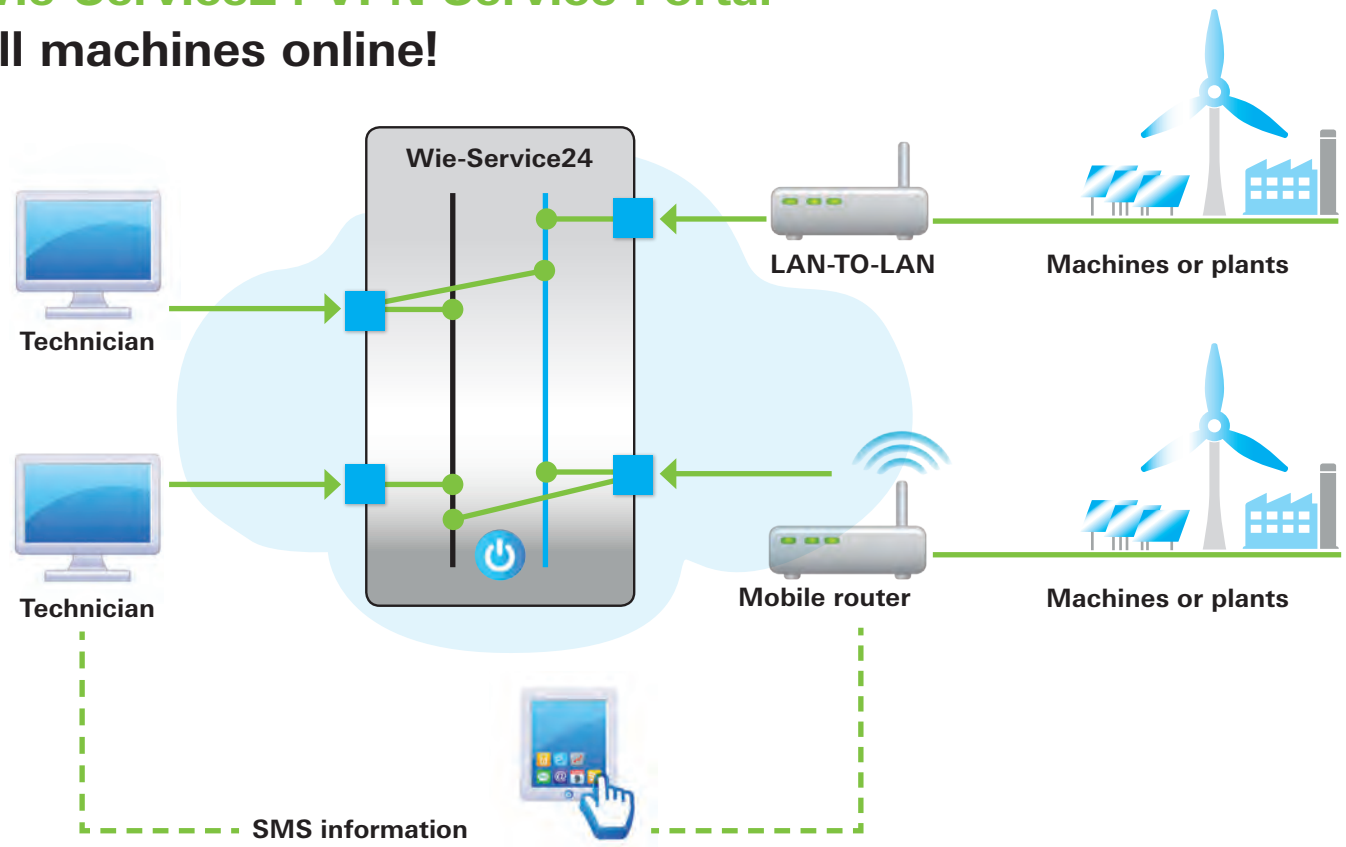
Wieland's ***wienet*** industrial routers and the Wie-Service24 VPN service portal makes M2M cloud communication child's play. Individual devices and even entire systems are securely and reliably connected together – guaranteed by the modular router concept and the cloud-based management solution Wie-Service24.

Advantages

- Security by VPN
- Automatic generation of router configuration
- Only outgoing connections towards Wie-Service24 are necessary
- No changes inside the local network is necessary
- Interconnection of complete networks, without additional routing configuration
- Little coordination with IT department and easy commissioning
- Mobile access by Smartphone or tablet to all devices behind the router
- directRemote: Direct access with all internet browser by a clearly URL

Wie-Service24 VPN Service Portal

All machines online!



The Wie-Service24 VPN service portal is available in different configurations:

You can try the working with the VPN-server Wie-Service24 with up to 30 routers and one PC client for free. If you need further VPN clients you can rent more router and PC clients. We propose the installation of your own customer VPN server portal. Installation of the portal on a virtual machine, on an industrial PC, data center at customer site or a data center on an internet server.

	Single access	Virtual machine	Industrial PC	Data center Server at Customer	Data center Internet server
Part-No.	ZD.000.0011.0 (Router) ZD.000.0011.1 (PC-Client)	ZD.000.0012.0	ZD.000.0013.0 (Energy Saving) ZD.000.0014.0 (High Performance)	ZD.000.0015.0	ZD.000.0016.0
User access	•	•	•	•	•
Administrator access	–	•	•	•	•
Server hardware from	Wieland	Customer	Wieland	Customer	Provider
Internet connection by	Wieland	Customer	Customer	Customer	Provider
Installation by	Wieland	Customer or Wieland	Wieland	Wieland	Wieland

More information is available from our technical support:

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wie-service24@wieland-electric.com


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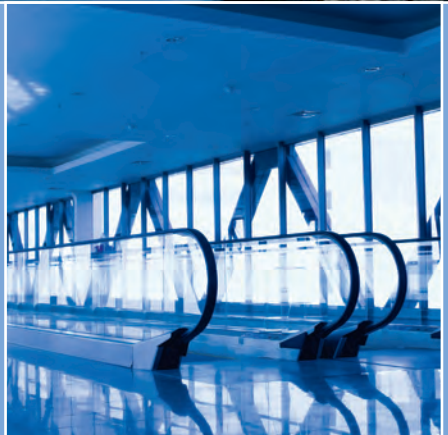


Coupling relays

The safe way to achieve a perfect interface in process applications.

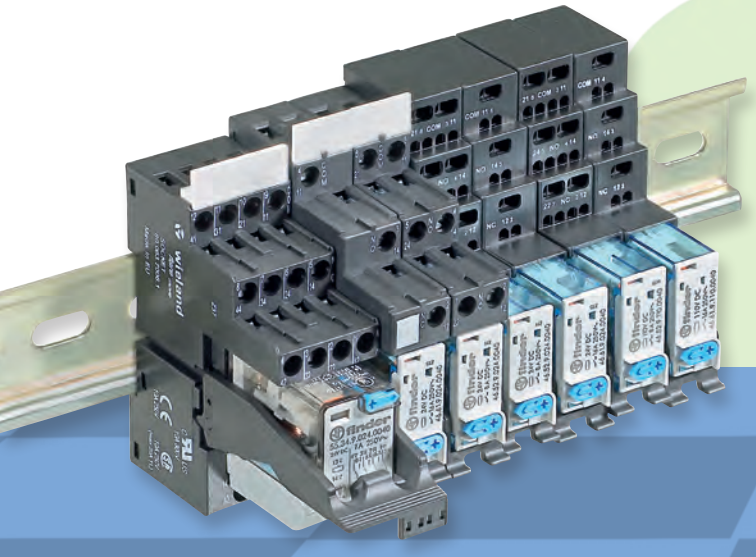
In the microchip age of bits and bytes, one might assume that there is no place left for electro-mechanical relays. Far from it!

In control, transportation and production technology, coupling relays have been reliably accomplishing important tasks for years, and continue to do so.

Together with control systems, they offer numerous possibilities of making your application even safer and less sensitive to disturbances.

Advantages:

- Safe galvanic separation
- Pluggable and compact solutions
- Mounts directly onto a 35-mm DIN rail
- Optional gold-plated contacts
- Screw clamp and tension spring termination
- Display and EMI suppression modules
- Also suitable for railway applications acc. to EN 50155



Coupling relays

flare MOVE

- Pluggable coupling relay
- Overall width 6.2 mm
- Screw terminals
- 1 change-over contact 6A

Description	Part No.	Std. Pack	Part No.	Std. Pack
flare MOVE	**$AgSnO_2$**		**$AgSnO_2$ + gold (5µ)**	
12V Relay module DC	80.010.4501.0	10	80.010.4501.1	10
12V Relay module AC/DC	80.010.4521.0	10	80.010.4521.1	10
24V Relay module DC	80.010.4502.0	10	80.010.4502.1	10
24V Relay module AC/DC spring clamp con.	80.010.4622.0	10		
24V Relay module AC/DC	80.010.4522.0	10	80.010.4522.1	10
115V Relay module AC/DC	80.010.4525.0	10	80.010.4525.1	10
230V Relay module AC/DC	80.010.4526.0	10	80.010.4526.1	10
Comb-shaped jumper 20pol. max 36A	80.063.4029.1	10		
Marking plate BM SF38	80.063.4129.3	1		
Replacement relay and socket	Information on request			

Technical data	
Maximum switching voltage	400 V AC
Maximum switching current	6 A AC/DC
Maximum starting current	10 A
Mechanical life	1 x 10^7
Electrical life up to 230 V AC / 6A	6 x 10^4
Isolation voltage of input / output	4 kV eff
Connectable via pluggable jumper	20 modules
Wire range fine-stranded/solid	0.14 -1.5 mm² (AWG 26–16) / 0.5 - 2.5 mm² (AWG 22–14)
Degree of protection / Mounting rail	IP 20 / TS35
Dimensions (mm) W x H x D	6.2 x 88 x 76
Ambient temperature	0 … +50 °C
Approvals	

flare MOVE

- Pluggable coupling relay
- Overall width 15.8 mm
- Screw terminals
- 1 change-over contact 16A
- 2 change-over contacts 8A

Description	Part No.	Std. Pack	Part No.	Std. Pack
flare MOVE	**1 change-over contact**		**2 change-over contacts**	
12V Relay module DC	80.010.4901.3	10	80.010.5501.2	10
24V Relay module DC	80.010.4902.3	10	80.010.5102.2	10
24V Relay module AC	80.010.4912.3	10		
115V Relay module AC	80.010.4915.3	10	80.010.5315.2	10
230V Relay module AC	80.010.4916.3	10	80.010.5316.2	10
Comb-shaped jumper 8pol. for A1, A2 max 10A	80.063.5029.2	10		
Marking tag BZ SF-48	80.063.5029.3	10		
Replacement relay	Information on request			

Technical data		
Maximum switching voltage	400 V AC	250 V AC
Maximum switching current	16 A / (10 A up to 12 V)	8 A
Maximum starting current	30 A / (20 A up to 12 V)	15 A
Mechanical life DC / AC	2 x 10^7 / 1 x 10^7	2 x 10^7
Electrical life AC 1	2 x 10^5 / 1 x 10^5	1 x 10^5
Isolation voltage of input / output	4 kV	
Connectable via pluggable jumper	8 modules	
Wire range fine-stranded/solid	0.25 - 4 mm² (AWG 24–12) / 0.25 - 6 mm² (AWG 24–10)	
Degree of protection / Mounting rail	IP 20 / TS35	
Dimensions (mm) W x H x D	15.8 x 78.6 x 76	
Ambient temperature	-40 … +70 °C	
Approvals		

Coupling relays

flare MOVE MR

- Pluggable coupling relay
- Robust pins
- Switching position is indicated mechanically
- Lockable test button
- For railway application accord. to EN 50 155
- Overall width 15.8 mm
- Screw terminals
- 1 change-over contact 16A
- 2 change-over contacts 8A

Description	Part No.	Std. Pack	Part No.	Std. Pack
flare MOVE MR	**1 change-over contact**		**2 change-over contacts**	
24V Relay module DC	80.010.6002.2	10	80.010.6032.2	10
24V Relay module DC with gold (5µm)	80.010.6002.3	10	80.010.6032.3	
Replacement relay	Information on request			
Comb-shaped jumper 8 pole for A1, A2 max 10A	80.063.5029.2	10		
Marking plate BM MR-4C	80.063.6029.3	10		
Technical data				
Maximum switching voltage	440 V AC		440 V AC	
Maximum switching current	16 A		8 A	
Maximum starting current	25 A		15 A	
Mechanical life	1 x 10^7		1 x 10^7	
Electrical life AC 1	1 x 10^5		1 x 10^5	
Isolation voltage of input / output	6 kV			
Wire range fine-stranded/solid	0.25 - 4 mm² (AWG 24–12) / 0.25 - 6 mm² (AWG 24–10)			
Degree of protection / Mounting rail	IP 20 / TS35			
Dimensions (mm) W x H x D	15.8 x 82.9 x 68.1			
Ambient temperature	-40…+70 °C (>12A max 50 °C)		-40 … +70 °C	
Approvals	CE cULus EAC			

flare MOVE MR

- Pluggable coupling relay
- Robust pins
- Switching position is indicated mechanically
- Lockable test button
- For railway application accord. to EN 50 155
- Overall width 15.8 mm
- Cage clamp
- 1 change-over contact 16A
- 2 change-over contacts 8A

Description	Part No.	Std. Pack	Part No.	Std. Pack
flare MOVE MR	**1 change-over contact**		**2 change-over contacts**	
24V Relay module DC	80.010.6102.2	10	80.010.6132.2	10
24V Relay module DC with gold (5µm)	80.010.6102.3	10	80.010.6132.3	
Replacement relay	Information on request			
Marking plate BM MR-4C	80.063.6029.3	10		
Technical data				
Maximum switching voltage	400 V AC		400 V AC	
Maximum switching current	16 A		8 A	
Maximum starting current	25 A		15 A	
Mechanical life	1 x 10^7		1 x 10^7	
Electrical life AC 1	1 x 10^5		1 x 10^5	
Isolation voltage of input / output	6 kV			
Wire range fine-stranded/solid	0.2 - 1.5 mm² (AWG 24–16)			
Degree of protection / Mounting rail	IP 20 / TS35			
Dimensions (mm) W x H x D	15.8 x 82.9 x 68.1			
Ambient temperature	-25…+70 °C (>12A max 50 °C)		-25 … +70 °C	
Approvals	CE cULus EAC			

flare MOVE MR

- Pluggable coupling relay
- Robust pins
- Switching position is indicated mechanically
- Lockable test button
- For railway application accord. to EN 50 155
- Overall width 27 mm
- Screw terminals
- 4 change-over contacts 7A

Description	Part No.	Std. Pack
flare MOVE MR	**4 change-over contact**	
24V Relay module DC	80.010.5702.2	10
Replacement relay	Information on request	
Technical data		
Maximum switching voltage	250 V AC	
Maximum switching current	7 A	
Maximum starting current	15 A	
Mechanical life	2 x 10^7	
Electrical life AC 1	1.5 x 10^5	
Isolation voltage of input / output	3.6 kV	
Wire range fine-stranded/solid	0.25 - 4 mm² (AWG 24–12) / 0.25 - 6 mm² (AWG 24–10)	
Degree of protection / Mounting rail	IP 20 / TS35	
Dimensions (mm) W x H x D	27 x 76 x 86.9	
Ambient temperature	-40 … +70 °C	
Approvals	CE cULus EAC	

Coupling relays

flare

- Compact coupling relay
- Overall width 6.2 mm
- Screw terminals/ Cage clamp
- 1 change-over contact 6 A

Description	Part No.	Std. Pack	Part No.	Std. Pack
flare	**Screw terminal**		**Cage clamp**	
12V Relay module DC			80.010.4106.0	10
24V Relay module DC	80.010.4000.0	10	80.010.4100.0	10
115V Relay module AC			80.010.4131.0	10
230V Relay module AC			80.010.4141.0	10
Pluggable jumper max 2A	Z8.000.0200.8	10		
Jumper for potential distribution red	Z8.000.0202.3	5		
Jumper for potential distribution blue	Z8.000.0202.4	5		
Endcaps for jumper, red	Z8.000.0202.1	20		
Endcaps for jumper, blue	Z8.000.0202.2	20		
8 digit marking tag, unmarked, 60 pcs.	Z4.242.5153.0	10		

Technical data		
Maximum switching voltage	250 V AC / 300 V DC	
Maximum switching current	6 A AC / 2A DC	
Maximum starting current	10 A	
Mechanical life	1 x 10^7	
Electrical life up to 230V AC / 6A	8 x 10^4	
Isolation voltage of input / output	4 kV_{eff}	
Connectable via pluggable jumper	50 modules	
Wire range fine-stranded/solid	0.5 -2.5 mm^2 (AWG 22–14) / 0.25 - 4 mm^2 (AWG 24–12)	0.25 -1.5 mm^2 (AWG 24–16) / 0.25 - 2.5 mm^2 (AWG 24–14)
Degree of protection / Mounting rail	IP 20 / TS35	
Dimensions (mm) W x H x D	6.2 x 89 x 70	
Ambient temperature	0 … +60 °C	
Approvals	CE UL CSA CSA$_{Ex}$	

flare

- Compact coupling relay
- Overall width 6.2 mm / 12.4 (2 change-over contacts)
- Screw terminals/ Cage clamp
- Special Type

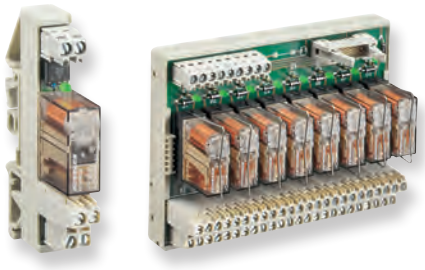
Description	Part No.	Std. Pack	Part No.	Std. Pack
flare	**Screw terminal**		**Cage clamp**	
24V Relay module AC/DC 1 change-over contact DC 48V 20mA with gold (3µm)	80.010.4005.0	10	80.010.4105.0	10
24V Relay module DC 2 change-over contact AC 250V 6A AC/DC 300 V 2A DC			80.010.4103.0	5
24V Knife edge disconnect relay AC/DC 1 change-over contact AC 250V 6A / DC 300 V 2 A			80.010.4120.0	10
24V HAND-0-AUTO-Relay 1 normally open contact AC 250V 6A / DC 300V 2A			80.010.4101.0	10

Technical data		
Mechanical life	2 x 10^7	
Electrical life up to 230V AC / 6A	6 x 10^4	
Isolation voltage of input / output	4 kV_{eff}	
Connectable via pluggable jumper	50 modules	
Wire range fine-stranded/solid	0.5 -2.5 mm^2 (AWG 22–14) / 0.25 - 4 mm^2 (AWG 24–12)	0.25 -1.5 mm^2 (AWG 24–16)/ 0.25 - 2.5 mm^2 (AWG 24–14)
Degree of protection / Mounting rail	IP 20 / TS35	
Dimensions (mm) W x H x D	6.2 x 89 x 70 / 12.4 x 89 x 70 (2 change-over contacts)	
Ambient temperature	0 …. +60 °C 6 mm^2	
Approvals	CE UL CSA CSA$_{Ex}$	

Coupling relays

Relay output modules

- Pluggable coupling relay
- Screw terminals
- 1 change-over contact / 2 change-over contacts
- 1 relay up to 16 relays
- 5 A switching capacity per output
- 12 V and 24 V

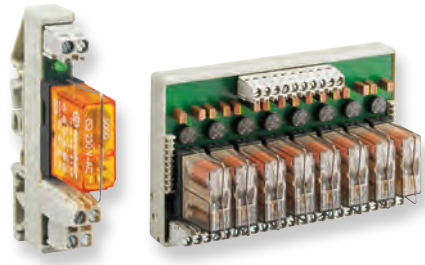


Description	Part No.	Std. Pack	Part No.	Std. Pack
Relay output modules	**1 change-over contact**		**2 change-over contacts**	
12V Module AC/DC 1 relay	87.220.7553.0	10		
24V Module DC 4 relay positive switching	87.220.1853.0	1	87.220.4753.3	1
24V Module DC 4 relay negative switching	87.221.5553.0	1		
24V Module DC 8 relay positive switching	87.220.1953.3	1	87.220.4853.3	1
24V Module DC 16 relay positive switching	87.220.2253.3	1		
Replacement relay	Z8.000.0056.9	10	Z8.000.0035.5	10

Technical data	
Maximum switching voltage	250 V AC/DC
Maximum switching current	5 A AC/DC
Maximum starting current	8 A AC/DC
Mechanical life	3×10^7
Electrical life 230V AC / 5A	6×10^5
Isolation voltage of input / output	4 kV
Wire range fine-stranded/solid	0.25 - 2.5 mm² (AWG 24–14) / 0.5 - 4 mm² (AWG 22–12)
Mounting rail	TS 35 / TS 32
Dimensions (mm) W x H x D	1 relay:12.5x80x58.3 4/8/16 relay: 70/128/280x80x71
Ambient temperature	-25 … +50 °C (Derating)
Approvals	CE

Relay output modules

- Pluggable coupling relay
- Screw terminals
- 1 change-over contact 4 A / 2 change-over contacts 5 A
- 1 relay up to 8 relays
- 115 V and 230 V AC/DC



Description	Part No.	Std. Pack	Part No.	Std. Pack
Relay output modules	**1 change-over contact**		**2 change-over contacts**	
230 V Module AC/DC 1 relay	80.010.0011.0	10	80.010.1100.0	5
115 V Module AC/DC 4 relay	80.010.1102.0	1	80.010.1104.0	1
115 V Module AC/DC 8 relay	80.010.1110.0	1	80.010.1112.0	1
230 V Module AC/DC 4 relay	80.010.1106.0	1	80.010.1108.0	1
230 V Module AC/DC 8 relay	80.010.1114.0	1	80.010.1116.0	1
Replacement relay	Z8.000.0181.0	10	Z8.000.0176.2	10

Technical data		
Maximum switching voltage	250 V AC/DC	
Maximum switching current	4 A AC/DC	5 A AC/DC
Maximum starting current	6 A AC/DC	6 A AC/DC
Mechanical life	3×10^7	
Electrical life 230V AC/nominal current	1.5×10^6	
Isolation voltage of input / output	4 kV	
Wire range fine-stranded/solid	0.25 - 2.5 mm² (AWG 24–14) / 0.5 - 4 mm² (AWG 22–12)	
Mounting rail	TS 35 / TS 32	
Dimensions (mm) W x H x D	1 relay: 12.5 x 80 x 70 4/8 relay: 70/128 x 80 x 71	
Ambient temperature	-40 … +50 °C (Derating)	
Approvals	CE	

Coupling relays

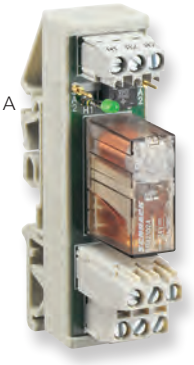
Relay system

- Bridgeable relay system
- Screw terminals
- 1 normally open contact/ 1 change-over contact
- 24 V AC/DC

Description	Part No.	Std. Pack	Part No.	Std. Pack
Relay system	**Output**		**Input**	
24 V Module AC/DC 1 normally open contact	80.010.0005.0	10	80.010.0007.0	10
24 V Module AC/DC 1 change-over contact	80.010.0008.0	10	80.010.0009.0	10
Pluggable jumper max. 0.5A	Z8.000.0103.4	10		
Technical data				
Maximum switching voltage	250 V AC/DC		48 V DC (10 µm gold)	
Maximum switching current	5 A AC/DC		20 mA	
Maximum starting current	8 A AC/DC			
Mechanical life	3 x 10^7		3 x 10^7	
Electrical life (up to nominal rating)	2.5 x 10^5		3 x 10^6	
Isolation voltage of input / output	4 kV			
Wire range fine-stranded/solid	0.5 - 2.5 mm² (AWG 22–14) / 0.5 - 4 mm² (AWG 22–12)			
Mounting rail	TS 35 / TS 32			
Dimensions (mm) W x H x D	12.5 x 80 x 60			
Ambient temperature	-25 … +50 °C (Derating up to 65 °C)			
Approvals				

Relay system

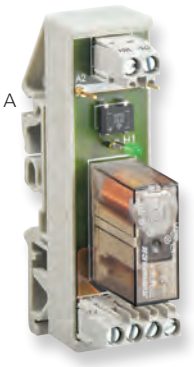
- Bridgeable relay system
- Screw terminals
- 2 change-over contacts 5 A
- 24 V AC/DC



Description	Part No.	Std. Pack	Part No.	Std. Pack
Relay system	**Output**		**Input**	
24 V Module AC/DC 2 change-over contacts	80.010.1003.0	5	80.010.1002.0	5
Pluggable jumper max. 0.5 A	Z8.000.0103.4	10		
Technical data				
Maximum switching voltage	250 V AC/DC		48 V DC (10 µm gold)	
Maximum switching current	5 A AC/DC		20 mA	
Maximum starting current	6 A AC/DC			
Mechanical life	3 x 10^7		3 x 10^7	
Electrical life (up to nominal rating)	2.5 x 10^5		3 x 10^6	
Isolation voltage of input / output	4 kV			
Wire range fine-stranded/solid	0.5 - 2.5 mm² (AWG 22–14) / 0.5 - 4 mm² (AWG 22–12)			
Mounting rail	TS 35 / TS 32			
Dimensions (mm) W x H x D	22.5 x 80 x 60			
Ambient temperature	-25 … +50 °C			
Approvals				

Relay system

- Bridgeable relay system
- Screw terminals
- 1 change-over contact 16 A
- 24 V AC/DC



Description	Part No.	Std. Pack
Relay system	**Output**	
24 V Module AC/DC 1 change-over contact	80.010.0010.0	5
Pluggable jumper max. 0.5 A	Z8.000.0103.4	10
Technical data		
Maximum switching voltage	250 V AC/DC	
Maximum switching current	16 A AC/DC	
Maximum starting current	16 A AC/DC	
Mechanical life	3 x 10^7	
Electrical life (up to nominal rating)	1.8 x 10^5	
Isolation voltage of input / output	4 kV	
Wire range fine-stranded/solid	0.5 - 2.5 mm² (AWG 22–14) / 0.5 - 4 mm² (AWG 22–12)	
Mounting rail	TS 35 / TS 32	
Dimensions (mm) W x H x D	22.5 x 80 x 60	
Ambient temperature	-25 … +50 °C (Derating up to 65 °C)	
Approvals		

Solid-State relays

flare

- Compact solid-state relay
- Overal width 6.2 mm
- Spring cage clamp
- Output 48 V DC

Description	Part No.	Std. Pack	Part No.	Std. Pack
flare	**Output 0,5 A**		**Output 2 A**	
24 V Module DC / Output 48 V	80.020.4100.0	10	80.020.4101.0	10
115 V Module AC/DC / Output 48 V	80.020.4102.0	10		
230 V Module AC/DC / Output 48 V	80.020.4103.0	10		
Pluggable jumper max 2 A	Z8.000.0200.8	10		
8 digit marking tag, unmarked, 60 pcs.	Z4.242.5153.0	10		

Technical data		
Maximum switching voltage	48 V DC (4,4…53 V DC)	
Maximum switching current	0.5 A	2 A
Min. switching current	0.1 mA	1 mA
Isolation voltage of input / output	3.75 kV	
Connectable via pluggable jumper	50 modules	
Wire range fine-stranded/solid	0.25 -1.5 (AWG 24–16) / 0.25 - 2.5 mm² (AWG 24–14)	
Degree of protection / Mounting rail	IP 20 / TS35	
Dimensions (mm) W x H x D	6.2 x 89 x 70	
Ambient temperature	0 …. +50 °C (Derating)	
Approvals	CE UL CSA CSA Ex	

flare

- Compact solid-state relay
- Overal width 6.2 mm
- Spring cage clamp
- Output 230 V AC

Description	Part No.	Std. Pack
flare	**Output 0,5 A**	
24V Module DC / Output 230 V AC	80.020.4150.0	10
Pluggable jumper max 2 A	Z8.000.0200.8	10
8 digit marking tag, unmarked, 60 pcs.	Z4.242.5153.0	10

Technical data	
Maximum switching voltage	250 V AC
Maximum switching current	0.5 A
Min. switching current	0.1 mA
Isolation voltage of input / output	2.5 kV
Connectable via pluggable jumper	50 modules
Wire range fine-stranded/solid	0.25 -1.5 mm² (AWG 24–16) / 0.25 - 2.5 mm² (AWG 24–14)
Degree of protection / Mounting rail	IP 20 / TS35
Dimensions (mm) W x H x D	6.2 x 89 x 70
Ambient temperature	0 … +50 °C (Derating)
Approvals	CE UL CSA CSA Ex

Solid-state relay

- Bridgeable
- Screw terminals
- Output 60 V DC

Description	Part No.	Std. Pack	Part No.	Std. Pack
Solid-State-Relay	**Output 3 A**		**Output 5 A**	
24 V Module DC / Output 48 V	80.020.2003.0	10	80.020.2004.0	10
Pluggable jumper	Z8.000.0103.4	10		

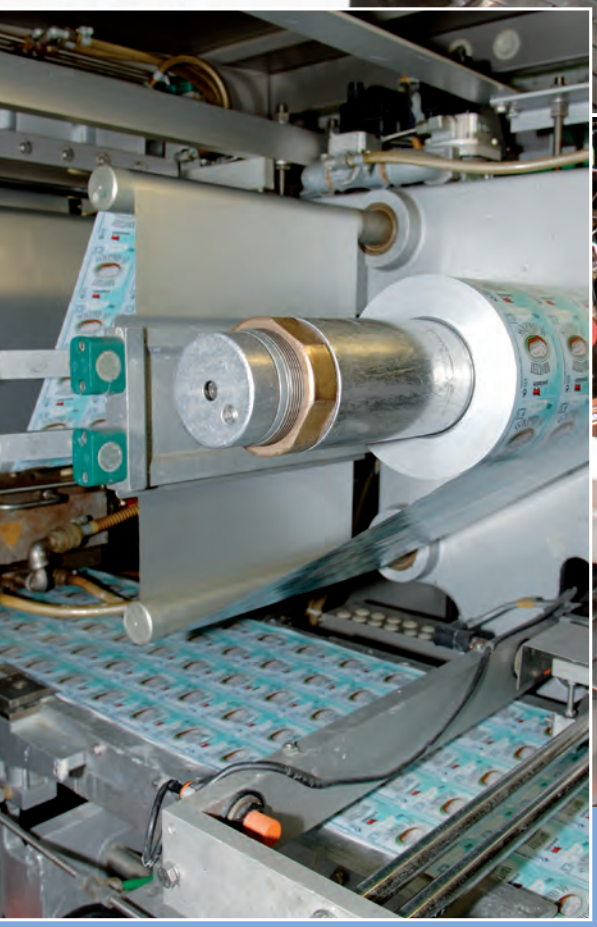
Technical data		
Maximum switching voltage	60 V DC (3…60 V)	
Maximum switching current	3 A DC (Derating)	5 A DC
Min. switching current	20 mA	
Isolation voltage of input / output	4 kV	
Connectable via pluggable jumper	20 modules	
Wire range fine-stranded/solid	0.5 -2.5 mm² (AWG 22–14) / 0.5 - 4 mm² (AWG 22–12)	
Mounting rail	TS 35 / TS 32	
Dimensions (mm) W x H x D	12.5 x 80 x 64	12.5 x 80 x 59
Ambient temperature	-20 … +50 °C (Derating)	
Approvals	CE UL CSA	

Solid-state relay

- Bridgeable
- Screw terminals
- Output 250 V AC

Description	Part No.	Std. Pack	Part No.	Std. Pack
Solid-State-Relay	**Output 4 A**		**Output 6 A**	
24 V Module DC / Output 250 V AC	80.020.2001.0	10	80.020.0004.0	10
Pluggable jumper	Z8.000.0103.4	10		

Technical data		
Maximum switching voltage	280 V AC (48…280 V)	
Maximum switching current	4 A	6 A
Min. switching current	60 mA	
Isolation voltage of input / output	4 kV	
Connectable via pluggable jumper	20 modules	
Wire range fine-stranded/solid	0.5 -2.5 mm² (AWG 22–14) / 0.5 - 4 mm² (AWG 22–12)	
Mounting rail	TS 35 / TS 32	
Dimensions (mm) W x H x D	12.5 x 80 x 56	25.6 x 80 x 70
Ambient temperature	-25 … +50 °C (Derating)	
Approvals	CE UL CSA	



Analog Isolation Amplifier flexible and precise

Analog isolation amplifier of the *cores* series

The ***cores*** series convinces with flexible use in process and industrial automation.

They ensure a defined separation of measurement and process signals from the control system. And it protects against voltage drops.

Analogue isolation amplifiers also convert signals into standardized signal levels.

cores combines a highly precise signal conversion with a very small housing and fulfils actual demands for such products.

The Advantages:

- Digital conversion (up to 16 Bit)
- Highest accuracy (0.1 %) and linearity
- Fastest reaction time (from 11 ms)
- 3 or 4 way galvanic isolation
- High isolation voltage
- Compact housing (also as thin as 6.2 mm)
- Universal functions settable
- Wide temperature range

Analog Isolation Amplifier

cores C1 UI-B

- Analog Isolation Amplifier
- 3 way isolation
- Input: voltage / current, output: voltage / current
- High accuracy by digital conversion
- Width 6.2 mm
- Spring clamp connection
- Wide temperature range

Type	Part No.
***cores* C1 UI-B**	82.003.0110.0
Techncal data	
Input range (adjustable)	0/1 ... 5 V DC or 0/2 ... 10 V DC 0/4 ... 20 mA DC
Output range (adjustable)	0/1 ... 5 V DC or 0/2 ... 10 V DC 0/4 ... 20 mA DC or 20 ... 4/0 mA DC active or passive
Galvanic isolation	yes, 3 way isolation
Isolation voltage	1500 V AC
Accuracy	<0.1%, 14 Bit resolution
Supply voltage range	19.2 … 30 V DC
Power consumption	max. 500 mW
Connection type	Spring clamp
Wire range solid/fine-stranded	0.2 - 2.5 mm² (AWG 24–14)
Degree of protection / Mounting rail	IP 20 / TH 35 (EN60715)
Dimensions (mm) W x H x D	6.2 x 93.1 x 102.5
Temperature range	-20 … +65 °C
Approvals (pending)	CE cULus

cores C1 PT-B

- Analog Isolation Amplifier
- 3 way isolation
- Input: PT 100, output: voltage / current
- High accuracy by digital conversion
- Width 6.2 mm
- Spring clamp connection
- Wide temperature range

Type	Part No.
***cores* C1 PT-B**	82.003.0120.0
Technical data	
Input range (adjustable)	PT100 with 2-, 3- or 4 wire connection -150 … +650 °C
Output range (adjustable)	0/1 ... 5 V DC or 0 ... 10 V; 10 ... 0 V DC 0/4 ... 20 mA DC or 20 ... 4/0 mA DC
Galvanic isolation	yes, 3 way isolation
Isolation voltage	1500 V AC
Accuracy	<0.1%, 14 Bit resolution
Supply voltage range	19.2 … 30 V DC
Power consumption	max. 500 mW
Connection type	Spring clamp
Wire range solid/fine-stranded	0.2 - 2.5 mm² (AWG 24–14)
Degree of protection / Mounting rail	IP 20 / TH 35 (EN60715)
Dimensions (mm) W x H x D	6.2 x 93.1 x 102.5
Temperature range	-20 … +65 °C
Approvals (pending)	CE cULus

cores C1 TC-B

- Analog Isolation Amplifier
- 3 way isolation
- Input: thermo coupler, output: voltage / current
- High accuracy by digital conversion
- Width 6.2 mm
- Spring clamp connection
- Wide temperature range

Type	Part No.
***cores* C1 TC-B**	82.003.0130.0
Technical data	
Input range (adjustable)	Types of thermo coupler: J, K, E, N, S, R, B, T
Output range (adjustable)	0/1 ... 5 V DC oder 0 ... 10 V DC 0/4 ... 20 mA DC oder 20 ... 4/0 mA DC
Galvanic isolation	yes, 3 way isolation
Isolation voltage	1500 V AC
Accuracy	<0.1%, 14 Bit resolution
Supply voltage range	19.2 … 30 V DC
Power consumption	max. 500 mW
Connection type	Spring clamp
Wire range solid/fine-stranded	0.2 - 2.5 mm² (AWG 24–14)
Degree of protection / Mounting rail	IP 20 / TH 35 (EN60715)
Dimensions (mm) W x H x D	6.2 x 93.1 x 102.5
Temperature range	-20 … +65 °C
Approvals (pending)	CE cULus

Analog Isolation Amplifier

cores C2 UI-A

- Analog Isolation Amplifier
- 3 way isolation
- Input: current, output: current
- High accuracy by digital conversion
- Width 17.5 mm
- Screw clamp pluggable
- Wide temperature range

Type	Part No.
***cores* C2 UI-A**	82.003.0210.0
Technical data	
Input range (adjustable)	0 ... 20 mA DC active or passive
Output range (adjustable)	0 ... 20 mA DC active or passive
Galvanic isolation	yes, 3 way isolation
Isolation voltage	1500 V AC
Accuracy	<0.1%
Reaction time	<40 ms
Supply voltage range	9 … 40 V DC, 19 … 28 V AC
Power consumption	max. 2.5 W
Connection type	Screw clamp pluggable
Wire range solid/fine-stranded	0.14 - 2.5 mm² (AWG 26–14)
Degree of protection / Mounting rail	IP 20 / TH 35 (EN60715)
Dimensions (mm) W x H x D	17.5 x 100 x 112
Temperature range	-20 … +60 °C
Approvals (pending)	CE cULus

cores C2 M-A

- Analog Isolation Amplifier
- 3 way isolation
- Input: voltage, current, thermo coupler, potentiometer, output: voltage, current
- High accuracy by digital conversion
- Width 17.5 mm
- Screw clamp pluggable
- Wide temperature range

Type	Part No.
***cores* C2 M-A**	82.003.0200.0
Technical data	
Input range (adjustable)	75 mV ... 20 V in 9 ranges (bipolar) 0 … 20 mA (bipolar) J,K,R,S,T,B,E,N Thermo coupler Pt100, Pt500, Pt1000, Ni100. 3 or 4 wire 500 Ohm ... 10 kOhm Potentiometer 500 Ohm … 25 kOhm Rheostat
Output range (adjustable)	0 ... 20 mA oder 4 ... 20 mA 0 ... 5 V oder 0 ... 10 V oder 1 ... 5 V oder 2 ... 10 V
Galvanic isolation	yes, 3 way isolation
Isolation voltage	1500 V AC
Accuracy	<0.1%, 12 or 16 Bit resolution
Reaction time	<35 ms (at 12 Bit) and <140 ms (at 16 Bit)
Supply voltage range	10 … 40 V DC, 19 … 28 V AC
Power consumption	max. 2.5 W
Connection type	Screw clamp pluggable
Wire range solid/fine-stranded	0.14 - 2.5 mm² (AWG 26–14)
Degree of protection / Mounting rail	IP 20 / TH 35 (EN60715)
Dimensions (mm) W x H x D	17.5 x 100 x 112
Temperature range	-10 … +60 °C
Approvals (pending)	CE cULus

cores C2 M2-A

- Analog Isolation Amplifier
- 4 way isolation
- 2 analogue outputs
- Input: voltage, current, thermo coupler, potentiometer, output: voltage, current
- High accuracy by digital conversion
- Width 17.5 mm
- Screw clamp pluggable
- Wide temperature range

Type	Part No.
***cores* C2 M2-A**	82.003.0250.0
Technical data	
Input range (adjustable)	0 ... +10V 0 ... 20mA active or passive J, K, R, S, T, B, E, N Thermo coupler Pt100, Pt500, Pt1000, Ni100. 2, 3, 4 wire 1 ... 100 kOhm Potentiometer 500 Ohm ... 25 kOhm Rheostat
Output range (adjustable)	0 ... 20 mA or 4 ... 20 mA active or passive 0 … +10 V
Galvanic isolation	yes, 4 way isolation
Isolation voltage	1500 V AC
Accuracy	<0.1%, 14 Bit resolution
Reaction time	<11 ms
Supply voltage range	10 … 40 V DC, 19 … 28 V AC
Power consumption	max. 2 W
Connection type	Screw clamp pluggable
Wire range solid/fine-stranded	0.14 - 2.5 mm² (AWG 26–14)
Degree of protection / Mounting rail	IP 20 / TH 35 (EN60715)
Dimensions (mm) W x H x D	17.5 x 100 x 112
Temperature range	-10 … +65 °C
Approvals (pending)	CE cULus

I/O fieldbus system

Economical, compact and modular

In ***ricos*** FLEX, Wieland Electric is offering a continuous fieldbus concept for the interchange of data between controller and field periphery. The modular I/O nodes are installed decentrally, close to the machine, and networked via the fieldbus. A broad range of I/O modules process the various actuator/sensor signals. Diverse diagnostic functions permit a significant reduction in machine standstill times.

Advantages:

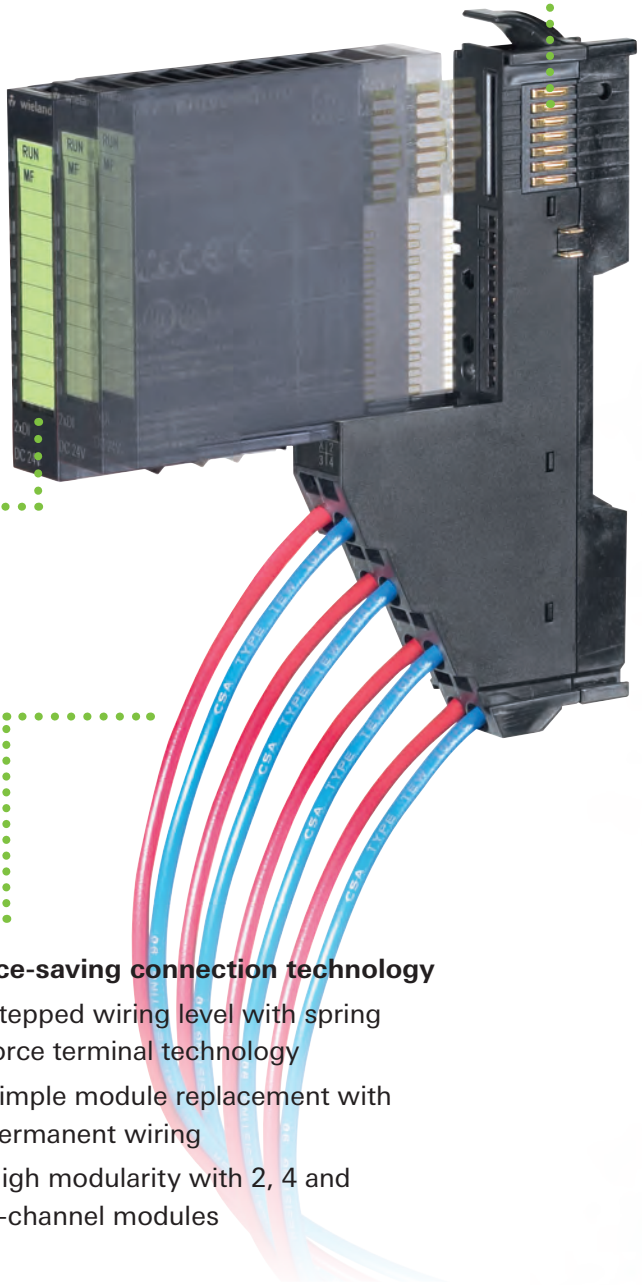
- Cost-efficiency through a highly modular design
- 2 to 8-channel modules
- Narrow module width of 12,9 mm
- Up to 64 modules can be connected to each bus coupler
- Spring tension connection terminals
- Very fast reaction time
- Individual channel inscription

High-performance rear wall bus

- 48 Mbit/s transmission speed
- Very fast reaction time of up to 20 µs
- One connection module for all application modules

Easy to assemble/service

- Simplest assembly thanks to secure sliding mechanism
- Module protection through coding
- Service-friendly combination of connection module and application module
- Recommendation: top hat rail mounting (TS 35 x 15)



Space-saving connection technology

- Stepped wiring level with spring force terminal technology
- Simple module replacement with permanent wiring
- High modularity with 2, 4 and 8-channel modules

Clearly arranged status and diagnostic displays with direct channel assignment for fast troubleshooting.

Inscription strips for individual marking of each channel.

ricos FLEX

Can be combined and used for any application.

ricos FLEX **is a module and extremely compact I/O system. It can be combined and used with any PLC and any IPC.**

ricos FLEX combines high functionality with an intelligent housing concept in an extremely compact design.

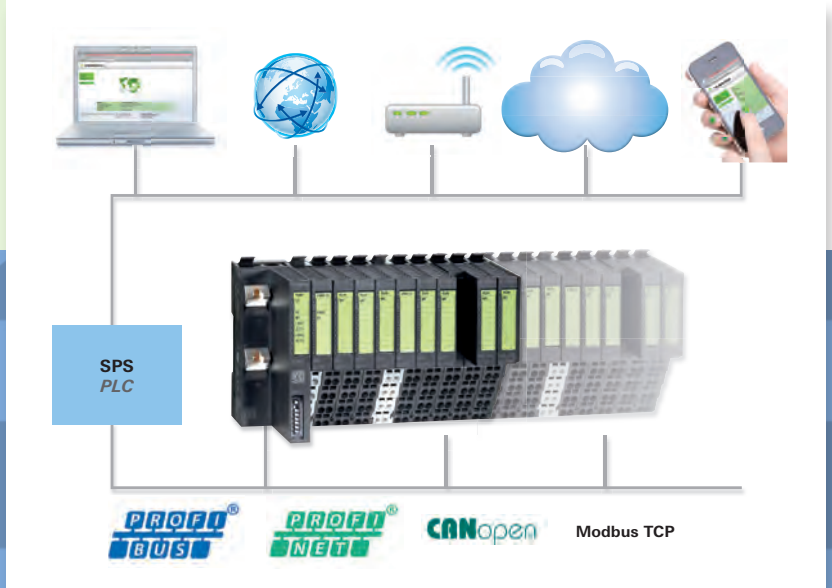
ricos FLEX is highly compact and precisely, matched, bit by bit, to the requirements of the application concerned.

All bus couplers support up to 64 user modules. One module unit comprises a connection module and an electronic module, which are connected by means of a slide and click mechanism.

The connection module combines terminals, mounting for the electronic module and the ***ricos*** FLEX rear wall bus connector.
So for servicing, only the electronic module is replaced by simply pulling out the connection module – the wiring and mounting on the 25 mm DIN profile rail remain intact.

The spring force terminals arranged step-wise on the connection module permit fast, clearly arranged and safe wiring.

The integrated status LEDs and the inscription strips on the front of the electronic modules guarantee channel-specific, clear assignment and readability of the channel statuses.



Bus coupler

ricos FLEX BC DP

- Bus coupler Profibus DP-V1 Slave
- 244 byte input and 244 byte output data
- 64 assemblies per assembly carrier

Type	Part No.
ricos FLEX BC DP	83.036.1000.0
Technical data	
Input voltage	20.4…28.8 V DC
Input current	0.95 A
Number of subscribers	125
Subscriber address	1 - 125
Baud rate	9.6 kbit/s - 12 Mbit/s
Address range for inputs	max. 244 bytes
Address range for outputs	max. 244 bytes
Fieldbus connection	9-pole sub-D socket
Fieldbus	Profibus DP to EN50170
Temperature range	0 … +60 °C
Dimensions WxHxD (mm)	48.5 x 109 x 76.5
Mounting method	Top hat rail mounting
Weight	155 g
Terminal type	Spring force terminal
Terminal cross-section	0.14 – 2.5 mm²
Approvals	cULus CE

ricos FLEX BC CANopen

- Bus coupler CANopen Slave
- 16 RX and 16 TX PDOs
- 2 SDOs
- PDO linking
- PDO Mapping: fixed
- 64 assemblies per assembly carrier

Type	Part No.
ricos FLEX BC CANopen	83.036.1020.0
Technical data	
Input voltage	20.4…28.8 V DC
Input current	0.95 A
Number of subscribers	127
Subscriber address	1 - 127
Baud rate	10 kBaud - 1 MBaud
Address range for inputs	max. 128 bytes
Address range for outputs	max. 128 bytes
Fieldbus connection	9-pole sub-D plug
Fieldbus	CANopen
Temperature range	0 … +60 °C
Dimensions WxHxD (mm)	48.5 x 109 x 76.5
Mounting method	Top hat rail mounting
Weight	155 g
Terminal type	Spring force terminal
Terminal cross-section	0.14 – 2.5 mm²
Approvals	cULus CE

Bus coupler

ricos FLEX BC MODBUS

- Bus coupler MODBUS TCP Slave
- I/O configuration via the fieldbus
- 64 assemblies per assembly carrier

Type	Part No.
ricos FLEX BC MODBUS	83.036.1040.0
Technical data	
Input voltage	20.4…28.8 V DC
Input current	0.95 A
Fieldbus connection	RJ45 / Ethernet 10/100 MBit
Fieldbus	MODBUS-TCP
Temperature range	0 … +60 °C
Dimensions WxHxD (mm)	48.5 x 109 x 76.5
Mounting method	Top hat rail mounting
Weight	155 g
Terminal type	Spring force terminal
Terminal cross-section	0.14 – 2.5 mm²
Approvals	cULus CE

ricos FLEX BC PROFINET

- Bus coupler PROFINET I/O Slave
- Transmission rate 100 MBit/s
- 64 assemblies per assembly carrier

Type	Part No.
ricos FLEX BC PROFINET	83.036.1010.0
Technical data	
Input voltage	20.4…28.8 V DC
Input current	0.95 A
Baud rate	100 Mbit/s
Address range for inputs	512 bytes
Address range for outputs	512 bytes
Fieldbus connection	2 x RJ45 / Ethernet 100 MBit
Fieldbus	PROFINET-IO
Temperature range	0 … +60 °C
Dimensions WxHxD (mm)	48.5 x 109 x 76.5
Mounting method	Top hat rail mounting
Weight	155 g
Terminal type	Spring force terminal
Terminal cross-section	0.14 – 2.5 mm²
Approvals	cULus CE

Expansion modules

ricos FLEX potential distributor

- Potential distributor
- For distributing 24 V DC and 0 V potentials

Type	Part No.
ricos FLEX PV 8xDC24V	83.036.0000.0
ricos FLEX PV 8xDC0V	83.036.0010.0
ricos FLEX PV 4xDC24V 4xDC0V	83.036.0020.0

Technical data	
Number of terminals	8 x 24 V DC | 8 x 0 V DC | 4 x 24 VDC; 4 x 0 V DC
Max. terminal voltage	30 V DC | 0 V DC | 30 V DC
Max. terminal current	10 A
Max. total current per module	10 A
Temperature range	0 … +60 °C
Dimensions WxHxD (mm)	12.9 x 109 x 52.5
Mounting method	Top hat rail mounting
Weight	50 g
Terminal type	Spring force terminal
Terminal cross-section	0.14 – 2.5 mm²
Approvals	cULus CE

ricos FLEX power module

- Potential distributor
- Supply voltage 24 V DC, 10 A
- Reverse polarity protection
- Overvoltage protection

Type	Part No.
ricos FLEX PW DC 24V	83.036.0030.0
ricos FLEX PW 24V/5V	83.036.0040.0

Technical data	
Input voltage	20.4...28.8 V DC
Output voltage	24 V
Output current	10 A | 4 A
Reverse polarity protection	yes
Overvoltage protection	36 V
Temperature range	0 … +60 °C
Dimensions WxHxD (mm)	12.9 x 109 x 76.5
Mounting method	Top hat rail mounting
Weight	60 g
Terminal type	Spring force terminal
Terminal cross-section	0.14 – 2.5 mm²
Approvals	cULus CE

ricos FLEX digital input module

- Digital input module
- 2 / 4 / 8 inputs

Type	Part No.
ricos FLEX 2xDI DC24V	83.036.2100.0
ricos FLEX 4xDI DC24V	83.036.2200.0
ricos FLEX 8xDI DC24V	83.036.2300.0

Technical data	
Input voltage	20.4...28.8 V DC
Input current with signal 1	3 mA
Number of inputs	2 | 4 | 8
Switching level "0"	0…5 V DC
Switching level "1"	15…28,8 V DC
Channel status (high)	LED (green)
Temperature range	0 … +60 °C
Dimensions WxHxD (mm)	12.9 x 109 x 76.5
Mounting method	Top hat rail mounting
Weight	60 g
Terminal type	Spring force terminal
Terminal cross-section	0.14 – 2.5 mm²
Approvals	cULus CE

Expansion modules

ricos FLEX digital output module

- Digital output module
- 2 / 4 / 8 outputs
- 2 relay outputs 30 V DC / 230 V AC; 3 A

Type	Part No.
ricos FLEX 2xDO DC24V 0,5A	83.036.3100.0
ricos FLEX 2xDO DC24V 2A	83.036.3110.0
ricos FLEX 2xDO DC30V 3A RELAY	83.036.3150.0
ricos FLEX 4xDO DC24V 0,5A	83.036.3200.0
ricos FLEX 4xDO DC24V 2A	83.036.3210.0
ricos FLEX 8xDO DC24V 0,5A	83.036.3300.0

Technical data	
Output voltage	20,4...28,8 V DC | 30 V DC/ 230 V AC (Relay)
Output current with signal 1	0,5 A (2/4/8 DO), 2 A (2/4 DO), 3 A (Relay)
Number of outputs	2 | 2 | 2 x RELAY | 4 | 4 | 8
Output protection	Short circuit and overload protection
Channel status (high)	LED (green)
Temperature range	0 ... +60 °C
Dimensions WxHxD (mm)	12.9 x 109 x 76.5
Mounting method	Top hat rail mounting
Weight	60 g
Terminal type	Spring force terminal
Terminal cross-section	0.14 – 2.5 mm²
Approvals	cULus CE

ricos FLEX analog input module

- Analog input module
- 4 inputs, 12 bit
- 4 wire, isolated

Type	Part No.
ricos FLEX 4xAI 12BIT 0...10V	83.036.4200.0
ricos FLEX 4xAI 12BIT 0(4)...20mA	83.036.4240.0
ricos FLEX 4xAI 12BIT -10V...+10V	83.036.4210.0
ricos FLEX 4xAI 16BIT R ,RTD	83.036.4261.0

Technical data	
Number of inputs	4 | 4 | 4 | 4
Measuring ranges	0...10 V | 0(4)...20 mA | -10 V...+10 V | RTD,PT100
Auflösung in Bit	12 | 12 | 12 | 16
Conversion time	1.15 ms, all channels
Module status	LED (green)
Temperature range	0 ... +60 °C
Dimensions WxHxD (mm)	12.9 x 109 x 76.5
Mounting method	Top hat rail mounting
Weight	60 g
Terminal type	Spring force terminal
Terminal cross-section	0.14 – 2.5 mm²
Approvals	cULus CE

ricos FLEX analog output module

- Analog output module
- 4 outputs, 12 bit

Type	Part No.
ricos FLEX 4xAO 12BIT 0...10V	83.036.5200.0
ricos FLEX 4xAO 12BIT 0(4)...20mA	83.036.5220.0
ricos FLEX 4xAO 12BIT -10V...+10V	83.036.5210.0

Technical data	
Number of outputs	4 | 4 | 4
Measuring ranges	0...10 V | 0(4)...20 mA | -10 V...+10 V
Resolution in bits	12
Conversion time	2 ms, all channels
Module status	LED (green)
Temperature range	0 ... +60 °C
Dimensions WxHxD (mm)	12.9 x 109 x 76.5
Mounting method	Top hat rail mounting
Weight	60 g
Terminal type	Spring force terminal
Terminal cross-section	0.14 – 2.5 mm²
Approvals	cULus CE


05

Timers

Always up to the minute

The electronic relays are ideally suited for standard, monitoring and control tasks in order to control function processes down to the second. Depending on the application, multiple-voltage and multi-functional relays are available.

Decades of timer know-how are packed into a completely new, highly miniaturized generation of timers just 22.5 mm wide. Although the end of the timer has been being predicted for years now, as the PLC has spread, high quality timers with well thought-out designs and universal application will continue to be needed in industrial automation.

Timers remain crucial – in less complex series machines, in later modifications, everywhere where other solutions would result in un-necessary engineering and hardware costs. For these applications Wieland offers a range of timers that provides everything you need. These devices unite diverse features with an efficiency that permits the fullest profitability – from procurement and warehousing through application and operation, and finally to disposal.

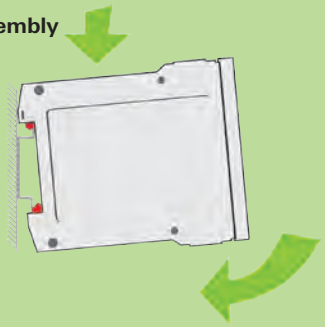
Variable input voltage

The activation of the excitation input B1 can be done with any voltage levels from AC/DC 20.4 V to 264 V.

Remote Control (optional)

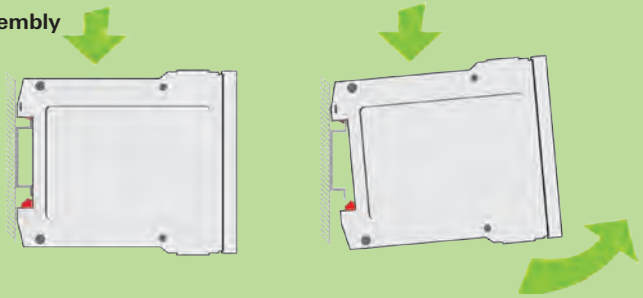
Connecting an optional remote potentiometer means that a number of devices can be time-setting enabled over large distances without requiring access to the control cabinet. Operation without a remote potentiometer does not require a bridge at the relay.

Assembly



1. Hook the housing onto the DIN rail
2. Snap the housing onto the DIN rail by gently pressing it in the direction of the arrow

Disassembly



1. Press down the housing in the direction of the arrow
2. Release the housing from its latched position by holding it down and moving it in the direction of the arrow, and remove it from the DIN rail

Multiple-voltage ergonomic and mobile

flare TIME series of timer relays

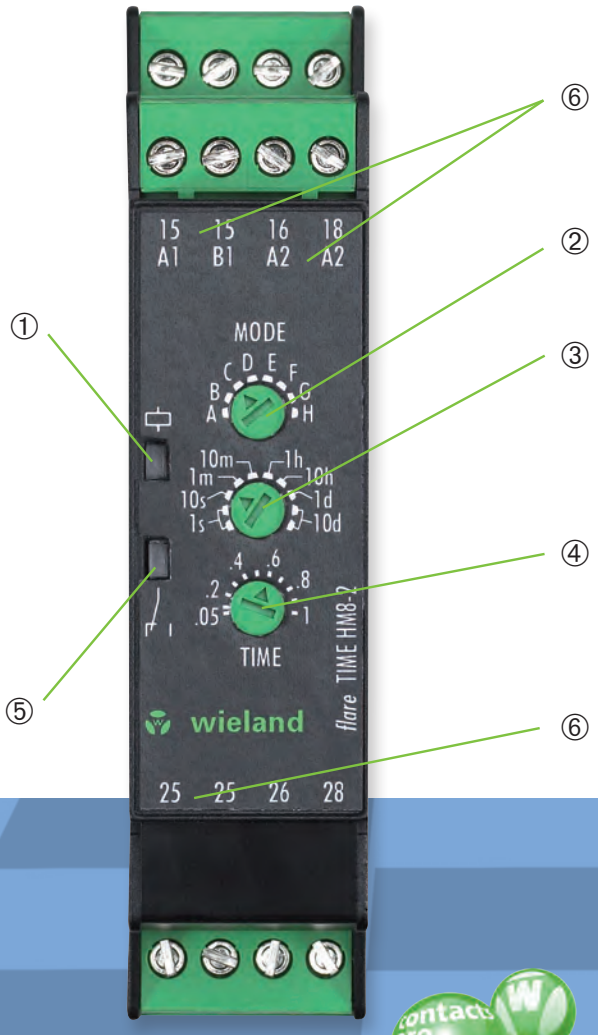
Our **flare** TIME family features universal application in the industrial automation sector. Up to 8 functions in just one relay cover all of your requirements and reduce inventory costs as well. Existing production processes can be easily expanded thanks to our **flare** TIME timer relay series, without incurring additional engineering and hardware costs. Our timer relays can be used in bakery machines, industrial washing machines, elevators and escalators, access controls and much more.

Features:

- Ambient temperatures from –25 °C to +60 °C
- Very high interference voltage resistance
- Output relays correspond to utilization category AC-15 and DC-13

The advantages:

① Power LED with progress display
② Function setting
③ Time range setting
④ Clear time setting
⑤ LED as status indicator of the change-over contact
⑥ Double connection points internally connected (HM series)



Electronic timer and switching relays for DIN rails

Electronic timer and switching relays for panel mounting

Electromechanical timer and switching relays for DIN rails (on request)

Electromechanical timer and switching relays for panel mounting (on request)

! Further products and technical details can be found at **www.wieland-electric.com** in our **e-catalog**.

Electronic timer and switching relays for DIN rails multifunction

Description		flare TIME HM8-2-A	flare TIME HM8-2P-A	flare TIME HM8-2PS-A	flare TIME HM5-1-A	flare TIME M8-2	flare TIME M8-1	flare TIME M4-2	flare TIME M4-1	flare TIME-S
Part no.		81.020.0104.0	81.020.0134.0	81.020.0135.0	81.020.0100.0	81.020.0003.0	81.020.0002.0	81.020.0001.0	81.020.0000.0	81.020.4100.0
Model	Multi-function	•	•	•	•	•	•	•	•	
	Multi-range	•	•	•	•	•	•	•	•	•
Function										
Timer relays	ON-delay	•	•	•	•	•	•	•	•	•
	OFF-delay	•	•	•		•	•			•
	ON-delay- and OFF-delay, symmetrical	•	•	•		•	•			
Interval ON relay	Interval ON	•	•	•	•	•	•	•	•	•
	Interval OFF									
	Interval ON and Interval OFF	•	•	•		•	•			
Repeat cycle timer	OFF start, symmetrical and selectable	•	•	•	•	•	•			•
	ON start, symmetrical and selectable	•	•	•	•	•	•	•	•	•
	ON start, symmetrical and fixed									
	OFF start and ON start, symmetrical and fixed, cycle time setting range									
Star-delta relay	Switch-over relay, Interval ON									
Pulse relay	Pulse relay, ON-delay, Pulse output	•	•	•	•	•	•	•	•	
	Pulse relay, OFF start, OFF start selectable, ON time fixed									
	Pulse relay, alternating, OFF or ON time selectable									
	One shot (interval ON)									
Contacts	Timed change-over contact	2	2	1	1	2[1)]	1	2[1)]	1	1
	Instantaneous change-over contact			1		1[1)]		1[1)]		
Rated Voltage	Multi-voltage AC/DC 24 to 230 (240) V	•	•	•	•	•	•	•	•	
Special Features	Remote potentiometer connection		•	•						
	Double connection points (internally connected) for trough cabling	•	•	•	•					
	Digital (D) or analog (A) settings	A	A	A	A	A	A	A	A	
Housing	Surface mounting 22.5 mm	•	•	•	•	•	•	•	•	

1) = 1 timed and 1 instantaneous change-over contact or 2 timed change-over contacts, selectable

Electronic timer and switching relays for DIN rails

flare TIME M

- Multi-function timer
- Multi-range time
- Wide input voltage range 20.4 … 264 V AC/DC
- 4 or 8 selectable time functions
- 1 or 2 change-over contacts 5 A

Type	Part No.
flare TIME M4-1 (4 time ranges / 1 contacts)	81.020.0000.0
flare TIME M4-2 (4 time ranges / 2 contacts)	81.020.0001.0
flare TIME M8-1 (8 time ranges / 1 contacts)	81.020.0002.0
flare TIME M8-2 (8 time ranges / 2 contacts)	81.020.0003.0

Technical data	
Input voltage range	20,4 … 264 V AC/DC
Time range	0.1 s … 1200 h
Time functions	4 or 8
Number of change-over contacts	1 or 2
Maximum switching current	5 A
Mechanical life time	10 x 10^6
Electrical life time AC1	0.1 x 10^6
Isolation voltage of input/output	2 kV
Connection clamps	Screw clamp
Wire range fine-stranded/solid	0.14 - 2.5 mm² (AWG 26–14)
Degree of protection / mounting rail	IP 20 / TH 35 (EN60715)
Dimensions (mm) W x H x D	22.5 x 89.4 x 100
Operation temperature range	-20 … +55 °C
Approvals	CE cULus

flare TIME HM

- Multi-function timer
- Multi-range time
- Wide input voltage range 20.4 … 264 V AC/DC
- 5 or 8 selectable time functions
- Pluggable clamps
- Wide temperature range
- 1 or 2 change-over contacts 5 A

Type	Part No.
flare TIME HM5-1-A (5 time ranges / 1 contacts)	81.020.0100.0
flare TIME HM8-2-A (8 time ranges / 2 contacts)	81.020.0104.0
flare TIME HM8-2P-A (with remote control connection)	81.020.0134.0
flare TIME HM8-2PS-A (with remote control connection)	81.020.0135.0

Technical data	
Input voltage range	20,4 … 264 V AC/DC
Time range	0.05 s … 240 h
Time functions	5 or 8
Number of change-over contacts	1 or 2
Maximum switching current	5 A
Mechanical life time	20 x 10^6
Electrical life time AC1	0.1 x 10^6
Isolation voltage of input/output	2 kV
Connection clamps	Pluggable screw clamp
Wire range fine-stranded/solid	0.2 - 2.5 mm² (AWG 24–14)
Degree of protection / mounting rail	IP 20 / TH 35 (EN60715)
Dimensions (mm) W x H x D	22.5 x 96.5 x 81.5
Operation temperature range	-40 … +60 °C
Approvals	CE cULus

flare TIME TWIN-1

- Multi-range repeat cycle timer
- Multi-range time
- ON- or OFF-start settable
- Time ON and OFF seperate adjustable
- Wide input voltage range 20.4 … 264 V AC/DC
- 1 change-over contacts 5 A

Type	Part No.
flare TIME TWIN-1	81.020.0011.0

Technical data	
Input voltage range	20,4 … 264 V AC/DC
Time range	0.1 s … 1200 h
Time functions	ON- or OFF-start
Number of change-over contacts	1
Maximum switching current	5 A
Mechanical life time	10 x 10^6
Electrical life time AC1	0,1 x 10^6
Isolation voltage of input/output	2 kV
Connection clamps	Screw clamp
Wire range fine-stranded/solid	0.14 - 2.5 mm² (AWG 26–14)
Degree of protection / mounting rail	IP 20 / TH 35 (EN60715)
Dimensions (mm) W x H x D	22.5 x 89.4 x 100
Operation temperature range	-20 … +55 °C
Approvals	CE cULus

Electronic timer and switching relays for DIN rails | for panel mounting

flare TIME OFF-1

- OFF delayed timer
- No auxiliary voltage necessary
- 2 time ranges setable
- 1 change-over contacts 5 A

Type	Part No.
flare TIME OFF-1	81.020.0010.0

Technical data	
Input voltage range	170 … 264 V AC
Time range	1 … 120 s
Time functions	OFF delay
Number of change-over contacts	1
Maximum switching current	5 A
Mechanical life time	10 x 10^6
Electrical life time AC1	0.1 x 10^6
Isolation voltage of input/output	2 kV
Connection clamps	Screw clamp
Wire range fine-stranded/solid	0.14 - 2.5 mm² (AWG 26–14)
Degree of protection / Mounting rail	IP 20 / TH 35 (EN60715)
Dimensions (mm) W x H x D	22.5 x 89.4 x 100
Operation temperature range	-20 … +55 °C
Approvals	CE cULus

flare TIMER-S / flare TIMER-A

- Spring clamp
- Width 6.2 mm
- 1 change-over contacts 6 A

Multi-function timer flare TIMER-S

- ON-delay and OFF-delay
- One shot and flashing

Timer flare TIMER-A

- ON-delay

Type	Part No.
flare TIMER-S-250250V6A	81.020.4100.0
flare TIMER-A/0100-S-250V6A	81.020.4101.0
flare TIMER-A/0060-S-250V6A	81.020.4102.0

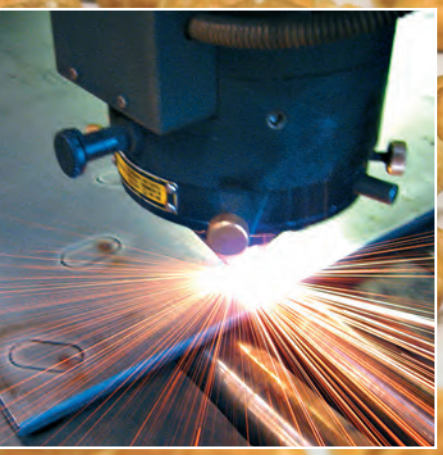
Technical data	
Input voltage range	24 V DC +25%/-20%
Time range flare TIMER-S	0.1 … 300 s
Time range flare TIMER A/0100	1 … 100 s
Time range flare TIMER A/0060	1 … 100 min
Number of change-over contacts	1
Maximum switching current	6 A
Mechanical life time	2 x 10^7
Electrical life time at 24 V DC / 2 A	0.6 x 10^6
Electrical life time at 230 V AC / 6 A	0.8 x 10^5
Isolation voltage of input/output	4 kV
Connection clamps	Spring clamp
Wire range fine-stranded/solid	0.25 - 1.5 mm² (AWG 24-16) / 0.25 - 2.5 mm² (AWG 24-14)
Degree of protection / Mounting rail	IP 20 / TH 35 (EN60715)
Dimensions (mm) W x H x D	6.2 x 89 x 70mm
Operation temperature range	0 … +50 °C
Approvals	

flare TIME FM15-1

- Multi-function timer
- High-contrast color display
- 15 time functions
- Front panel mounting 48 x 48 mm
- Wide temperature range
- 1 change-over contact 5 A

Type	Part No.	
flare TIME FM15-1 (24 V)	81.020.0020.0	
flare TIME FM15-1 (230 V)		81.020.0021.0

Technical data		
Input voltage range	4.5...30 V DC	85...264 V AC/DC
Time range	0.001 s … 999 h	
Time functions	15	
Number of change-over contacts	1	
Maximum switching current	5A	
Mechanical life time	10 x 10^6	
Electrical life time AC1	0.1 x 10^6	
Isolation voltage of input/output	2 kV	
Connection clamps	Screw clamp	
Wire range fine-stranded/solid	0.14 - 2,5 mm² (AWG 26–14)	
Degree of protection	IP20 / IP 66 (optional)	
Dimensions (mm) W x H x D	48 x 48 x 65	48 x 48 x 85,5
Operation temperature range	-10 … +55 °C	
Approvals		



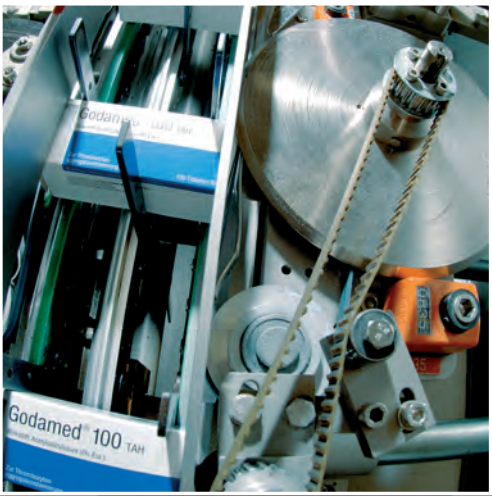
Measuring & control
precise and safe

Always live

Electronic measuring and monitoring relays for measuring input values such as current, voltage, 3-phases, cos phi, temperature. They carry out both simple and complex monitoring in machines and systems.

Features:

- The optimum device for every monitoring task
- Voltage, current, phase sequence, phase error, temperature or cos phi
- Broad temperature range
- Gold-plated switching contacts for maximum operational reliability



Benefits

- Upper and lower threshold separately adjustable
- 3 measuring ranges (single phase)
- Closed circuit or operating circuit principle
- Time delay 0 … 10 s adjustable
- Wide input voltage range 20.4 … 264 V AC/DC
- Width 22.5 mm
- Pluggable screw clamps
- Wide temperature range

Multi-functional measuring relay

economical and flexible

Measuring relays *flare* CONTROL

The product family ***flare*** CONTROL convinces by the universal use in industrial automation.

All functions required for measuring relays are combined in one device. Only one type for current and voltage measurement is necessary.

This simplifies engineering and reduces stock.

Features:

① 3 measuring ranges in one device

② Power LED

③ Adjustable for closed circuit or operating circuit principle
In additional also time delay for exceeding the threshold

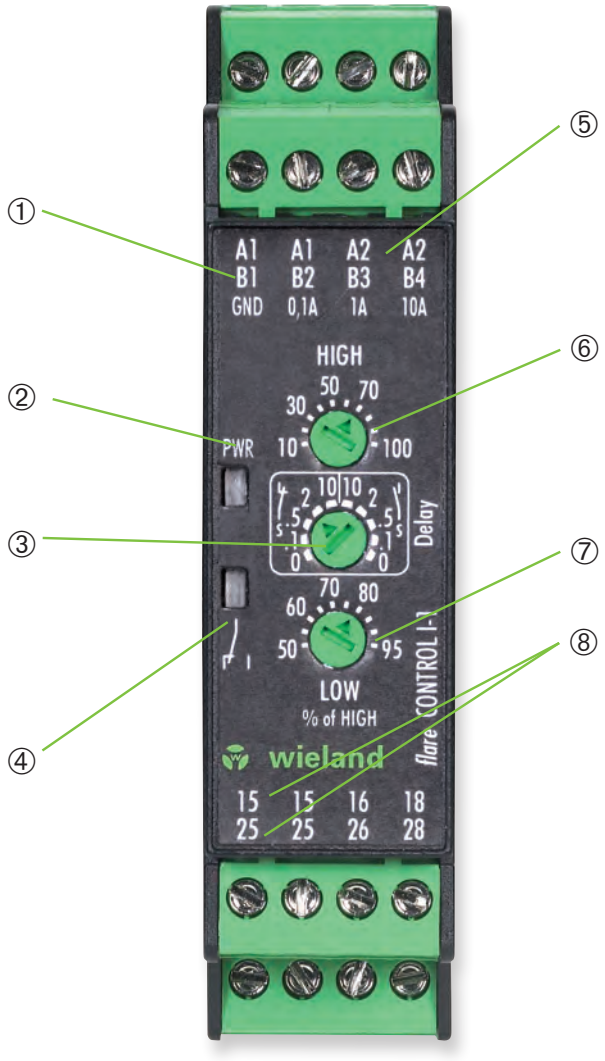
④ LED for exceedance of the threshold value

⑤ One terminal for supply voltage

⑥ Upper threshold in percent of measuring range

⑦ Lower threshold in percent of upper threshold

⑧ 2 change over contacts simultaneously switching, one change-over contact output per terminal



Measuring relay

flare CONTROL U-1-A

- Multi-function measuring relay
- Upper and lower threshold separately adjustable
- 3 measurement ranges (single phase)
- Signal shape DC and sinus
- Closed circuit or operating circuit principle
- Time delay at exceeding the threshold adjustable
- Wide input voltage range 20.4 … 264 V AC/DC
- Width 22.5 mm
- Pluggable screw clamps
- Wide temperature range
- 2 change-over contacts 5 A

Type	Part No.
flare CONTROL U-1-A	81.030.0100.0
Technical data	
Measuring ranges	5 / 50 / 300 V
Upper threshold	10...100 % of measuring range
Lower threshold	50 … 95 % of upper threshold
Signal shape	DC and sinus
Nominal frequency of measured signal at AC	45 … 400 Hz
Nominal power	app. 2 W / 4 VA
Supply voltage range	20.4 … 264 V AC/DC
Galvanic isolation toward supply	Yes
Functions	Closed circuit or operating circuit principle
Time delay at exceeding the threshold	0 / 0.1 / 0.5 / 2 / 10 s
Number of change-over contacts	2 (simultaneously switching)
Maximum switching current	5 A
Mechanical life time	20 x 10^6
Electrical life time AC1	0.1 x 10^6
Isolation voltage of input/output	2 kV
Connection clamps	Pluggable screw clamp
Wire range fine-stranded/solid	0.2 - 2.5 mm² (AWG 24–14)
Degree of protection / mounting rail	IP 20 / TH 35 (EN60715)
Dimensions (mm) W x H x D	22.5 x 96.5 x 114
Operation temperature range	-25 … +55 °C
Approvals	CE cULus

flare CONTROL I-1-A

- Multi-function measuring relay
- Upper and lower threshold separately adjustable
- 3 measuring ranges (single phase)
- Signal shape DC and sinus
- Closed circuit or operating circuit principle
- Time delay at exceeding the threshold adjustable
- Wide input voltage range 20,4 … 264 V AC/DC
- Width 22.5 mm
- Pluggable screw clamps
- Wide temperature range
- 2 change-over contacts 5 A

Type	Part No.
flare CONTROL I-1-A	81.030.0110.0
Technical data	
Measuring ranges	0,1 / 1 / 10 A
Upper threshold	10...100 % of measuring range
Lower threshold	50 … 95 % of upper threshold
Signal shape	DC and sinus
Nominal frequency of measured signal at AC	45 … 400 Hz
Nominal power	ca. 2 W / 4 VA
Supply voltage range	20.4 … 264 V AC/DC
Galvanic isolation toward supply	Yes
Functions	Closed circuit or operating circuit principle
Time delay at exceeding the threshold	0 / 0.1 / 0.,5 / 2 / 10 s
Number of change-over contacts	2 (simultaneously switching)
Maximum switching current	5 A
Mechanical life time	20 x 10^6
Electrical life time AC1	0.1 x 10^6
Isolation voltage of input/output	2 kV
Connection clamps	Pluggable screw clamp
Wire range fine-stranded/solid	0.2 - 2.5 mm² (AWG 24–14)
Degree of protection / mounting rail	IP 20 / TH 35 (EN60715)
Dimensions (mm) W x H x D	22.5 x 96.5 x 114
Operation temperature range	-25 … +55 °C
Approvals	CE cULus

Monitoring relay

flare CONTROL P3-L

- 3 phase monitoring relay
- Detection for loss of one or more phases
- Detection of wrong phase sequence
- Closed circuit principle
- Width 22.5 mm
- 1 change-over contact 6 A

Type	Part No.
flare CONTROL P3-L	81.030.0020.0
Technical data	
Supply voltage range	200 … 500 V AC
Detection time	max. 0.1 s
Number of change-over contacts	1
Maximum switching current	6 A
Mechanical life time	10 x 10^6
Electrical life time AC1	0.05 x 10^6
Connection clamps	Screw clamp
Wire range fine-stranded/solid	0.14 - 4 mm² (AWG 26–12)
Degree of protection / Mounting rail	IP 20 / TH 35 (EN60715)
Dimensions (mm) W x H x D	22.5 x 100 x 100
Operation temperature range	-20 … +60°C
Approvals	CE cULus

flare CONTROL P3-LTN

- 3 phase monitoring relay
- 3 or 4 wire monitoring
- Detection for loss of one or more phases
- Detection of wrong phase sequence
- Adjustable asymmetry trigger 3 wire
- Closed circuit principle
- Supports worldwide mains systems (adjustable)
- Width 22,5 mm
- 1 change-over contact 6 A

Type	Part No.
flare CONTROL P3-LTN	81.030.0021.0
Technical data	
Supply voltage 3 phase / 3 wire	380, 400, 415, 480 V AC
Supply voltage 3 phase / 4 wire	220, 230, 240, 277 V AC
Detection range for asymmetry	2 …22 %
Detection time at asymmetry	0.1 ... 30 s
Number of change-over contacts	1
Maximum switching current	6 A
Mechanical life time	10 x 10^6
Electrical life time AC1	0.05 x 10^6
Connection clamps	Screw clamp
Wire range fine-stranded/solid	0.14 - 4 mm² (AWG 26–12)
Degree of protection / Mounting rail	IP 20 / TH 35 (EN60715)
Dimensions (mm) W x H x D	22.5 x 100 x 100
Operation temperature range	-20 … +60 °C
Approvals	CE cULus

Selection of our catalogs

0600.1 "***gesis*** CON GST 18
Electrical installation of buildings via plug & play"

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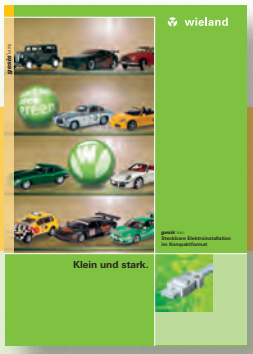

0640.1 "*gesis* MINI
the pluggable electrical installation
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0860.1 „*safety*
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0403.1 "Safe solution for
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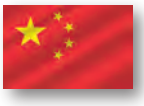

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- Safety
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  - Remote maintenance via VPN industrial router and VPN service portal
  - Industrial Ethernet switches
  - PLC and I/O systems, standard and increased environmental conditions
- Interface
  - Power supply units
  - Overvoltage protection
  - Coupling relays, semiconductor switches
  - Timer relays, measuring and monitoring relays
  - Analog coupling and converter modules
  - Passive interfaces

Solutions for field applications

- Decentralized installation and automation technology
  - Electrical installation for wind tower
  - Fieldbus interfaces and motor starters
- Connectors for industrial applications
  - Rectangular and round connectors
  - Aluminium or plastic housings
  - Degree of protection up to IP68
  - Current-carrying capacity up to 100 A
  - Connectors for hazardous areas
  - Modular, application-specific technology

PC board terminals and connectors

- Screw or spring clamp connection technology
- Spacings: 3.5 mm to 10.16 mm
- Reflow or wave soldering process

Building and installation technology

- Building installation systems
  - Main power supply connectors IP20/IP65 ... IP68
  - Bus connectors
  - Low-voltage connectors
  - Power distribution system with flat cables
  - Distribution systems
  - Bus systems in KNX, LON and wireless technology
  - DIN rail terminal blocks for electrical installations
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