



gesis® IP+ Heavy Duty
Pluggable Electrical Solutions
IP 65 to IP 68

Catalogue 2009

Reliable Connections



Pluggable heavy duty power distribution

Connectors

The connectors can be assembled on site. Among other functions they serve as an incoming power system. Connectors with male and female components are delivered complete with strain relief and enable the connection of all common cable types. Depending on the requirements the connectors are available with spring clamp or screw clamp technology.

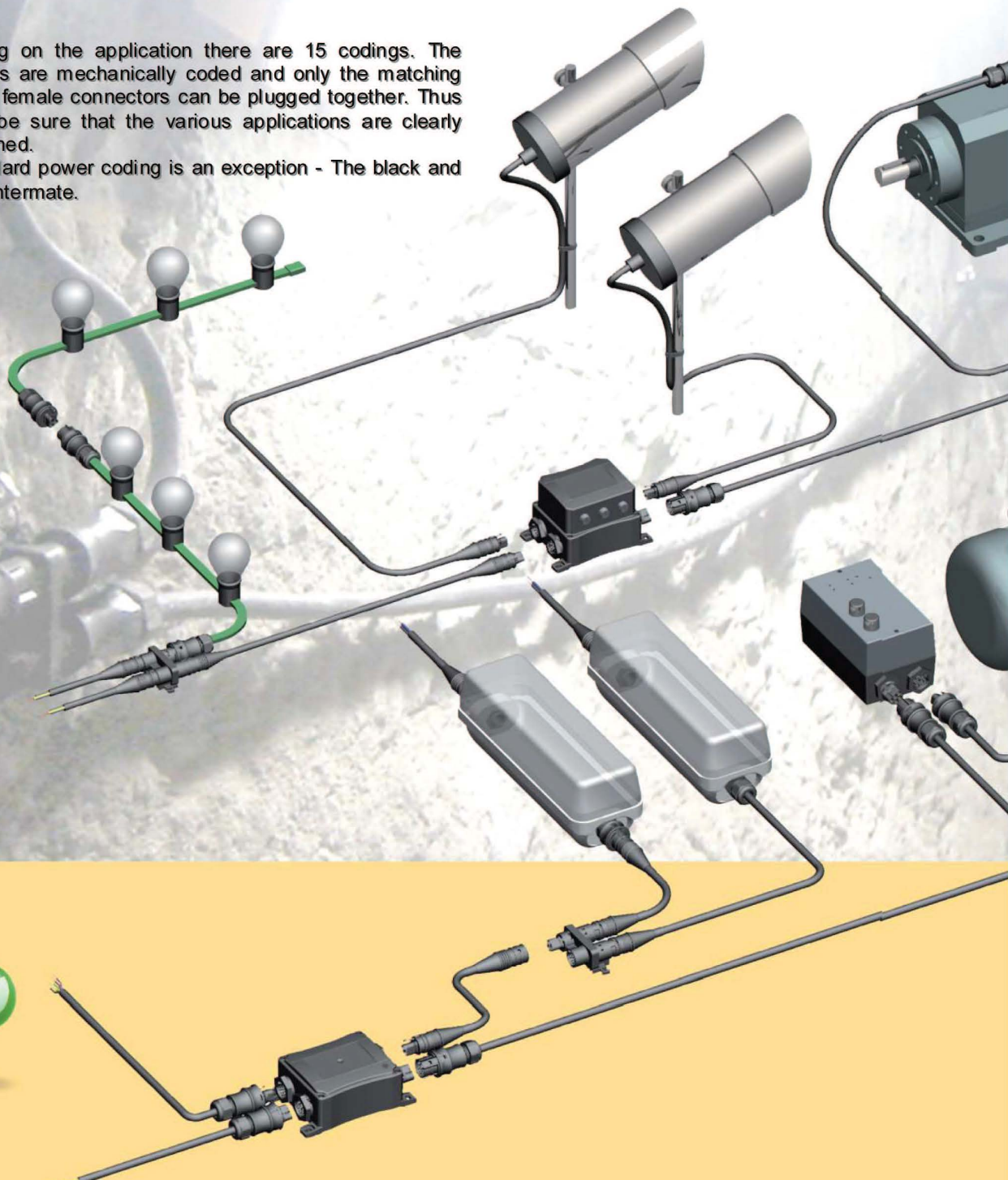
Distribution Boxes

The pre-assembled, pre-wired, plug in distribution boxes are incorporated in the installation and thus enable a tap-off to the consumer devices. The distribution boxes are available with or without mounting flanges, and are available in custom configurations.

Coding

Depending on the application there are 15 codings. The connectors are mechanically coded and only the matching male and female connectors can be plugged together. Thus you can be sure that the various applications are clearly distinguished.

The standard power coding is an exception - The black and grey will intermate.



gesis[®] IP+ Heavy Duty

For electrical installations in severe conditions

600VAC / 20A CSA approved

IP 66/68 rated

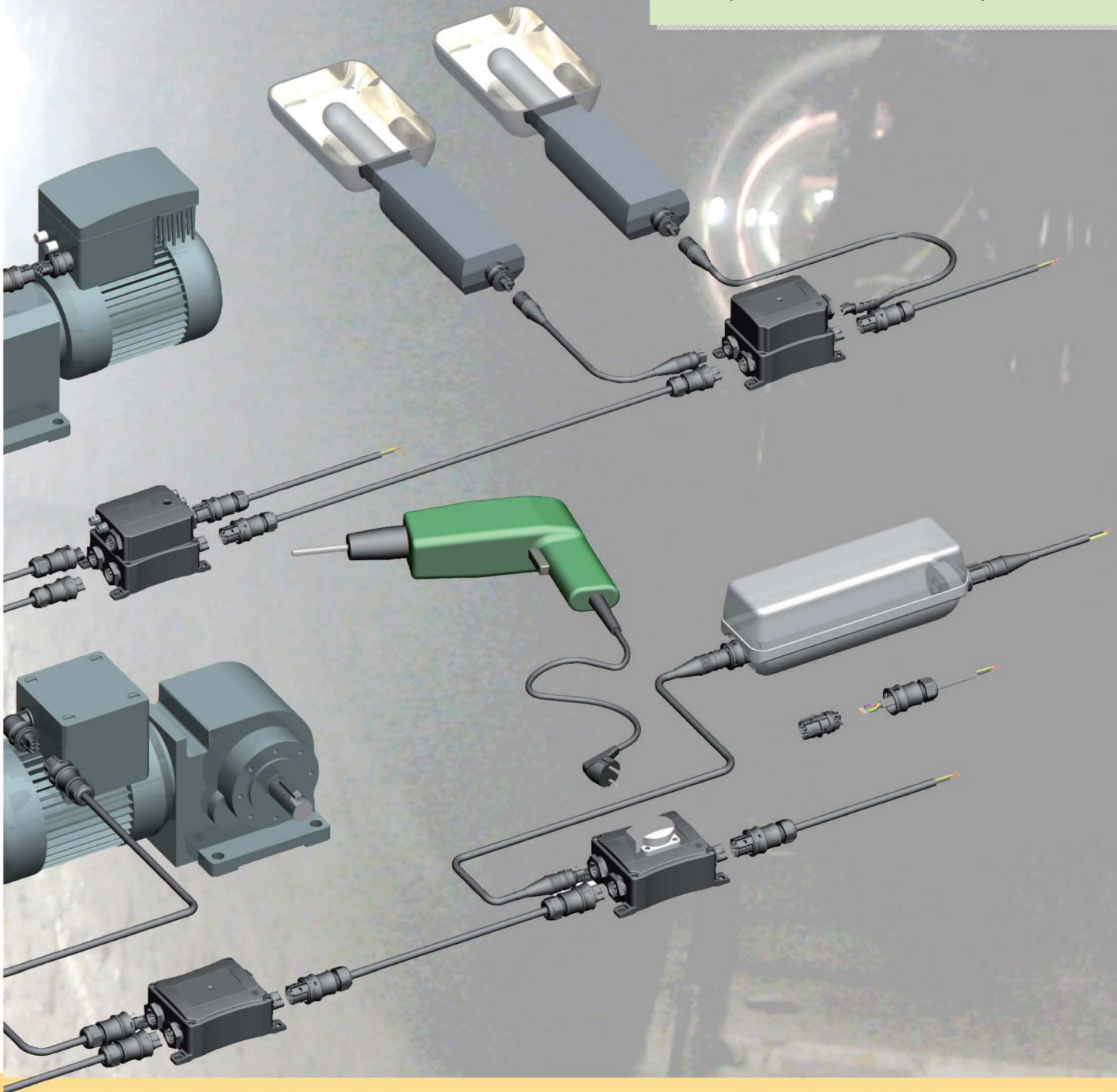
All components are reusable

Coding system using coloured inserts

Double locking system

Class 1 Zone 2 Version available

Suitable for Current Interruption applications as per CSA C22.2 No 182.3, up to 350VAC



Consumer devices can be connected:

Quickly

Clearly arranged

Touch-proof (both male and female components)

Under tough conditions

RST Heavy Duty RST HD



2 - 5 pole connectors with protective circular cover
 Screw connections for solid or stranded cables
 Maximum wire size: 12AWG - 600VAC
 Cable Ø range: 6 - 10 mm and 10 - 14 mm
 600VAC / 20A CSA / UL approved
 IP 66/68 rated / NEMA 6P
 All components are reusable
 Coding system using colored inserts
 Double locking system

RST 20iHD Female Cable Mount

RST 20iHD Male Cable Mount

UL ratings	CSA ratings	Dimensions (mm) W x H x D	Wire strip length	22-12 AWG	20-12 AWG	42 x 42 x 80	V	A	22-12 AWG	20-12 AWG	38 x 38 x 80	V	A
							600v	20				600v	20
							600v	20				600v	20
								8mm					8mm

Approvals



Description	Type	Part No.	Part No.	Type	Part No.	Part No.
	Female			Male		
	Cable Diameter	6-10 mm	10-14mm	Cable Diameter	6-10 mm	10-14mm
2 pole	Black ●	34.210.2010.1	34.210.2014.1		34.210.2110.1	34.210.2114.1
	Light Gray ○	34.210.2010.0	34.210.2014.0		34.210.2110.0	34.210.2114.0
	Dark Gray					
	Turquoise					
	Brown ●	34.210.2010.4	34.210.2014.4		34.210.2110.4	34.210.2114.4
	Green					
3 pole	Black ●	34.210.3010.1	34.210.3014.1		34.210.3110.1	34.210.3114.1
	Light Gray ○	34.210.3010.0	34.210.3014.0		34.210.3110.0	34.210.3114.0
	Dark Gray ●		34.210.3414.3			34.210.3514.3
	Turquoise					
	Brown					
	Green ●	34.210.3010.7	34.210.3014.7		34.210.3110.7	34.210.3114.7
4 pole	Black ●	34.210.4010.1	34.210.4014.1		34.210.4110.1	34.210.4114.1
	Light Gray ○	34.210.4010.0	34.210.4014.0		34.210.4110.0	34.210.4114.0
	Dark Gray					
	Turquoise					
	Brown					
	Green					
5 pole	Black ●	34.210.5010.1	34.210.5014.1		34.210.5110.1	34.210.5114.1
	Light Gray ○	34.210.5010.0	34.210.5014.0		34.210.5110.0	34.210.5114.0
	Dark Gray ●		34.210.5414.3			34.210.5514.3
	Turquoise ●	34.210.5010.6	34.210.5014.6		34.210.5110.6	34.210.5114.6
	Brown ●	34.210.5010.4	34.210.5014.4		34.210.5110.4	34.210.5114.4
	Green					
Note	Black and Light Gray will intermate					
	Other configurations available					

Subject to change without notice

RST Heavy Duty RST HD



2 - 5 pole connectors with protective circular cover
 Screw connections for solid or stranded cables
 Maximum wire size: 12AWG - 600VAC
 Cable Ø range: 13 - 16 mm
 600VAC / 20A CSA / UL approved
 IP 66/68 rated / NEMA 6P
 All components are reusable
 Coding system using colored inserts
 Double locking system

RST 20iHD Female Cable Mount

RST 20iHD Male Cable Mount

UL ratings	CSA ratings	Dimensions (mm): W x H x D	Wire strip length	22-12 AWG	20-12 AWG	42 x 42 x 120	V	A	22-12 AWG	20-12 AWG	38 x 38 x 120	V	A
							600v	20				600v	20
							600v	8mm				600v	8mm



Description		Type	Part No.	Type	Part No.
		Female		Male	
		Cable Diameter	13-16mm	Cable Diameter	13-16mm
2 Pole	Black ●		34.210.2018.1		34.210.2118.1
	Light Gray ○		34.210.2018.0		34.210.2118.0
	Dark Gray				
	Turquoise				
	Brown ●		34.210.2018.4		34.210.2118.4
	Green				
3 Pole	Black ●		34.210.3018.1		34.210.3118.1
	Light Gray ○		34.210.3018.0		34.210.3118.0
	Dark Gray				
	Turquoise				
	Brown				
	Green ●		34.210.3018.7		34.210.3118.7
4 Pole	Black ●		34.210.4018.1		34.210.4118.1
	Light Gray ○		34.210.4018.0		34.210.4118.0
	Dark Gray				
	Turquoise				
	Brown				
	Green				
5 Pole	Black ●		34.210.5018.1		34.210.5118.1
	Light Gray ○		34.210.5018.0		34.210.5118.0
	Dark Gray				
	Turquoise ●		34.210.5018.6		34.210.5118.6
	Brown ●		34.210.5018.4		34.210.5118.4
	Green				
Note	Black and Light Gray will intermate				
	Other configurations available				

RST Heavy Duty RST HD



2 - 5 pole connectors with protective circular cover
 Screw connections for solid or stranded cables
 Maximum wire size: 12AWG - 600VAC
 Range: M16 - M25
 600VAC / 20A CSA / UL approved
 IP 66/68 rated / NEMA 6P
 All components are reusable
 Coding system using colored inserts
 Double locking system

RST 20iHD Female Panel Mount

RST 20iHD Male Panel Mount

UL ratings	CSA ratings	Dimensions (mm): W x H x D	Wire strip length	22-12 AWG	20-12 AWG	42 x 42 x 120	V	A	22-12 AWG	20-12 AWG	38 x 38 x 120	V	A
							600v	20				600v	20
							600v	20				600v	20
								8mm					8mm

Approvals



Description		Type	Part No.			Type	Part No.		
		Female				Male			
			M16	M20	M25	M16	M20	M25	
2 Pole	Black ●	34.210.2204.1	34.210.2202.1	34.210.2200.1	34.210.2214.1	34.210.2212.1	34.210.2210.1		
	Light Gray ○	34.210.2204.0	34.210.2202.0	34.210.2200.0	34.210.2214.0	34.210.2212.0	34.210.2210.0		
	Dark Gray								
	Turquoise								
	Brown ●	34.210.2204.4	34.210.2202.4	34.210.2200.4	34.210.2214.4	34.210.2212.4	34.210.2210.4		
	Green								
3 Pole	Black ●	34.210.3204.1	34.210.3202.1	34.210.3200.1	34.210.3214.1	34.210.3212.1	34.210.3210.1		
	Light Gray ○	34.210.3204.0	34.210.3202.0	34.210.3200.0	34.210.3214.0	34.210.3212.0	34.210.3210.0		
	Dark Gray								
	Turquoise								
	Brown ●								
	Green ●	34.210.3204.7	34.210.3202.7	34.210.3200.7	34.210.3214.7	34.210.3212.7	34.210.3210.7		
4 Pole	Black ●	34.210.4204.1	34.210.4202.1	34.210.4200.1	34.210.4214.1	34.210.4212.1	34.210.4210.1		
	Light Gray ○	34.210.4204.0	34.210.4202.0	34.210.4200.0	34.210.4214.0	34.210.4212.0	34.210.4210.0		
	Dark Gray								
	Turquoise								
	Brown ●								
	Green								
5 Pole	Black ●	34.210.5204.1	34.210.5202.1	34.210.5200.1	34.210.5214.1	34.210.5212.1	34.210.5210.1		
	Light Gray ○	34.210.5204.0	34.210.5202.0	34.210.5200.0	34.210.5214.0	34.210.5212.0	34.210.5210.0		
	Dark Gray								
	Turquoise ●	34.210.5204.6	34.210.5202.6	34.210.5200.6	34.210.5214.6	34.210.5212.6	34.210.5210.6		
	Brown ●	34.210.5204.4	34.210.5202.4	34.210.5200.4	34.210.5214.4	34.210.5212.4	34.210.5210.4		
	Green								
Note	Black and Light Gray will intermate								
	Other configurations available								

Subject to change without notice

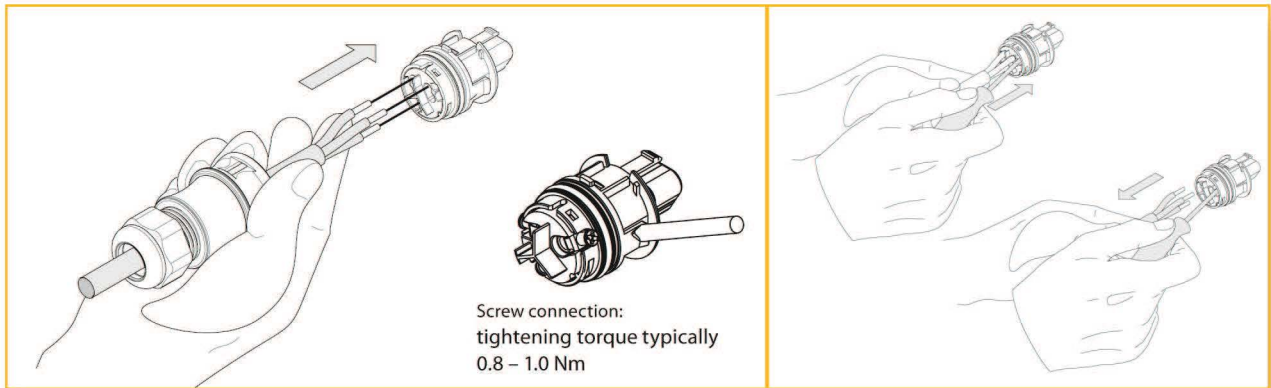


Mounting instructions RST20i2...i3

Connector mounting

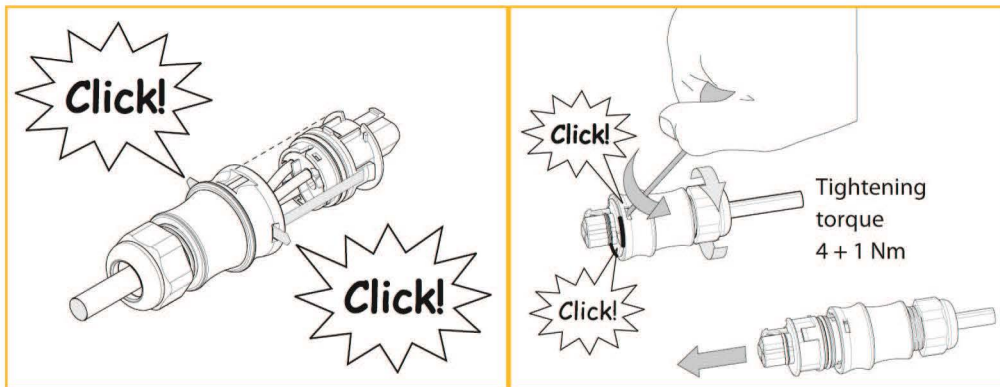
Connect the wires ...

... and disconnect them



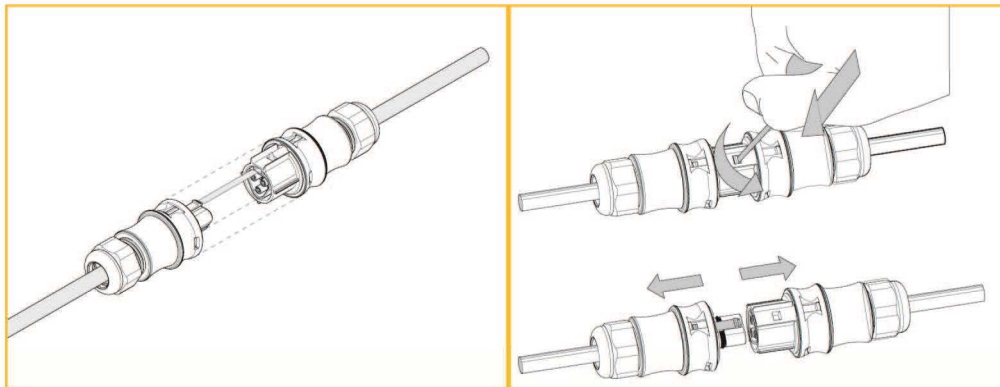
Close the connector ...

... and open it



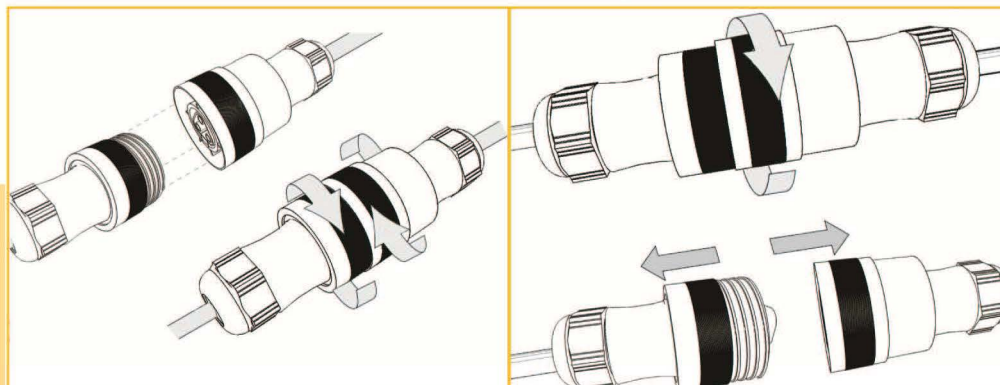
Lock the housing ...

... and unlock it



Couple the connectors...

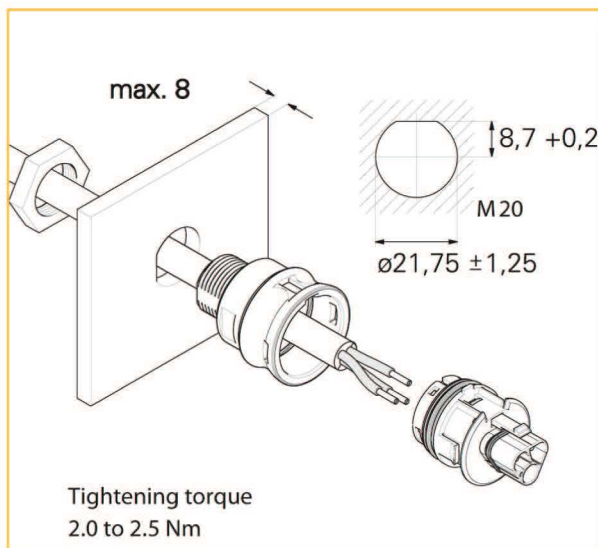
...and uncouple the connectors



Housing installation

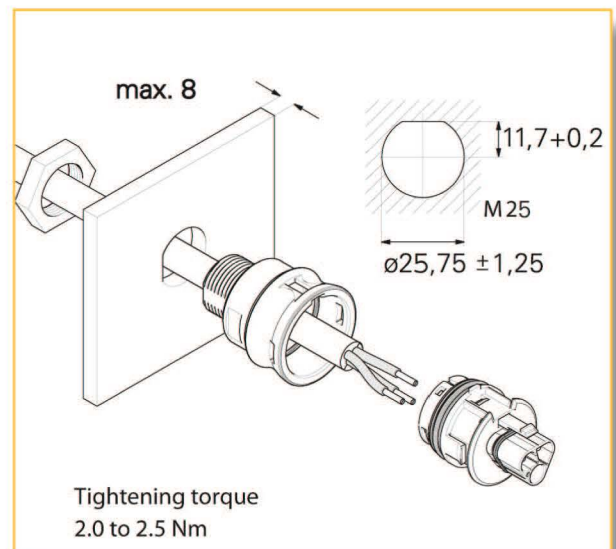
Installation of a standard system,
for M 20 feed-through

Dimensions in mm



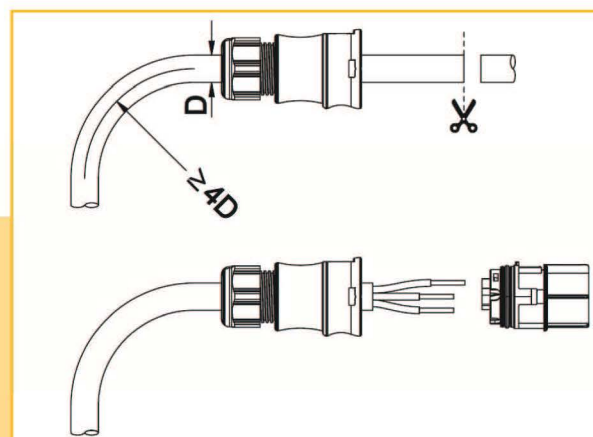
Installation of a standard system,
for M 25 feed-through

Dimensions in mm



Note:

Effectiveness of the protection against twisting can only be guaranteed when the lower tolerance limit is ensured for the diameter of the hole.



Bending radius (for conductors)
Note the minimum bending radius for
conductors $> 2.5 \text{ mm}^2$. Pull forces on the
contact points can be avoided by proceeding
as follows:

- Bend the wire as required
- Cut the wire to length
- Strip the cable and wires



Technical data RST20i2...i5

	RST 20i2/i3	RST 25i3	RST 20i4/i5	RST 25i5
Rated voltage	600 V	600 V	600 V	600 V
Rated current	20 A	25 A	20 A	25 A (L, N) 1~ Contacts (1, 2) 10 A
Number of poles	2 or 3 pole	3 pole	4 or 5 pole	5 pole
Ambient operating temperature under full load	Connectors 55° C Distr. unit 40° C	55° C	55° C	55° C

Temperature range: -40° C to +100° C

Material: Contact parts: brass, surface-plated
Housing parts: thermoplastic material PA 66, halogen-free, V2
Sealing material: NBR

Regulations: DIN VDE 0606 T200; DIN EN 61984 (VDE 0627); VDE 0110
IEC 60999: UL 2238; CSA: C22.2 No.182.2-M1987;
LR Type Approval System

Pollution degree: 3 (when plugged in)

Mating cycles: according to VDE 0606-200
100 times without load and 50 times at rated load ($\cos \varphi = 0.6$)

Approvals: VDE; UL*; CSA*; LR; GL; DNV; ATEX
* without pre-assembled cables in shrinking tube technology

Degree of protection: IP 65, IP 66, IP 67 and IP 68 (3 m; 2 hours) NEMA 6P

IK code: IK7

Glow-wire test
850° C, 30 s: For connectors, distribution units, cable assemblies and device connectors

Coding: Mechanical coding symbolized by color code. Gray and black with the same mechanical coding. Other codings are optional.

Note: Protection against shock generally guaranteed even when disconnected. Ground conductor leading. Connection to the live cable must be with a female connector according to the regulations. It is therefore not possible to have a ring circuit arrangement. Only pluggable in the correct pole configuration; 1 pole cannot be connected. Contacts protected against strain on the cable. All components can be interlocked.



DIN VDE 0606-200 requires the use of a locking device. Dangerous mismatching with installation connector systems of other suppliers is not automatically excluded by compliance with DIN VDE 0606 T200. Installation connectors do not replace national connector/outlet systems for home applications.

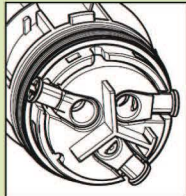
Wire preparation

RST 2/3 pole

Insulation strip lengths and ferrules

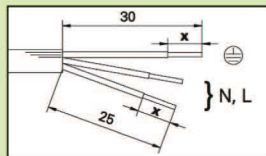
all lengths indicated in mm

Screw connection:



Screwdriver
PZ1
Rated torque:
0.8 – 1.0 Nm

Connector
6 – 10 mm
10 – 14 mm



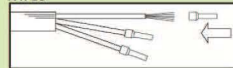
Insulation strip length $X =$

Conductor cross section	0.75 mm ²	1.0 mm ²	1.5 mm ²	2.5 mm ²	4 mm ²	AWG 12–18
solid	8	8	8	8	8	–
fine-stranded	8	8	8	8	8	–
stranded	8	8	8	8	8	8
ultrasonically compressed	8	8	8	8	8	–

Spring clamp
connection:

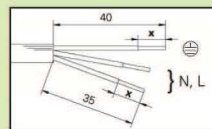


Fine-stranded and stranded
wires



Ferrules required!

Connector



Insulation strip length $X =$

Conductor cross section	0.5 mm ²	0.75 mm ²	1 mm ²	1.5 mm ²	2.5 mm ²
solid	14.5 + 1	14.5 + 1	14.5 + 1	14.5 + 1	14.5 + 1
fine-stranded	12.0 + 1	13.0 + 1	13.0 + 1	13.0 + 1	
Ferrules according to DIN	46228-Ø0.5-10	46228-Ø0.75-12	46228-Ø1.0-12	46228-Ø1.5-12	
stranded		13.0 + 1	13.0 + 1	13.0 + 1	
Ferrules according to DIN		46228-Ø0.75-12	46228-Ø1.0-12	46228-Ø1.5-12	
ultrasonically compressed				14.5 + 1	14.5 + 1

RST 4/5 pole

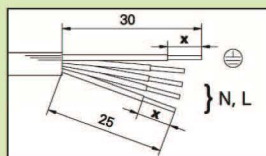
all lengths indicated in mm

Screw connection:



Screwdriver
PZ1
Rated torque:
0.5 – 0.7 Nm

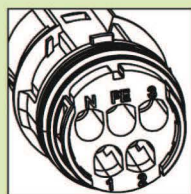
Connector
6 – 10 mm
10 – 14 mm



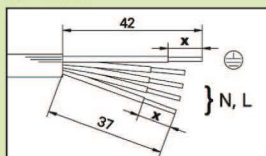
Insulation strip length $X =$

Conductor cross section	0.75 mm ²	1.0 mm ²	1.5 mm ²	2.5 mm ²	4 mm ²	AWG 12–18
solid	8	8	8	8	8	–
fine-stranded	8	8	8	8	8	–
stranded	8	8	8	8	8	8
ultrasonically compressed	8	8	8	8	8	–

Crimp connection:



Connector
6 – 10 mm
10 – 14 mm



Insulation strip length $X =$

Conductor cross section	0.75 mm ²	1.0 mm ²	1.5 mm ²	2.5 mm ²	4 mm ²
fine-stranded	7.0 + 1	7.0 + 1	7.0 + 1	7.0 + 1	7.0 + 1

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Industrial technology

Solutions for the control cabinet

- DIN rail terminal blocks
 - Screw, spring clamp or IDC connection technology
 - Wire cross sections up to 240 mm²
 - Numerous special functions
 - Software solutions interfacing to CAE systems
- Safety
 - Safety sensors
 - Safety relays
 - Modular safety systems with fieldbus link
- PLC and fieldbus components
 - Standard applications in IP 20
 - Increased environmental conditions with railroad and ship approvals
- Interface
 - Coupling relays, semiconductor switches
 - Measuring and monitoring relays
 - Timer and switching relays
 - Analog modules
 - Passive interfaces
 - Power supply units
 - Overvoltage protection

Solutions for field applications

- Remote automation technology
 - Power distribution
 - Fieldbus interfaces and motor starters
- Connectors for industrial applications
 - Square and round connectors
 - Aluminum or plastic housings
 - Degree of protection up to IP 68
 - 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 IP 20/IP 65 ... IP 68
 - Bus connectors
 - Combined connectors
 - Low-voltage connectors
 - Power distribution system with flat cables
 - Distribution systems
 - Bus systems in KNX, LON and radio technology
 - DIN rail terminal blocks for electrical installations
 - Overvoltage protection

**contacts
are
green.**

Product Range

34.205.0161.0