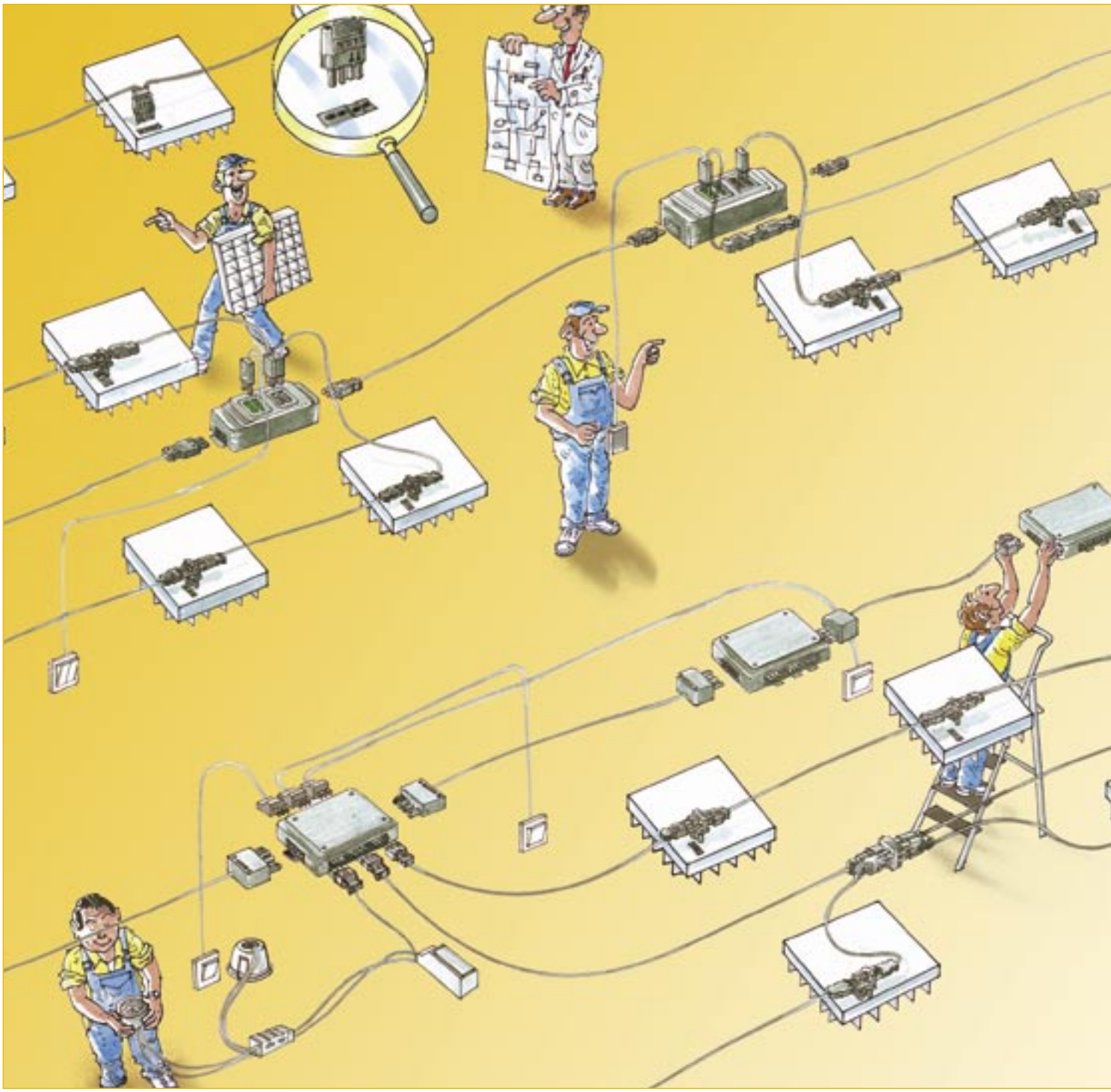

wieland

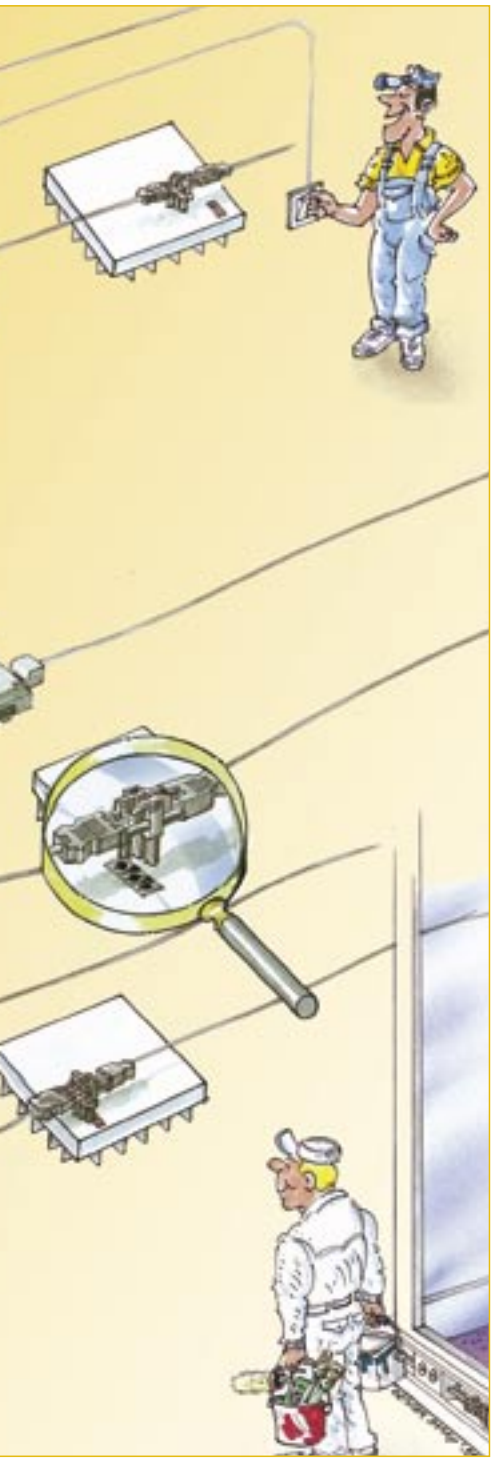
Technical data

Technical data

Handling



gesis system



■ The principle of any electrical installation is: power must be supplied by a public power supply, a tranformer or a generator, it must be distributed within the building and transferred to the electrical consumer devices. This system not only requires power lines, but also connections, connection elements and distribution devices.

■ With ***gesis***, Wieland offers a complete connector system. It enables you to implement complex electrical installation systems with only a few components. By using ***gesis*** you can complete 2 to 6 pole installation systems to power lighting fixtures, outlets and other consumer devices. Signal lines and even EIB bus lines are layed out in the same easy way. The consistency of the ***gesis*** solution is demonstrated by the fact that even pluggable EIB switching devices belong to the ***gesis*** range.

■ Due to its compact design ***gesis*** can be used in all areas of electrical installation. Many manufacturers have already equipped their components with pluggable connectors, which are simple to install and do not require costly and time-consuming wiring.

■ All ***gesis*** elements are pre-assembled and simply have to be plugged together. The electrical installation systems and even signal and bus systems can therefore be implemented in a pluggable design leading from the junction box to the consumer devices. The system is time and cost-effective and guarantees security, as mismating is impossible

■ **This brochure will introduce the *gesis* system to you. Once you are familiar with this introduction, you will be able to install all *gesis*-connections on your own.**
For your personal safety please carefully follow all instructions and warning notes of this catalog.

■ Have fun with ***gesis***. In case of any further questions on ***gesis***, please contact our support under:

Phone +49 (951) 9324-996
or
www.gesis.com

gesis safety

- ***gesis*** meets all the requirements of standard DIN VDE 0628 and starting in the 4th quarter of 2005 also new standard DIN VDE 0606 T200.
- ***gesis*** is designed to prevent all typical error sources within electrical installations from the onset:

No "mismating"

- In practice, mismating can easily cause failure of a complete installation system. Mismating is impossible with our pre-assembled ***gesis*** components.
- All connectors are mechanically coded meaning that only the matching male and female connectors can be plugged together, in the correct pole configuration. You can therefore be sure that corrective action rewiring caused by wrong connections will not be required.
- The connector colors help you to find the matching connections, as the female and male connector mates have the same color.

Application	Coding	Color	Coding
	Female connector		**Male connector**
Mains with ground	Code 1: N PE L	black white	Code 1: L PE N
	Code 2: N PE L	dark gray	Code 2: L PE N
	Code 3: N PE L	light red	Code 3: L PE N
Switching applications	Code 4: 3 2 1	brown	Code 4: 1 2 3

Safe connections

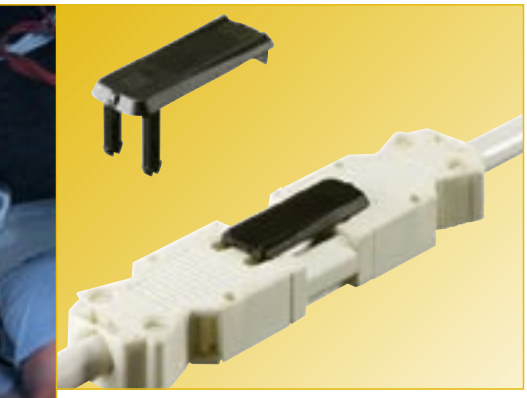
■ ***gesis***-components meet all the requirements of standard DIN VDE 0628/DIN VDE 0606 T200, meaning that any unintentional disconnect of the connections is impossible. Locking devices make sure that all ***gesis*** connectors are protected against disconnect after installation and connection. The contact is maintained even when the pull-out forces are increased.

Touch-safe

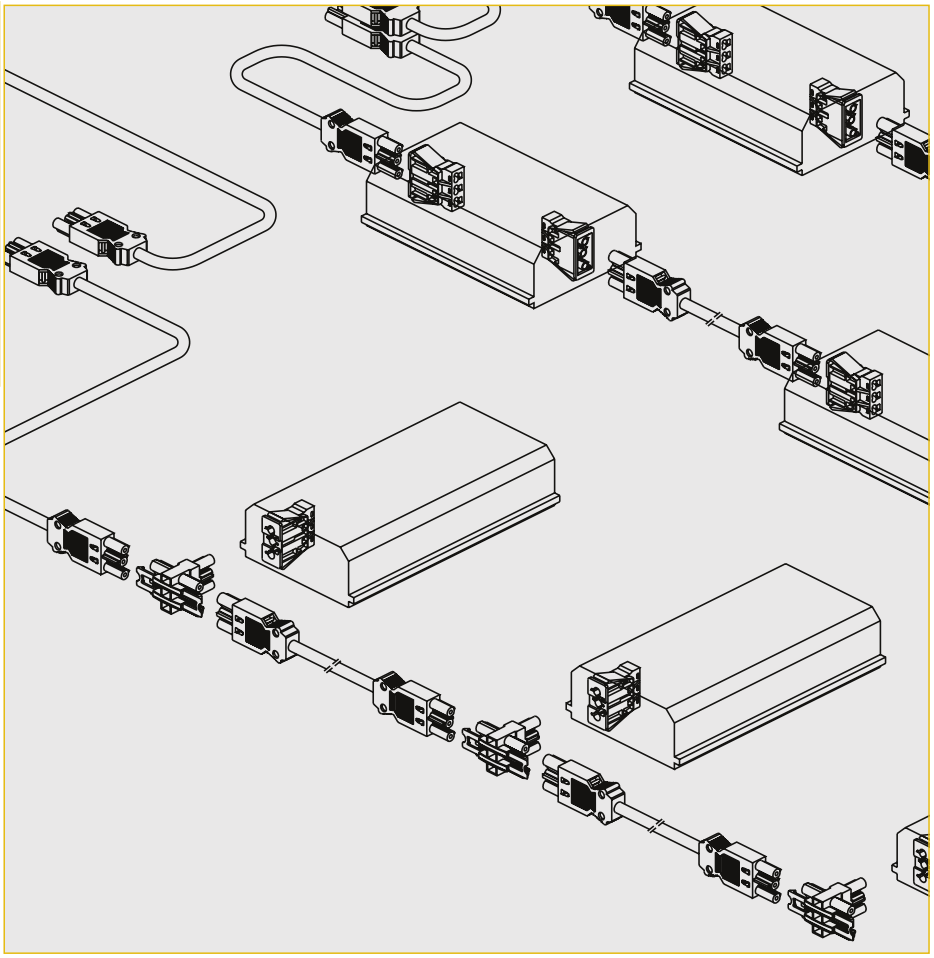
■ Electrical installations always require careful handling. ***gesis*** guards against any dangers caused by live wires and open cables. All current-carrying contacts are enclosed by the housing and cannot be touched under normal handling conditions (except for the cables with connector and open end!).

Leading ground conductor

■ A leading ground conductor in the ***gesis*** connections provides safety in all power lines. It is connected and disconnected first making it possible that these connections can be connected and disconnected under load as per VDE 0625.



■ Many ***gesis*** components are equipped with integrated locking devices which audibly latch when the connectors are plugged together. Some variants require manual locking. In section "Assembly" on page 348 you will find all relevant details.



Supply/connection on site

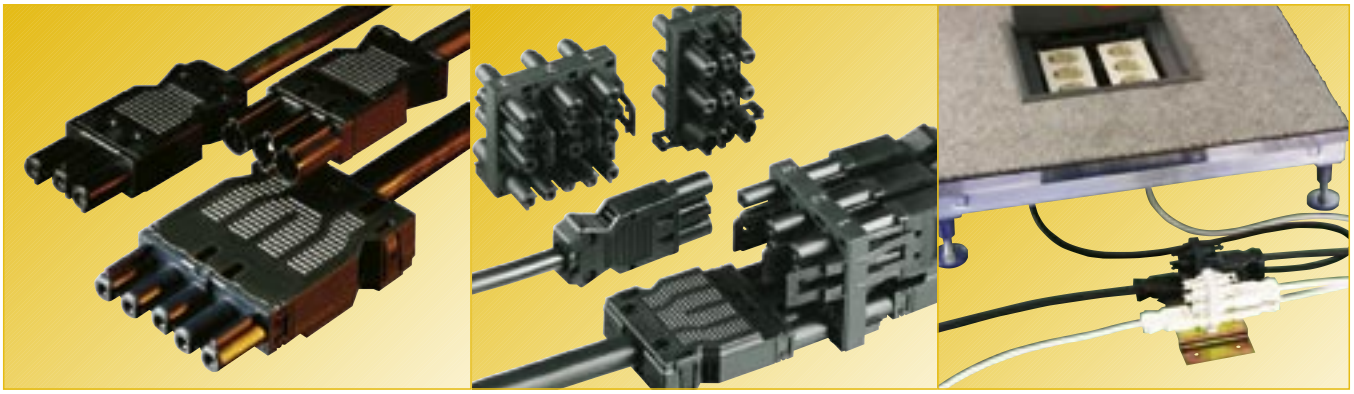
■ The system provides 2 to 6 pole connectors for initial installations which can be assembled on site as required.
Only electricians are allowed to terminate the female and male connectors to the cables.

Distribution

■ Power and signals are distributed through pre-assembled blocks with one input and several outputs in 2, 3, 4 and 5 pole configurations.
A system distribution device with a 5 pole input and a 3 pole output is available specifically for the distribution of three-phase power systems to up to three alternating power lines.

Wiring

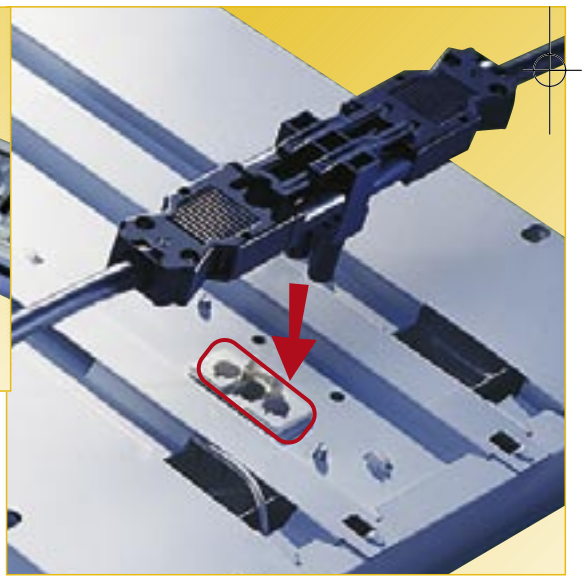
■ To connect various consumer devices such as lighting fixtures, outlets and fans, 2 to 6 pole cables preassembled with female and male connectors are used.



Connection

■ ***gesis*** connections are state-of-the-art in many function elements. Original hard wired devices can be easily modified with female and male connectors, creating a flexible, pluggable device.
Later installations of that kind must only be performed by qualified electricians.

The system components for networks are designed for conductor cross sections up to 2.5 mm^2.
We supply cables in various lengths for economic modifications of this type of material consumption.



Assembly

■ As with all electrical components, proper procedure stipulates that any actions which might require contact with live parts must be performed by aqualified electrician.
Please therefore be warned that

initial installations and terminations of female and male connectors to cables must be performed by electricians. Also, all *gesis* flat cable adapters must be installed by qualified electricians.

■ Installations and later modifications to them must be completed by a qualified electrician.

■ Do not modify any connectors or cables!

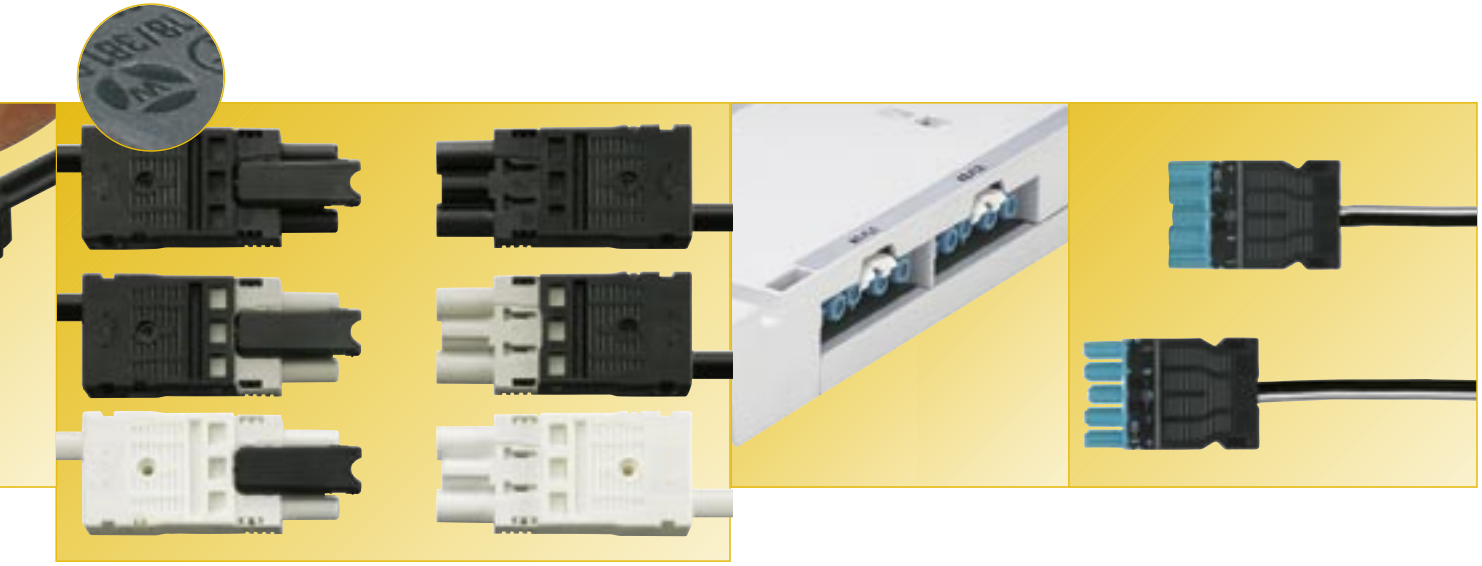
■ Lay-out and connection of bus and power lines and switching devices must be completed in accordance with the appropriate national regulations.

■ Relevant standards and procedures for security and prevention of accidents must be followed.

What to consider

- After reading the introduction to our ***gesis*** system, you can implement all ***gesis*** connections on your own.
- **Do not use any components from other manufacturers!**
- Never disconnect ***gesis*** connectors by force. The locking device must be opened with a screwdriver. The connections can then be separated easily. Notes on how to disconnect the various connection types are provided on the following page.
- Please check the outputs of the EIB modules and make sure that the male connectors have the same color as the female connectors which are integrated in the EIB modules.

according to regulation DIN VDE 0628 or DIN VDE 0606 T200 in order to guarantee permanent and proper function. The locking devices must audibly latch when the two halves are connected.
All Wieland connectors are supplied with integrated locking devices. The locking devices are also available as accessories.



- The connectors are mechanically coded to prevent mismating. Mains connectors in black, white and coral red have the same coding (code 1) and can therefore be plugged together. Connectors of other colors can only be plugged together with ***gesis*** components of the same colors.
- EIB module supply is always indicated by a gray housing with matching 5 pole black and white connectors.
- All connections must be locked

What to consider

■ **The following configurations require manual locking:**

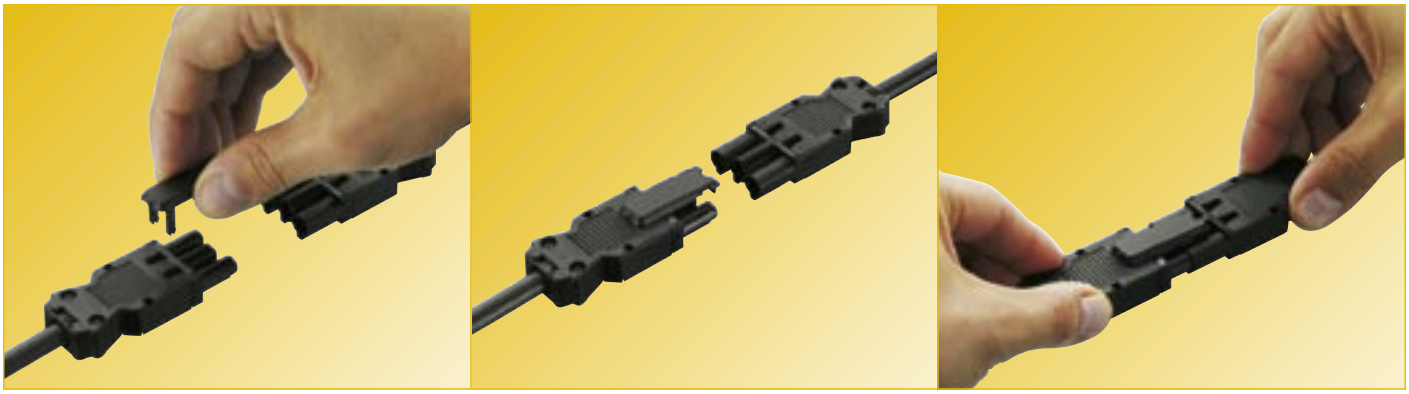
■ **All cable-to-cable couplings.**
Male and female connectors which are terminated to cable ends. If you want to connect two cables via male/female connectors, you will have to fix a locking device to one of the connectors before connecting the parts.
(see the picture at right).

■ **Connections with flat cable adapters.**

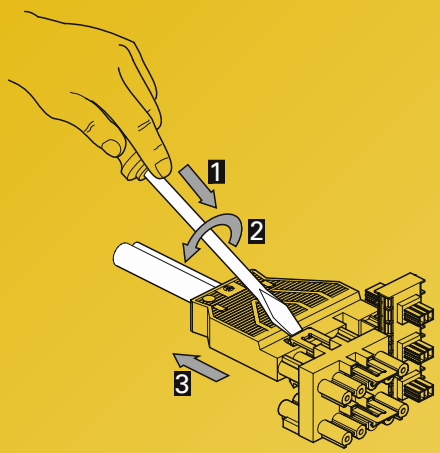
■ **EIB modules**, if you want to supply without distribution device. In this case, you will have to fix a locking device to the female connector which is connected to the power supply of the EIB module.

■ **NOTE:**
If you find a distribution module connector without a locking device, please inform your supplier.

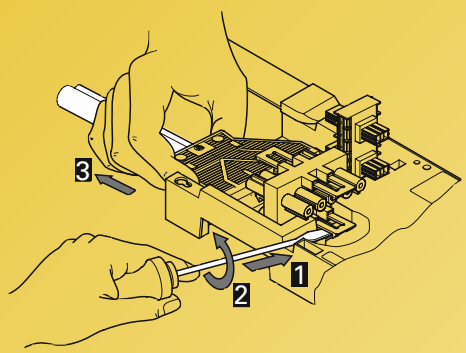
■ Always configure the line to prevent mechanical damage to the connector and the cables.



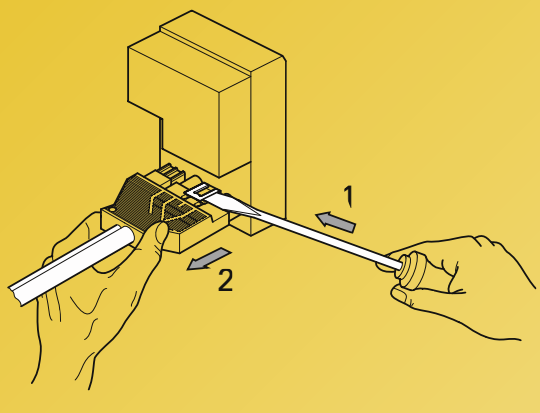
How to disconnect EIB devices and connectors



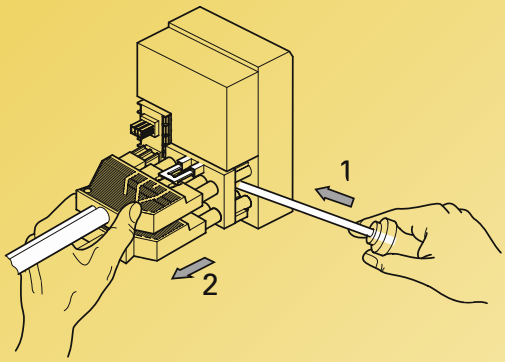
Unlatching connector and distribution block



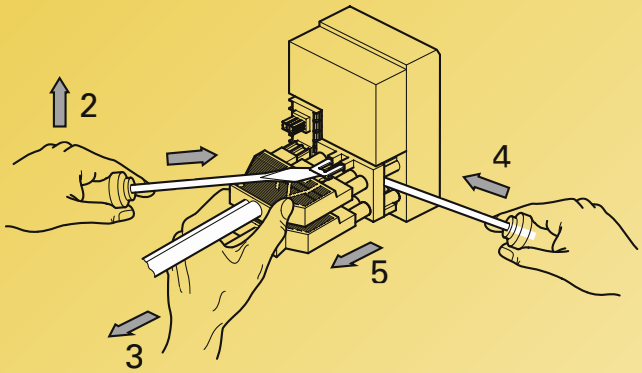
Unlatching supply connectors
of ***gesis*** EIB V switching devices



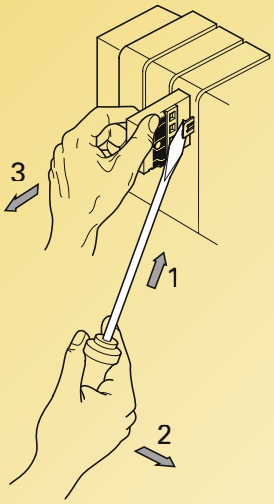
Unlatching a single supply connector
of ***gesis*** EIB M2 switching devices



Unlatching a distribution block of
gesis EIB M2 switching devices (without
disconnecting the connection with following
gesis EIB M2 modules)



Unlatching a distribution block of
gesis EIB M2 switching devices and
disconnecting all connectors



Unlatching output
connectors of
gesis EIB switching
devices

Technical data

Rated voltage: 250 V~, 250/400 V~

Rated current: 16 A
20 A on request

Number of poles: 3 pole (L, N, E) to 5 pole (L1, L2, L3, N, PE)

Regulations: DIN VDE 0628 for all types
DIN VDE 0606 T200
VDE 0625, DIN EN 60320;
IEC 60320 3 pole latch components, pre-assembled 1.5 mm^2 cables

Approvals: DIN VDE 0628; DIN EN 60320 / VDE 0625, if applicable VDE, KEMA, BBJ, SKTC, UL, CSA, LR, GL, DNV, CCC pending.

Type of protection: IP 20, DIN VDE 0470 section 1/11.92

Cable: H05VV-F, S05Z1Z1/-F*
Sheathed cable with fine-stranded wires according to DIN VDE 0250 and VDE 0281 Part 402

Cable cross section 1.5 mm^2 and 2.5 mm^2

Cable diameter:

3 x 1.5 mm^2 =	8.3 mm
3 x 2.5 mm^2 =	10.2 mm
4 x 1.5 mm^2 =	9.2 mm
5 x 2.5 mm^2 =	12.3 mm

Cable with free end: 3 pole conductors with ultrasonically welded conductor ends (equivalent to a solid conductor)
Diameter: 1.5 mm^2 1.6 mm
conductor ends of 5 pole cables have ferrules,
Dimensions approx 2.3 x 2.8 mm
Diameter: 2.5 mm^2 ≙ 2.1 mm

Wire range: Screw version: 0.5 – 2.5 mm^2
solid and fine-stranded e.g. NYM
Terminal screws M3 connecting torque 0.5 – 0.7 Nm
Crimp version: 0.75 – 2.5 mm^2 (fine-stranded)
Pre-assembled cables only
Spring loaded: 0.5 – 2.5 mm^2 solid/
0.5 – 1.5 mm^2 fine-stranded with ferrules
Ground connection (pluggable connector)
Length of the ground loop: 8 mm

Mating cycles: Mating and disconnect under full load according to VDE 0625 approx. 50 – 100 connections with 16 A (resistive load)

Strain relief: Integrated into housing

Volume resistance: 0.8 mΩ (approximate value per male and female connection) corresponds to of 1.5 mm^2 approx. 10 cm

Rated impulse voltage: 4 kV for 250 V and 250/400 V (with pollution degree 2)

Materials:

Insulation components:	– thermo plastic material (Polyamide), halogen-free
Contact parts	– brass, surface-plated
Screws	– galvanized chrome steel

Continuous: temperature:

Cable:	70 °C, 90 °C
Insulating components:	100 °C

Environmental conditions: Pollution degree 2 according to DIN VDE 0110 section 1
Definition: There are only non-electroconductive dust particles present. They may occasionally become electroconductive for short periods due to moisture condensation.
Example: Rooms in houses, shops and other commercial properties.

Fire load: Interconnecting cable:
5 x 2.5 mm^2 = 0.40 kWh + 0.8 kWh/m
3 x 2.5 mm^2 = 0.15 kWh + 0.5 kWh/m
3 x 1.5 mm^2 = 0.16 kWh + 0.4 kWh/m
Supply connection cables to loads:
5 x 2.5 mm^2 = 0.20 kWh + 0.8 kWh/m
3 x 2.5 mm^2 = 0.07 kWh + 0.5 kWh/m
3 x 1.5 mm^2 = 0.08 kWh + 0.4 kWh/m
Distribution panel GST 18i3 V3 P1 = 0.13 kWh
Distribution panel GST 18i3 V5 P1 = 0.20 kWh
Distribution panel GST 18i5 V3 P1 = 0.30 kWh
Initial connection, outgoing supply plug:
3 pole = 0.11 kWh
4 pole = 0.16 kWh
5 pole = 0.20 kWh
3 pole latch component = 0.06 kWh

Coding: Mechanical coding, identified by color.
Black and white have the same coding.
All components are available in these colors.

VDE Regulations:
VDE 0606: Part 200 being prepared to replace DIN VDE 0628
Title: Installation connector for permanent connection in fixed installations

VDE 0625: (EN 60320, IEC 60320)
Title: Appliance couplers for domestic and similar use

DIN VDE 0628: National regulation
Title: Installation connectors up to 400 V with a nominal current of 16 A

Note: **Mating and disconnect is possible under load in accordance with DIN VDE 0625.**
Contacts safeguarded against tensile load on the cable. All components are interlockable.
A locking device must be provided to comply with certification according to DIN VDE 0628.

– **Shock protection** generally guaranteed even when disconnected.
  – Protective conductor is the leading contact in three-phase current: PE before N before L
  – **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.
  – Can only be connected in the current phase sequence;
  – 1 pole cannot be connected
  – **Locking device** according to DIN VDE 0628 and DIN VDE 0606 T200.

Note:

– No dangerous mismating with systems in accordance with IEC 60309, IEC 60320, IEC 60906 and with national connector and outlet systems;
– Compliance with the standards does not guarantee that the connectors are interchangeable with installation connector systems from other manufacturers.
  Installation connector systems do not replace connector/outlet systems for home applications.

*) The cable colors have been adapted to the new European standard HD 208 S2.
The assignment corresponds to international regulations.
Wieland has implemented these new assignments.
During the transition period we may deliver a mixture of old and new parts.

Technical data

	Mains	EIB bus
Rated voltage:	250 V/400 V	50 V
Rated current:	16 A	3 A
Number of poles:	3 pole (L, N, PE) 5 pole (L1, L2, L3, N, PE)	2 pole (+, –) 3 pole (on request)
Regulations:	VDE 0628 VDE 0606 T200	Based draft IEC 61535 EIB manual
Approvals:	DIN VDE 0628 in preparation	EIB manual
Type of protection:	IP 20, DIN VDE 0470 section 1/11.92	
Cable:	Twin connection for mains and bus, type LiYY ... Mains similar to H05VV, Bus 1 x 2 x 0.8 PIMF, similar to I (Y) STY	Similar to I (Y) STY 2 x 2 x 0,8 according to EIB guidelines
Cable-cross section:	1.5/2.5 mm^2	0.5 mm^2
Cable diameter:	Twin cable 3 x 1.5 mm^2 = 8.3 mm 5 x 2.5 mm^2 = 12.3 mm	2 x 2 x 0.8 = 6 mm 6 mm; total width: 14.8 mm 6 mm; total width: 18.8 mm
Cable with free end:	Ferrules: 8 mm 1.5 mm^2 = Ø 1.6 mm 2.5 mm^2 = 2.3 x 2.8 mm	Insulation strip length: 8 mm
Wire range:	Screw version: 0.5 – 2.5 mm^2 solid/fine-stranded	Spring loaded: 0.25 – 0.75 mm^2 solid/fine-stranded
Strain relief:	Integrated into housing, available in black or white	
Volume resistance:	approx. 0.8 mΩ	approx. 5 mΩ (approximate value per male and female connection)
Rated impulse voltage:	Pollution degree 2 4 kV for 250 V and 250/400 V	Pollution degree 2 4 kV for mains, 0.8 kV for bus
Materials:	Insulation components – thermoplastic material, halogen-free Contact parts: brass, surface-plated; tin bronze, surface-plated	
Continuous temperature :	Cable: 70 °C, Insulation components: 100 °C	
Flammability load:	Extension cable Twin cable 5 x 2.5 mm^2 + 1 x 2 x 0.8 = 0.50 kWh +1.52 kWh/m Twin cable 3 x 1.5 mm^2 + 1 x 2 x 0.8 = 0.34 kWh +0.83 kWh/m EIB bus cable 2 x 2 x 0,8 = 0,24 kWh +0,15 kWh/m Connection cable Twin cable 5 x 2.5 mm^2 + 1 x 2 x 0.8 = 0.25 kWh +1.52 kWh/m Twin cable 3 x 1.5 mm^2 + 1 x 2 x 0.8 = 0.17 kWh +0.83 kWh/m EIB bus cable 2 x 2 x 0.8 = 0.12 kWh +0.15 kWh/m Connector EST 2 i3 = 0.17 kWh BST 14 i2 = 0.12 kWh EST 2 i5 = 0.25 kWh	
Coding:	Mechanical coding Mains connectors: GST 18 i ..., coding color: black or white Bus connector: Coding according to EIB regulations (Color: green) Coding dimming: (Color: pastel blue)	
Note:	**Connectors (bus signal) must be used only in combination with a SELV or PELV power supply unit.** The live component must be a female connector according to regulations.It is not possible to install cable in a ring circuit. In principle, not interchangeable with other connector systems available on the market. Mechanical coding only possible using the correct phase sequence. Protection against electric shock is guaranteed even when disconnected. EIB coding can be visually identified by green coloring. All the components can be locked together.	

*) The cable colors have been adapted to the new European standard HD 208 S2. The assignment corresponds to international recommendations.

Technical data

	Mains	Control signal
Rated voltage:	250 V/400 V	50 V
Rated current:	16 A	3 A
Number of poles:	3 pole (L, N, PE) 5 pole (L1, L2, L3, N, PE)	3 pole
Regulations:	DIN VDE 0628 VDE 0606 T200 in preparation	EN VDE 0627
Approvals:	DIN VDE 0628	EN VDE 0627
Type of protection:	IP 20, DIN VDE 0470 section 1/11.92	
Cable:	Combination cable for mains and bus, type LiYY ... Mains: similar H05VV, bus 1 x 2 x 0.8, PIMF, similar I(Y)STY	control cable; I(Y)STY 2 x 2 x 0.8
Cable-cross section:	1.5/2.5 mm^2	0.5 mm^2
Cable-diameter:	Twin cable 3 x 1.5 mm^2 = 8.3 mm 5 x 2.5 mm^2 = 12.3 mm	2 x 2 x 0.8 = 6 mm 6 mm; total width: 14.8 mm 6 mm; total width: 18.8 mm
Cable with free end:	ferrules: 8 mm 1.5 mm^2 = Ø 1.6 mm 2.5 mm^2 = Ø 2.3 x 2.8 mm	8 mm; solid conductor
Wire range:	Screw version 0.5 – 2.5 mm^2 solid/fine-stranded	Spring loaded 0.25 – 0.75 mm^2 solid/fine-stranded
Strain relief:	Integrated into housing, available in black or white	
Volume resistance:	approx. 0,8 mΩ	approx. 5 mΩ (approximate value per male and female connection)
Rated impulse voltage:	Pollution degree 2 4 kV for 250 V and 250/400 V	Pollution degree 2 4 kV for mains, 0.8 kV Bus
Materials:	Insulation components: Thermoplastic material, halogen-free Contact parts, surface-plated: Brass	Bronze
Continuous temperature:	Cable: 70 °C, Insulation components: 100 °C	
Flammability load:	Extension cable twin cable 5x2.5 mm^2 + 1x2x0.8 = 0.50 kWh + 1.52 kWh/m twin cable 3x1.5 mm^2 + 1x2x0.8 = 0.34 kWh + 0.83 kWh/m Control cable 2x2x0.8 = 0.24 kWh + 0.15 kWh/m Connection cable twin cable 5x2.5 mm^2 + 1x2x0.8 = 0.25 kWh + 1.52 kWh/m twin cable 3x1.5 mm^2 + 1x2x0.8 = 0.17 kWh + 0.83 kWh/m EIB Bus cable 2x2x0,8 = 0.12 kWh + 0.15 kWh/m Connector EST 3 i3 = 0.17 kWh EST 3 i5 = 0.25 kWh	BST 14 i3 = 0.12 kWh
Coding:	Mechanical coding Mains connector: coding GST 18i ..., black or white Signal connector: Wieland coding, black or white	

*) The cable colors have been adapted to the new European standard HD 208 S2. The assignment corresponds to international recommendations.

Note:

Connectors (control signal) must only be used in combination with a SELV or PELV power supply unit.
The live component must be a female connector according to regulations. It is not possible to install cable in a ring circuit. In principle, not interchangeable with other connector systems available on the market. Mechanical coding only possible using the correct phase sequence. Protection against electric shock is guaranteed even when disconnected. Control signal coding can be visually identified by black coloring. All the components can be locked together.

Technical data

	Mains 3 pole	Mains 4 pole	Dimming signal
Rated voltage:	250 V	250 V	50 V
Rated current:	16 A	16 A	3 A
Number of poles:	3 pole	4 pole	2 pole
Regulations:	DIN VDE 0628; VDE 0606 T200 in preparation		IEC 61984
Approvals:	DIN VDE 0628; VDE 0606 T200 in preparation		IEC 61984
Type of protection:	IP 20, DIN VDE 0470 section 1/11.92		
Cable:	H05VV-F ...G, S05Z1Z1		L03VV-U, L03Z1Z1*)
Cable diameter:	1.5 mm^2	2 x 0.5 mm^2	
Cable cross section:	8.3 mm	9.2 mm	4.8 mm
Cable with free end:	ultrasonically welded, 9 mm	ultrasonically welded, 10 mm	solid, 9 mm
Rated impulse voltage Pollution degree 2:	4 kV		0.8 kV
Materials:	thermoplastic, halogen-free Contact parts: brass, surface-plated		
Continuous temperature:	Cable: 70 °C, Insulation components: 100 °C		

Flammability load:

	EST 2i3	EST 2i4	BST 14i2
Extension cable	0.16 kWh +0.4 kWh/m	0.32 kWh +0.6 kWh/m	0.24 kWh +0.15 kWh/m
Connection cable	0.68 kWh +0.4 kWh/m	0.16 kWh +0.6 kWh/m	0.12 kWh +0.15 kWh/m

Coding:	Mechanical coding		
Type:	GST 18i3	GST 18i4	BST 14i2
Color:	black	black	blue, black

Note:

When using an ELV voltage supply for BST 14i2 (blue), it must be electrically isolated and have a basic insulation.

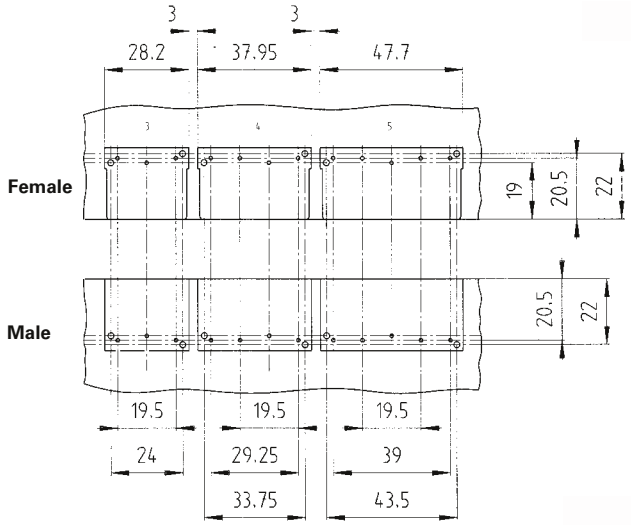
Connection to the live cable must be with a female connector according to the regulations.
It is therefore not possible to have a ring circuit. Mechanical coding only possible using the correct phase sequence. Protected against accidental contact even when not connected. Dimming signal coding can be visually identified by blue coloring. All components can be interlocked.

Cable types L03... can stand a twisting torque of max. 0.15 Nm without a problem (compare DIN EN 50262/VDE 0619).

The BST 14i2 system is therefore suited for the connection of fixed devices. Higher twisting torques must be checked accordingly, if required.

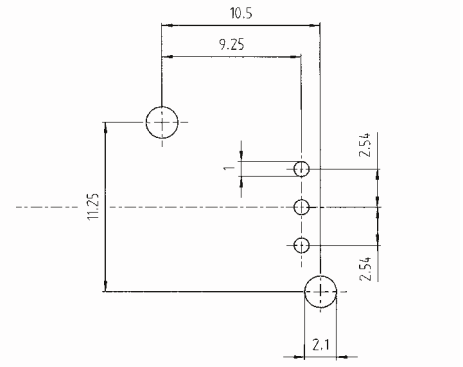
PCB layout for solder connectors

PCB layout for
GST 18 solder connector:



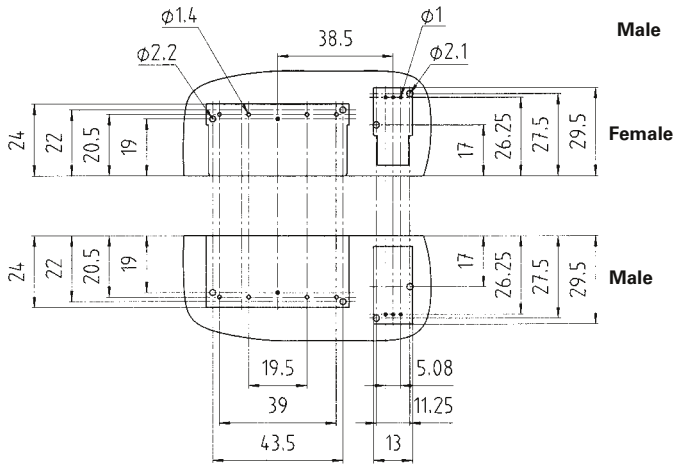
PCB layout for
BST 14 solder connector:

Female/
Male

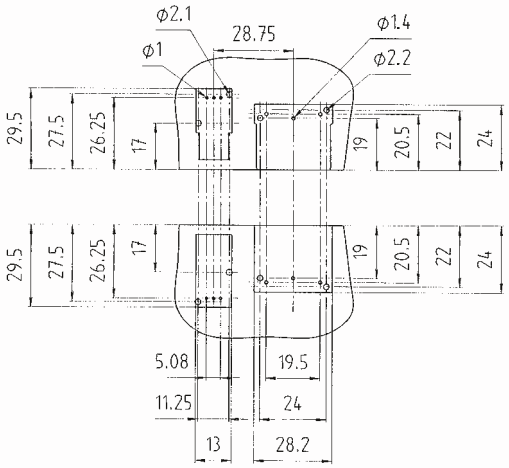


PCB layout for EST connector:
(combination of GST and BST)

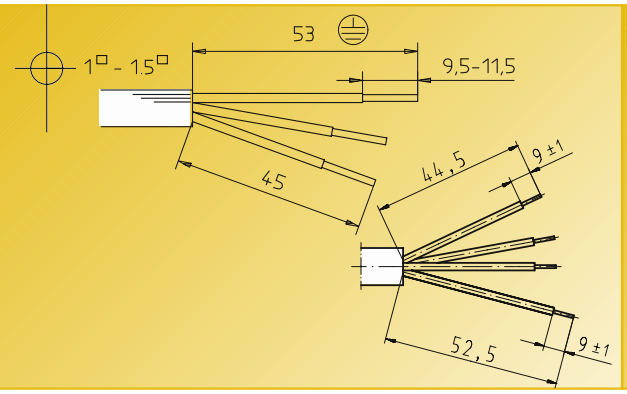
EST 2i5/3i5



EST 2i3/3i3



GST 18i3 **GST 18i4**



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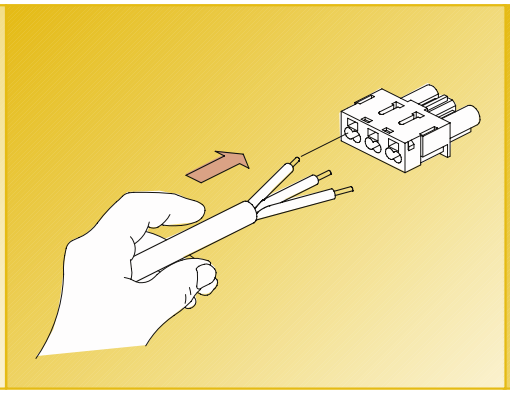

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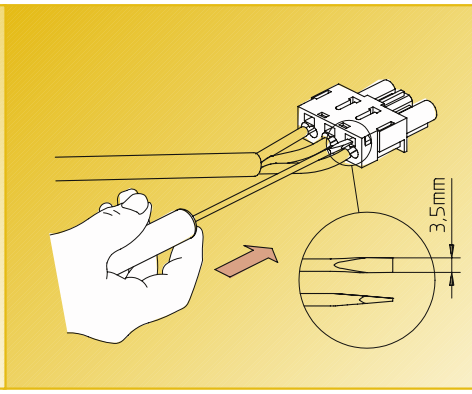

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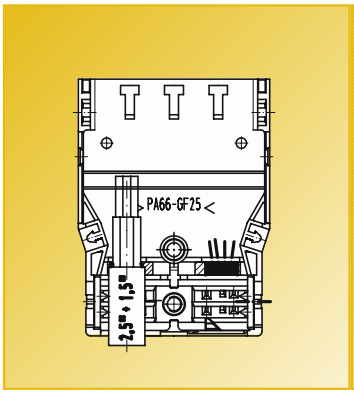

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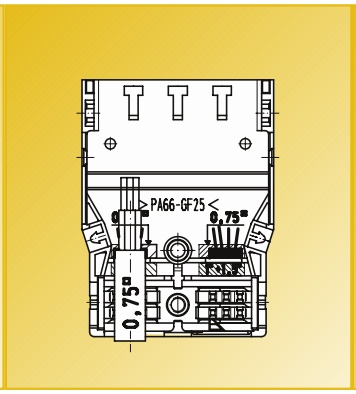

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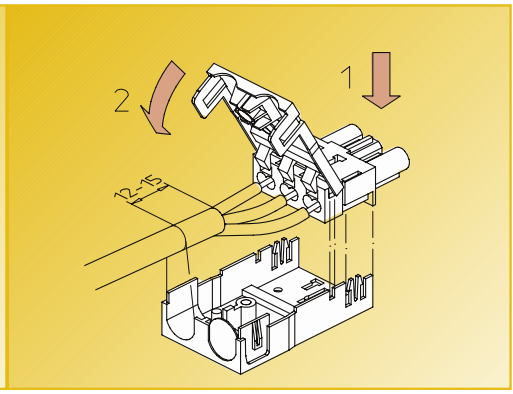
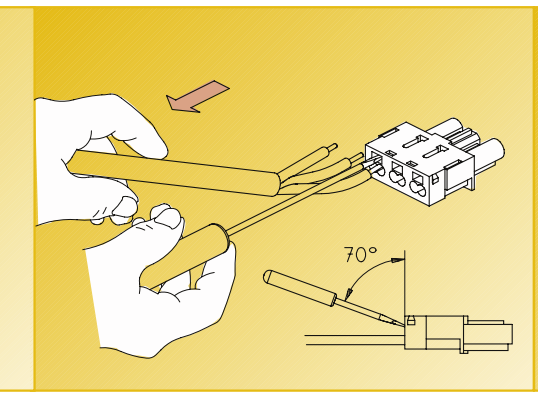


8.

Installation instructions

Connectors with spring connection

GST 18i3, GST 18i4



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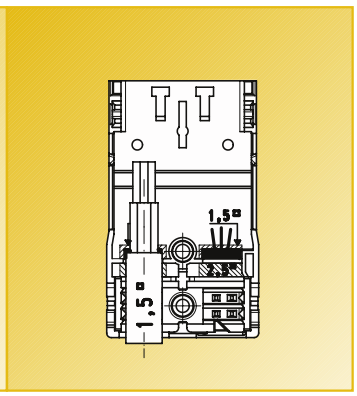

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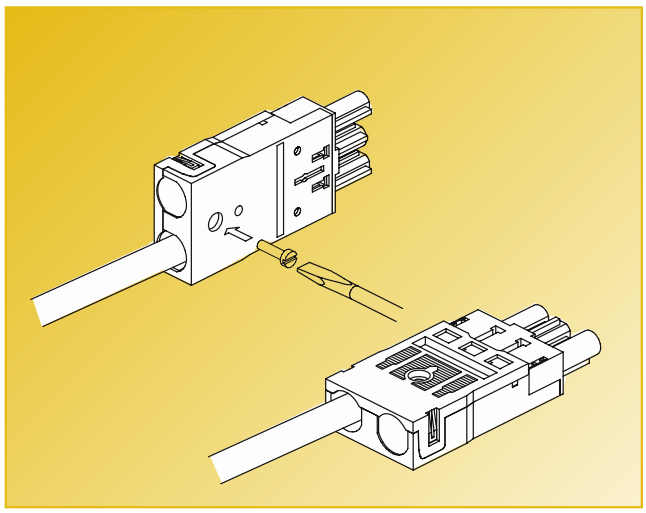


9.

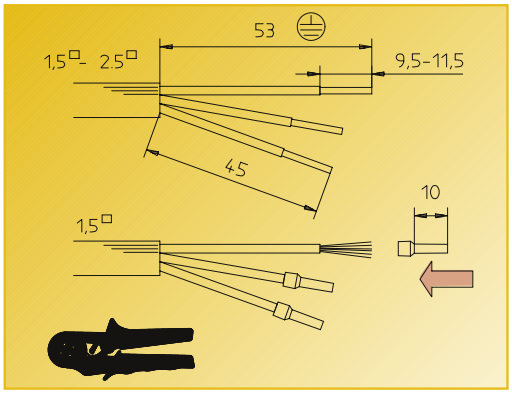
1. Determine the sheath and insulation strip lengths
   – All measurements in mm
   – Tool required for ferrules
   Part No. 95.101.1300.0
2. Wiring,
   for solid conductors
   Fix the wires
   by tightening them with a screwdriver
3. Wiring for fine-stranded conductors
   Open the clamping body with a screwdriver
4. Unwiring
   Open the clamping body with a screwdriver
5. Insert the 3 x 1,5□ wire into the base in order to ensure protection degree IP40
6. Insert the 4 x 1.5□/2.5□ wire into the base in order to ensure protection degree IP40
7. Insert the 4 x 0.75□ wire into the base in order to ensure protection degree IP40
8. Assemble the housing
9. Attach the strain relief

Installation instructions

Appliance coupler, snap-in

GST 18i3, GST 18i4, GST 18i5

1. Determine the sheath and insulation strip lengths
   – All measurements in mm
   – Tool required for ferrules
   Part No. 95.101.1300.0
2. Wiring
   for solid conductors
3. Wiring
   for fine-stranded conductors
   Open the clamping body with a screwdriver
4. Unwiring
   Open the clamping body with a screwdriver



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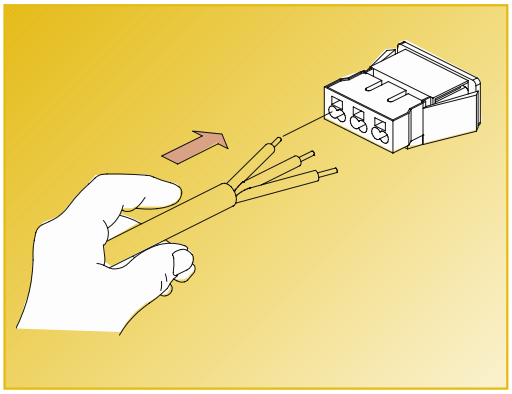

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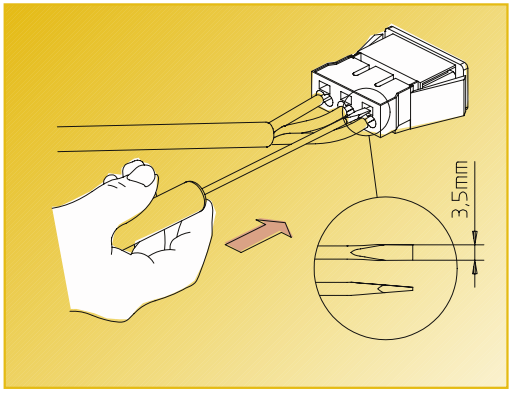

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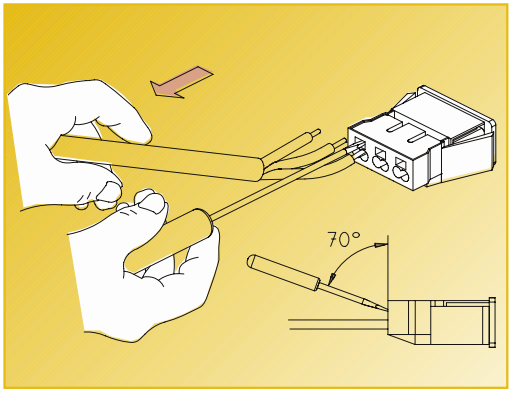


4.

Installation instructions

Mounting flange for distribution unit

GST 18i5

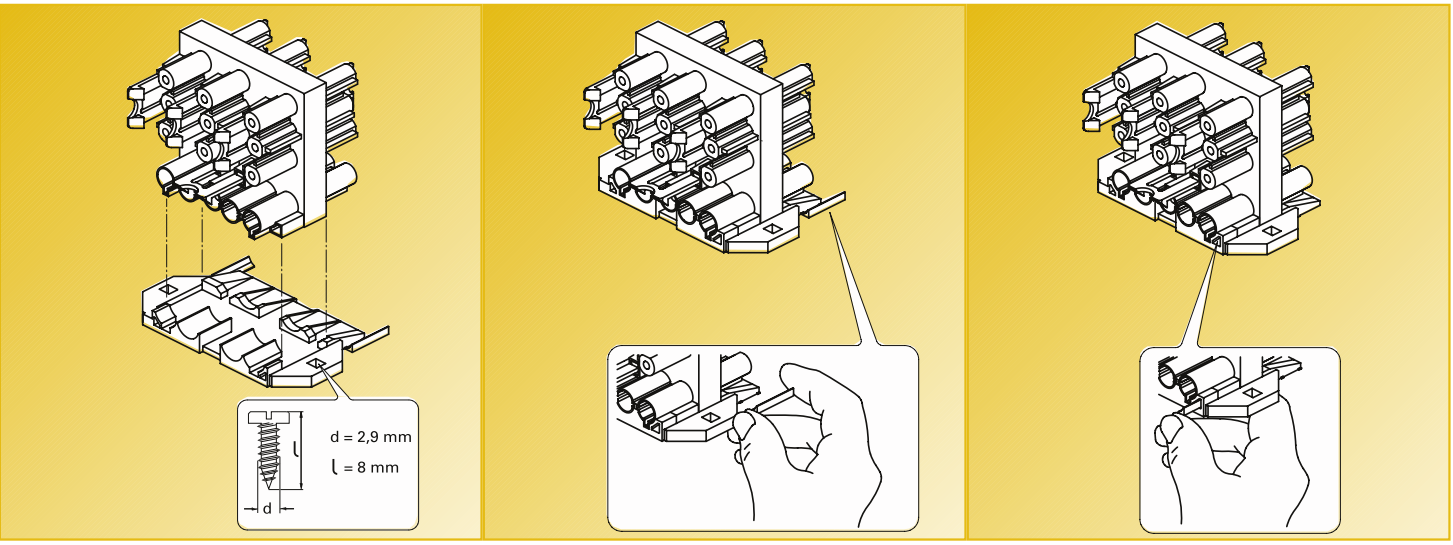
Mounting flange for screw mount

1. Position the distribution unit on the mounting plate
2. Break off the latching pin
3. Insert the latching pin

Mounting flange for snap-on

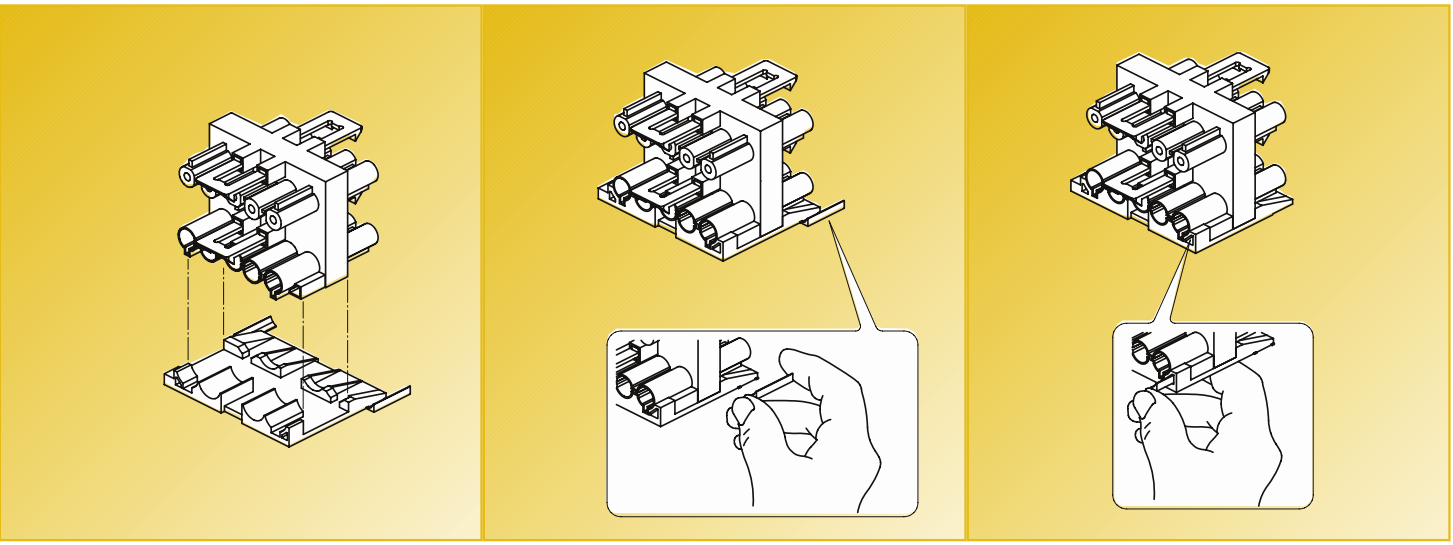
4. Position the distribution unit on the mounting flange
5. Break off the latching pin
6. Insert the latching pin

Mounting flange for screw mount



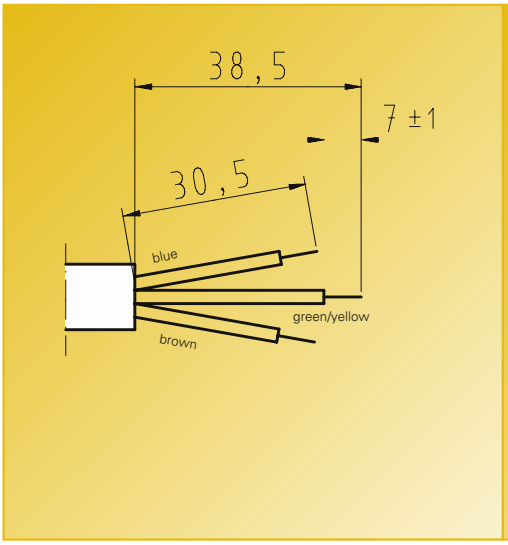
1. 2. 3.

Mounting flange for snap-on



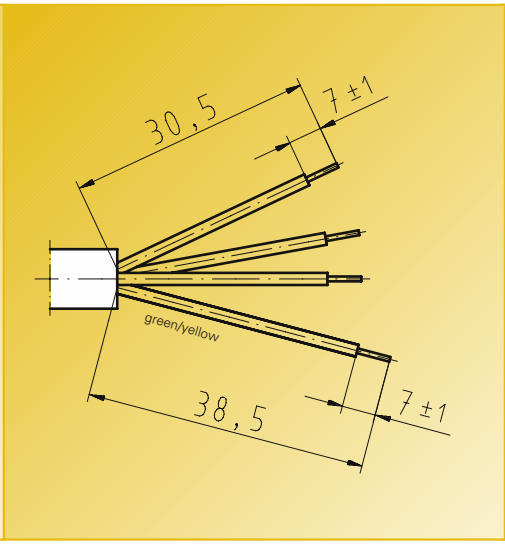
4. 5. 6.

GST 18i3 screw connection



1.

GST 18i4 screw connection



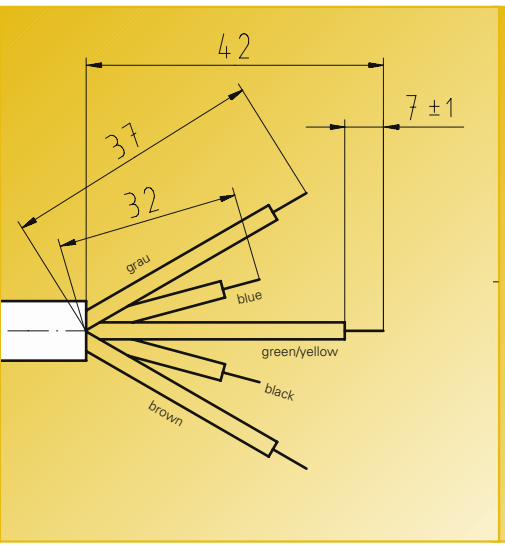
2.

Installation instructions

Connector with screw connection, flat design

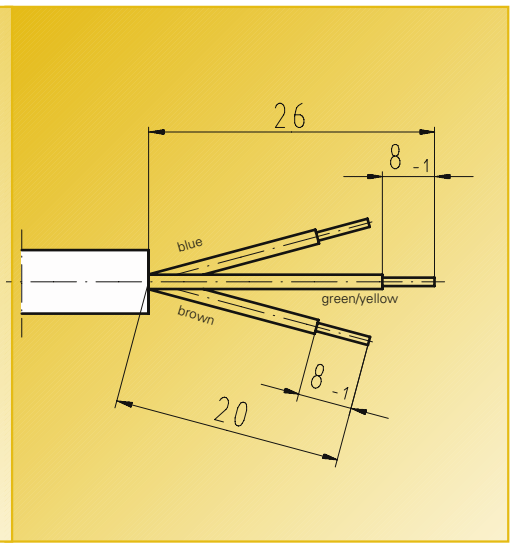
Sheath and insulation strip lengths

GST 18i5 screw connection



3.

GST 15i3 screw connection



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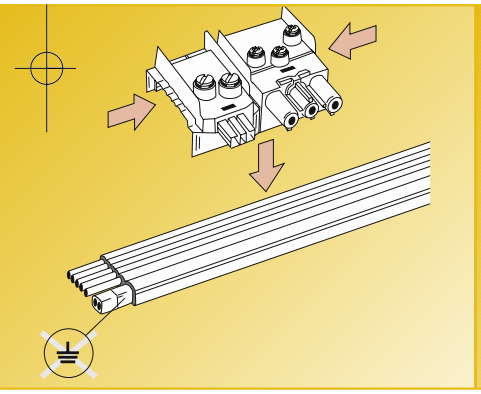

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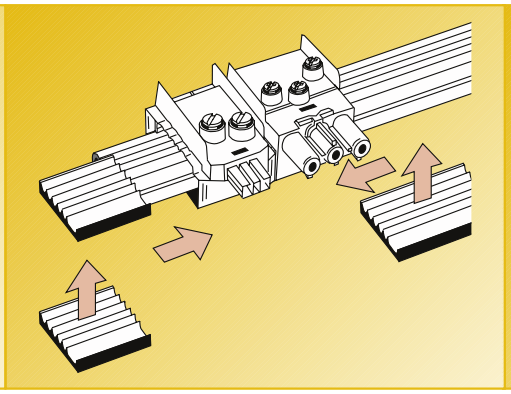

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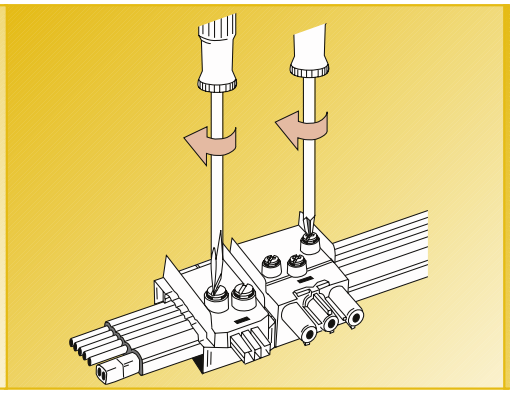
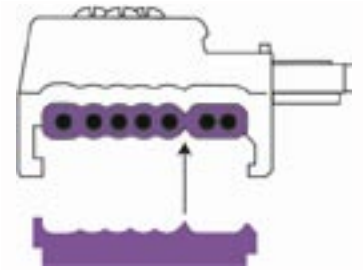


3.

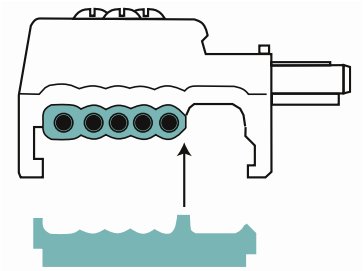
4.

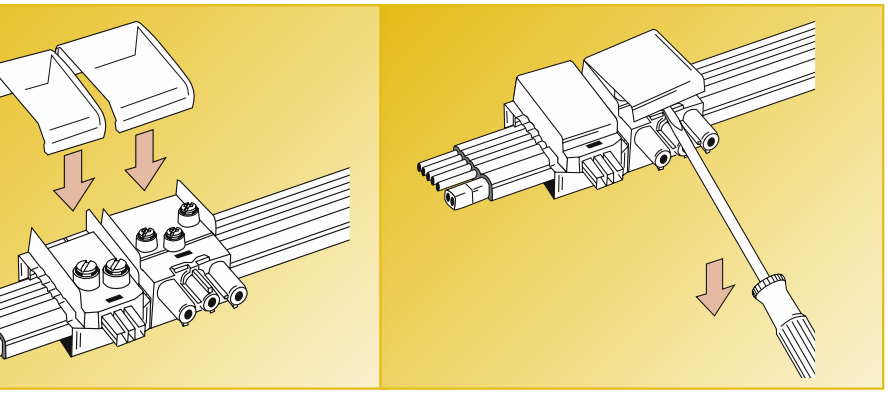
Installation instructions

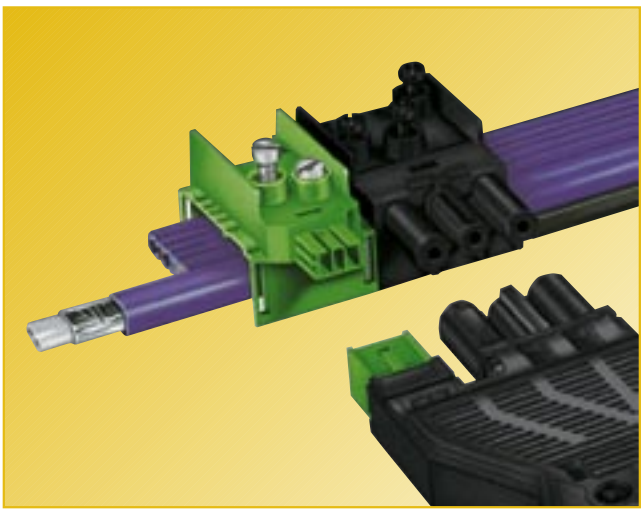
7 pole flat cable system



5 pole flat cable system







1. When connecting flat cable adapters for mains and EIB bus/control signal, note the latching side (3 pole on the left, 5 pole on the right). Latch the components together. Place the terminal block on the flat cable, observing the coding on the cable.
2. Slide on the base plate – **note the coding of the terminal block and cable** (see diagram on the left). The grooves on the terminal block as well as on the base plate indicate the correct position of the adapter on the cable. If it is not positioned correctly, it is only possible to slide on the base plate using a great deal of force. The unit must then be rotated by 180°
3. Turn the slotted screws in the flat cable until they reach the stop
   Mains: torque = 0.7 Nm
   Bus: torque =1.0 Nm
4. Place the cover on top.

Additional notes:

- When mounting the connectors, a locking device must be used.
- To remove the cover, insert the screwdriver in the slot and lift gently.
- The ends of the flat cable must be terminated with the cable end cap. This guarantees the necessary insulation between bus conductors and power cables.
- Once the adapter has been removed, the sections of cable that have been terminated with piercing screws must be sealed with insulating tape.
- Caution: Do not connect the screen to ground.
- The functional reliability can only be guaranteed if original cable is used.

Technical data

Components :

	Mains
Connection technology:	Insulation-piercing contacts with plug-in outgoing circuit in accordance with Wieland GST coding
Terminal screws:	Tightening torque: 0.8 Nm
Rated voltage:	250 V/400 V
Rated current:	16 A
Number of poles:	3, 5 pole
Regulations:	DIN VDE 0628, VDE 0606 T200 in preparation IEC 998-2-3, DIN EN 60998-2-3/VDE 0613-2-3
Approvals:	VDE, SEV
Type of protection:	IP 20, DIN VDE 0470 section 1/11.92
Connection cable for incoming supply:	Ø 5 – 13 mm
Materials:	Insulation components: thermoplastic material, halogen-free Cover: polycarbonate, transparent Contact parts: brass, surface-plated tin-bronze, surface-plated
Continuous temperature:	70 °C, Insulation components 100 °C
Flammability load:	Flat cable adapter GST 18i5 0.27 kWh Flat cable adapter GST 18i3 0.18 kWh
Coding:	Mechanical coding GST 18i, Code 1, black
General:	The voltage supply (incoming supply) in the flat cable is carried out using a screw-type flat cable adapter. The outgoing boxes can be adapted using insulation-piercing connection technology. The outgoing units themselves can be connected using ***gesis*** connector systems. The connectors must be locked with a locking device. The appropriate GST accessories should be used.. **Please note the installation instructions on page 366!**
Note:	The functional reliability can only be guaranteed if original cable is used.

Technical data

Flat cable

	PVC	Halogen-free
Quantity x conductor cross section:	5 x 2.5 mm²	5 x 2.5 mm²
Outer sheath:	PVC according to CENELEC HD 21.1 S2, TM2	Thermoplastic PE compound, halogen free and no corrosive gases according to DIN VDE 0472 Section 813
Color of sheath:	Light green RAL 6027	Light green RAL 6027
Weight:	270 g/m	260 g/m
Dimension (W x H):	24 x 6 mm	24 x 6 mm
Flammability load:	0.778 kWh/m	0.671 kWh/m
Flammability behavior:	self-extinguishing according to IEC 60332.1	self-extinguishing according to IEC 60332.1 Low level of smoke development IEC 61034-1/2
Bending radius:	min. 60 mm	min. 60 mm
Structure:		
Copper conductor:	bare, fine-stranded according to CENELEC HD 383 S2, Class 6	bare , fine-stranded according to CENELEC HD 383 S2, Class 6
Wire insulation:	PVC according to CENELEC HD 21.1 S2, TI2	Cross-linked, halogen free and flame resistant Ground
Color of wires:	 *)	 *)
Technical data:		
Conductor cross section:	2.5 mm²	2.5 mm²
Test voltage:	4 kV	4 kV
Rated voltage:	450/750 V	450/750 V
Test current:	according to IEC 60364-5-523	according to IEC 60364-5-523
DC resistance:	7.98 Ω/km	7.98 Ω/km

*) The cable colors have been adapted to the new European standard HD 208 S2. The assignment corresponds to international recommendations.

Technical data

	Bus
Connection technology:	Insulation-piercing contacts with plug-in outgoing circuit in accordance with Wieland GST, BST, EST coding
Terminal screws:	Tightening torque: 1.0 Nm
Rated voltage:	50 V
Rated current:	3 A
Number of poles:	2 pole (+,-)
Regulations:	EIB manual
Approvals:	according to EIB manual
Connection cable for Incoming supply:	Ø 3 – 8 mm
Materials:	Insulation components: thermoplastic material, halogen free Cover: polycarbonate, transparent Contact parts: brass, surface-plated tin-bronze, surface-plated
Continuous temperature:	70 °C, Insulation components 100 °C
Flammability load:	Flat cable adapter BST 14i 0.12 kWh
Coding:	Mechanical coding BST 14i Other coding: black
General:	**Connectors must be used only in combination with a SELV or PELV power supply unit.** The voltage supply (incoming supply) in the flat cable is carried out using a screw-type flat cable adapter. The outgoing boxes can be adapted using insulation-piercing connection technology. The outgoing units themselves can be connected using ***gesis*** connector systems. **Please note the installation instructions on page 336!**
Note:	The functional reliability can only be guaranteed if original cable is used.

Technical data

Flat cable

	PVC	Halogen-free
Quantity x Conductor cross section:	2 x 1.5 mm²	2 x 1.5 mm²
Outer sheath:	PVC	Thermoplastic PE Compound, halogen-free
Color of sheath:	Dark grey	Dark grey
Weight:	90 g/m	86 g/m
Dimension (W x H):	11 x 6 mm	11 x 6 mm
Flammability load:	0.48 kWh/m	0.44 kWh/m
Flammability behavior:	Self-extinguishing according to IEC 60332.1	Self-extinguishing according to IEC 60332.1 Low level of smoke development IEC 61034-1/2
Bending radius:	min. 60 mm	min. 60 mm
Structure:		
Copper conductor:	Tin-plated according to CENELEC HD 383 S2, Class 5	Tin-plated according to CENELEC HD 383 S2, Class 5
Wire insulation:	PE according to DIN VDE 0207 Section 2, 2YI2	PE according to DIN VDE 0207 Section 2, 2YI2
Wire colors:	natural	natural
Shield:	Twin screen from aluminium tape, electrically isolated	Twin screen from aluminium tape, electrically isolated
Technical data:		
Conductor cross section:	1.5 mm²	1.5 mm²
Rated voltage:	300/300 V	300/300 V
Rated current:	3 A	3 A
DC resistance:	13.7 Ω/km	13.7 Ω/km
Capacitance:	70 pF/m	70 pF/m
Attenuation at 1 MHz:	nom. 1.2 dB/100 m	nom. 1.2 dB/100 m
Surge impedance1 MHz:	nom. 75 Ω	nom. 75 Ω

Technical data

Components :

	Mains	Bus
Connection technology:	Insulation-piercing contact with plug-in outgoing circuit in accordance with Wieland GST, BST, EST coding	
Terminal screws:	Tightening torque: 0.8 Nm	Tightening torque: 1.0 Nm
Rated voltage:	250 V/400 V	50 V
Rated current:	16 A	3 A
Number of poles:	3/ 5 pole	2 pole (+,-)
Regulations:	VDE 0628, Preliminary draft IEC 61535 IEC 998-2-3 (insulation-piercing clamping device)	EIB manual
Approvals:	VDE, SEV	according to EIB manual
Type of protection:	IP 20, DIN VDE 0470 section 1/11.92	
Connection cable for incoming supply:	Ø 5 – 13 mm	Ø 3 – 8 mm
Materials:	Insulation components: thermoplastic material, halogen-free Cover: polycarbonate, transparent Contact parts: brass, surface-plated tin-bronze, surface-plated	
Continuous temperature:	70 °C, Insulation components 100 °C	
Flammability load:	Flat cable adapter GST 18i5 Flat cable adapter GST 18i3 Flat cable adapter BST 14i	0,27 kWh 0,18 kWh 0,12 kWh
Coding:	Mechanical coding GST 18i Combination connector for mains and signal, type EST .... 3 pole tap-off, all phases with standard GST 18i coding GST 18i3/5 color: black Other coding: black	BST 14i EIB coding: green
General:	**The bus signal must have a SELV or PELV power supply unit.** The voltage supply (incoming supply) in the flat cable is carried out using a screw-type flat cable adapter. The outgoing boxes can be adapted using insulation-piercing connection technology. The outgoing units themselves can be connected using ***gesis*** connector systems. The connectors must be locked with the adapter. The appropriate GST accessories should be used. **Please note the installation instructions.**	
Note:	The functional reliability can only be guaranteed if original cable is used.	

*) The cable colors have been adapted to the new European standard HD 208 S2.
The assignment corresponds to international recommendations.

Technical data

Flat cable

	PVC	Halogen-free
Quantity x		
Conductor cross section:	5 x 2.5 mm² + 2 x 1.5 mm²	5 x 2.5 mm² + 2 x 1.5 mm²
Outer sheath:	PVC according to CENELEC HD 21.1 S2, TM2	Thermoplastic PE Compound, halogen-free and no corrosive gases according to DIN VDE 0472 section 813
Color of sheath:	Purple RAL 4005	Purple RAL 4005
Weight:	350 g/m	340 g/m
Dimension (W x H):	32 x 6 mm	32 x 6 mm
Flammability load:	1.18 kWh/m	0.99 kWh/m
Flammability behavior:	Self-extinguishing according to IEC 60332.1	Self-extinguishing according to IEC 60332.1 Low risk of fire spreading according to IEC 60332-3C Low level of smoke development IEC 61034-1/2
Bending radius:	min. 60 mm	min. 60 mm

Power component

Structure:

Copper conductor:	bare, fine-stranded according to CENELEC HD 383 S2 Class 6	bare, fine-stranded according to CENELEC HD 383 S2 Class 6
Wire insulation:	PVC according to CENELEC HD 21.1 S2, TI2	Cross-linked, halogen free and flame resistant
Wire colors:	black, brown, black, blue, yellow/green	black, brown, black, blue, yellow/green

Technical data:

Conductor cross section:	2.5 mm²	2.5 mm²
Test voltage:	4 kV	4 kV
Rated voltage:	450/750 V	450/750 V
Test current:	according to IEC 60364-5-523	according to IEC 60364-5-523
DC resistance:	7.98 Ω/km	7.98 Ω/km

Bus component

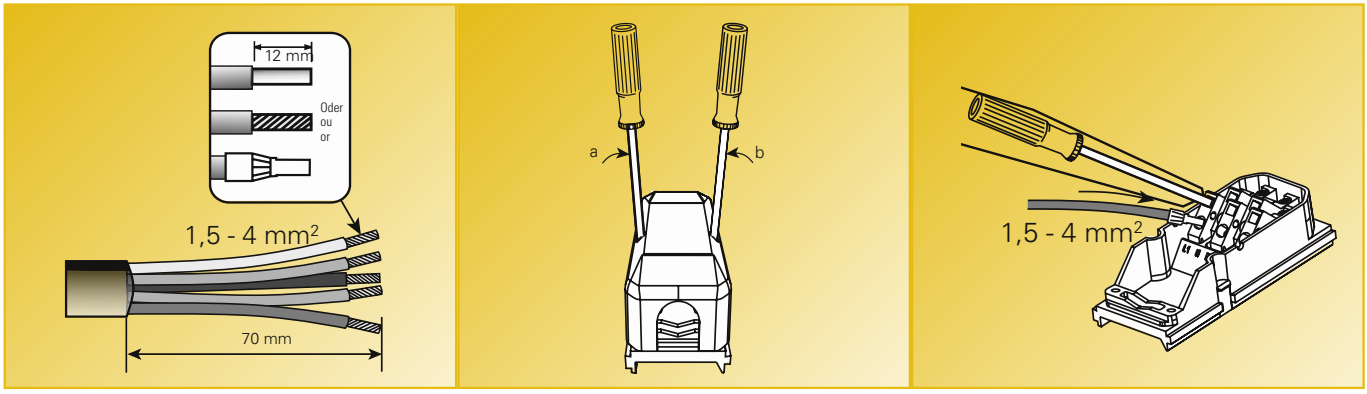
Structure:

Copper conductor:	tin plated according to CENELEC HD 383 S2, Class 5	tin plated according to CENELEC HD 383 S2, Class 5
Wire insulation:	PE according to DIN VDE 0207 Section 2, 2YI2	PE according to DIN VDE 0207 Section 2, 2YI2
Wire colors:	natural	natural
Shield:	Twin screen from aluminium tape, electrically isolated	Twin screen from aluminium tape, electrically isolated

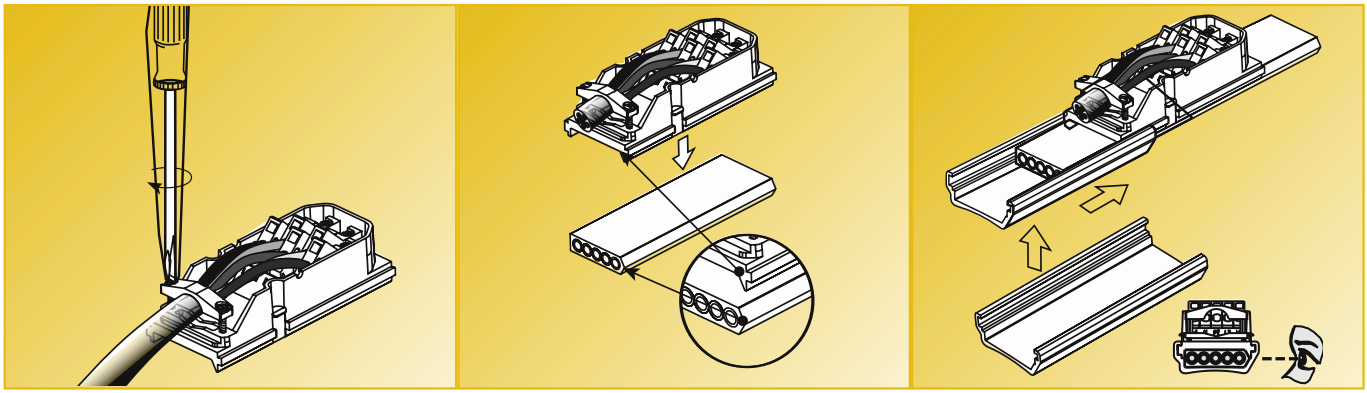
Technical data:

Conductor cross section:	1.5 mm²	1.5 mm²
Rated voltage:	300/330 V	300/300 V
Rated current:	3 A	3 A
DC resistance:	13.7 Ω/km	13.7 Ω/km
Capacitance:	70 pF/m	70 pF/m
Attenuation at 1 MHz:	nom. 1.2 dB/100 m	nom. 1.2 dB/100 m
Surge impedance 1 MHz:	nom. 75 Ω	nom. 75 Ω

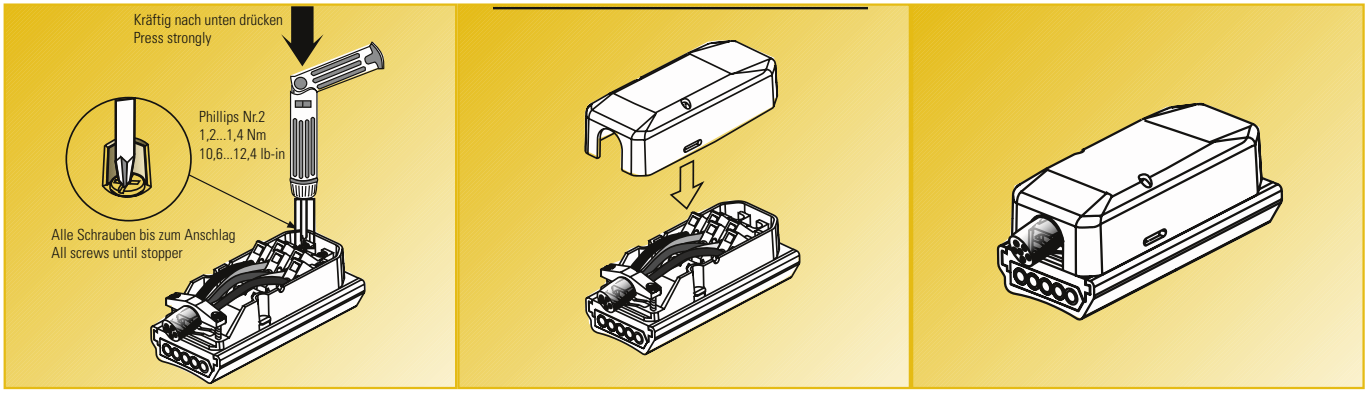
Installation instructions



1. 2. 3.



4. 5. 6.



7. 8. 9.

Technical data

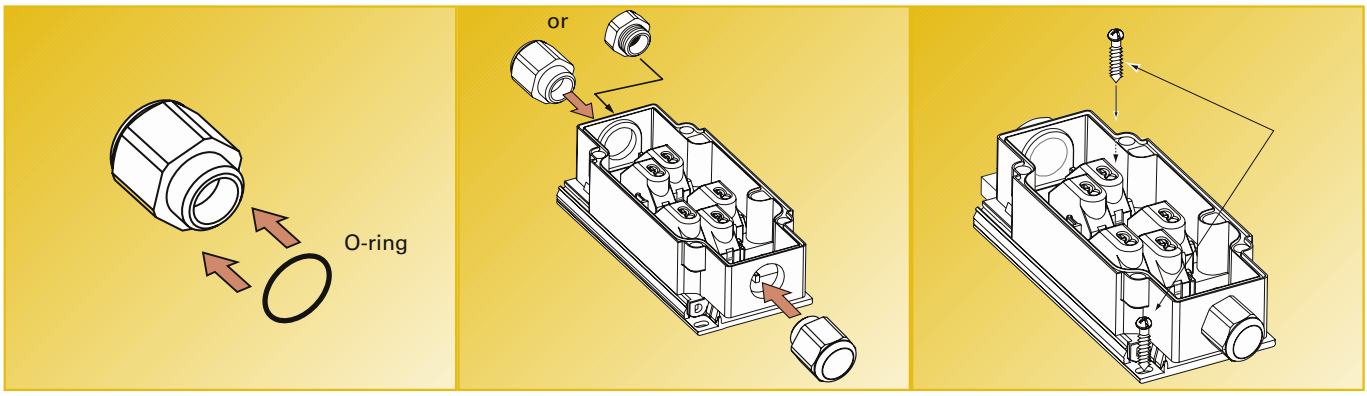
Flat cable 5 x 10 mm²

PVC

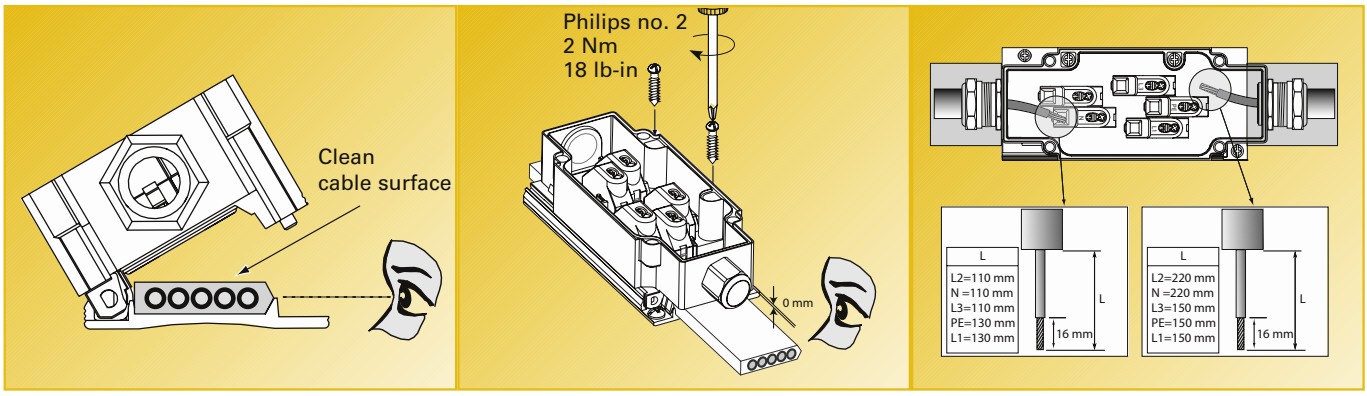
Quantity x conductor cross section:	5 x 10 mm²
Outer sheath:	PVC accord. to CENELEC HD 21.1 S2, TM2
Color of sheath:	light green, similar to RAL 6027
Weight:	845 g/m
Dimension (B x H):	38.5 x 10 mm
Flammability load:	2.12 kWh/m
Flammability behavior:	self-extinguishing accord. to IEC 60332-1
Structure:	
Copper conductor:	unplated, fine-stranded accord. to DIN VDE 0295 Class 5
Wire insulation:	PVC accord. to CENELEC HD 21.1 S2, TI2
Wire colors:	 *)
Technical data:	
Test voltage:	4 kV
Nominal voltage:	690 V
Test current:	accord. to IEC 60364-5-523 and SEV NIN 42512.2
DC resistance:	1.91 Ω/km
Bending radius:	min. 100 mm

*) The cable colors have been adapted to the new European standard HD 208 S2. The assignment corresponds to international recommendations.

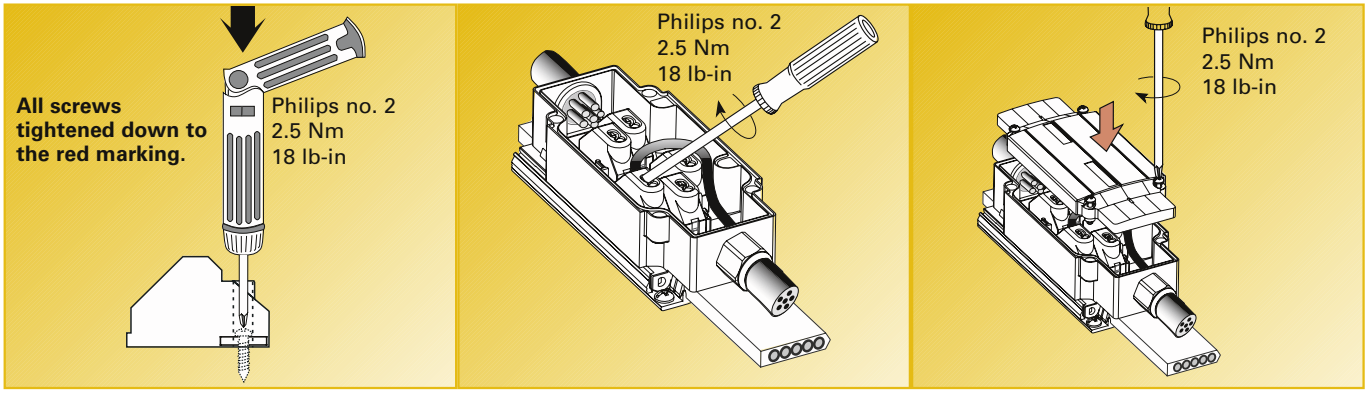
Installation instructions



1. 2. 3.



4. 5. 6.



7. 8. 9.

Additional information and notes:

- Flat cable 5 x 16 mm², 450/750 V
- Box 2x (5 x 6 mm²)
- Use only with original cable

Technical data

Flat cable 5 x 16 mm²

	PVC	Halogen-free
Outer sheath:	PVC oil-proof	Polyolefine, halogen-free
Color of sheath:	light gray	light gray
Weight:	1.3 kg/m	1.3 kg/m
Dimension (B x H):		
Flammability load:	2.95 kWh/m	2.5 kWh/m
Flammability behavior:	self-extinguishing accord. to IEC 60332-1	No corrosive gas accord. to IEC 60754-2, low fire transmission accord. to IEC 60332-3, low smoke development accord. toIEC 61034
Quantity x conductor cross section:	5 x 16 mm²	5 x 16 mm²
Structure:		
Copper conductor:	unplated, fine-stranded accord. to CENELEC HD 383 S2 Class 6	unplated, fine-stranded accord. to CENELEC HD 383 S2 Class 6
Wire insulation:	PVC accord. to CENELEC HD 21.1 S3, TI3	Thermoplastic PE Compo, halogen-free, flame-retardant
Wire colors:	 *)	 *)
Technical data:		
Test voltage:		
Nominal voltage:	450/750 V	450 /750 V
Current-carrying capability::	accord. to IEC 60364-5-523 and SEV NIN 42512.2	accord. to IEC 60364-5-523 and SEV NIN 42512.2
DC resistance:	1.15 Ω /1000 m (20 °C)	1.15 Ω /1000 m (20 °C)
Bending radius:	min. 113 mm	min. 113 mm

*) The cable colors have been adapted to the new European standard HD 208 S2. The assignment corresponds to international recommendations.

Technical data

Pole:	2
Rated voltage:	48 V
Rated current:	25 A (only applies to male and female connectors) Prefabricated cables with fuse carrier max.15 A
Rated cross section:	2.5 mm^2 fine-stranded
Type of connection:	Screw, crimp connection
Wire range:	Screw component: min. 0.5 mm^2; max. 2.5 mm^2 solid and fine-stranded without ferrule
Insulation strip length:	7 mm
Approvals:	VDE 0711 section 1 (DIN EN 60598-1) in connection with VDE 0609 section 1 (DIN EN 60999), VDE 0470 section 1 (DIN EN 60529), DIN IEC 352 section 2 Flat cable fuses in accordance with DIN 72581 section 3 Transformer: MM, ENEC, VDE, CE
Type of protection:	IP 20 in accordance with DIN VDE 0470 section 1/11.92
Materials : Insulation components:	PA 6.6 UL 94 V-0, continuous thermal stability in accordance with- DIN VDE 0304, 20.000 h/5.000 h, 100/115 °C Glow wire test in accordance with DIN VDE 0471 section 21 (IEC 695), 960 °C
Color:	white
Metal components:	Brass with silver plating
Screw:	galvanized chrome steel
Cable:	50 x 0.25 stranded conductors with tin plated, 2 layers, halogen-free, low flammability
Color:	white
Diameter:	3.9 < d < 4.2 mm continuous temperature 120 °C
Flammability load:	0.064 kWh/m
Installation instructions:	Low voltage lighting installations may only be installed by experts under consideration of DIN VDE 0100 section 559 or section 559/A2 See next page for electronic transformer

Technical data

Pole:	2
Rated voltage:	48 V
Rated current:	16 A
Rated cross section:	1.5/2.5/6 mm²
Type of connection:	Screw or crimp connection
Wire range:	min. 0.5 mm² max. 2.5 mm²
Insulation strip length:	7 mm, with ferrules
Approvals:	Transformer: MM, ENEC, VDE, CE
Type of protection:	IP 20 according to DIN VDE 0470 section 1/11.92
Materials :	
Insulation components:	thermoplastic material, Continuous temperature 110 °C
Color:	white
Metal components:	Brass with nickel plating
Screw:	galvanized chrome steel
Cable:	H05VV-F2 x 1.5 FLKK 2 x 2.5
Color:	white
Installation instructions:	Low voltage lighting installations may only be installed by experts under consideration of DIN VDE 0100 Section 559 or Section 559/A2

Electronic transformer ST 16/ST 17

Primary version:	with pre-assembled cable GST 18i 3 or with a pair of screw terminals with strain relief
Secondary version:	with pre-assembled cable ST 16 / ST 17
Primary nominal voltage:	230 V AC, 50/60 Hz
Power range:	35-105 W
Nominal output voltage:	11.7 V
Power current in nominal mode:	0.45 V
Power factor:	0.96 c
Degree of effectiveness:	95%
Ambient temperature t_a:	max. 50 °C for maximum load
Housing temperature t_c:	max. 90 °C for maximum load
Short circuit protection:	electronic, automatic restart
Overload/temperature protection:	Automatic regulation of power up to 70% followed by disconnection
No-load operation:	Locked
Flammability protection:	Disconnection in event of error
Protection class:	II
Dimmable:	with TRONIC dimmer and universal dimmer
Dimensions :	175 x 42 x 18 mm
Other:	Adjustable with reverse phase control dimming, not intended for forward phase dimming

Technical data

General information:

Number of poles:	3 pole (L, ground, N)
Rated voltage:	250 V
Rated current:	16 A
Locking device:	Integrated, can only be removed with special tool
Regulations:	DIN VDE 0606 T 200
Approvals:	DIN VDE 0606 T 200
Type of protection:	IP 20, DIN VDE 0470 IP 40 with protective cover, in preparation
Mating/disconnect cycles:	approx. 50 – 100 insertions/withdrawals at an ohmic load of 16 A
Rated impulse voltage:	4 kV / 250 V
Material:	
Insulating part:	Thermoplastic, halogen-free
Contact parts:	Plated brass
Screws:	Zinc-plated steel
Continuous temperature:	
Insulation components:	100° C
Cables :	70° C
Ambient conditions:	Pollution degree 2 according to DIN VDE 0110 Part 1 Definition: Only non-conductive pollution occurs. Occasional transient conductivity due to moisture condensation must be taken into account. Example: Private homes, retail sites and other commercial buildings
Coding:	Mechanical coding symbolized by color code white and black with the same mechanical coding All components available for delivery in these colors.

General:	Protection against inadvertent contact is guaranteed even when disconnected. Ground conductor is leading. The live component must be a female connectoraccording to regulations. It is not possible to install cable in a ring circuit.
Note :	Compliance with VDE 0606 – T 200 will not automatically prevent a dangerous non-polarization with other installation connector systems. Installation system GST 15i3 is not a substitute for the national connector and outlet system for home applications. A dangerous non-polarization is impossible with systems that are defined in the standards of IEC 60309, IEC 60320 and IEC 60906 or with the national connector and outlet systems for home applications.

Technical data

Connector:

Variations:	Female and male connectors with strain relief
Type of connection:	Screw, M 3
Torque:	max. 0.5 Nm
Wire range:	0.75 – 1.5 mm^2
Sheath strip length:	L, N: 20 mm, Ground: 28 mm
Insulation strip length:	7+1 mm
Strain relief:	Independent of the upper housing part Cable type: H05VV, NYM General: for cables of 5.5 – 9.0 mm available on request
Flammability load:	0.01 kWh

Snap-in, appliance coupler:

Variations:	Female and male connectors with frames for snap-in in housing cut-out
Type of connection:	Screw, M 3
Torque:	max. 0.5 Nm
Wire range:	0.5 – 1.5 mm^2
Insulation strip length:	8 mm
Housing material thickness:	Frame for snap-in into 0.5 – 1.5 mm thick walls
Flammability load:	0.01 kWh

Cable, pre-assembled:

Variations:	Connection cable, Female – Male Connection cable, Female – Free End Connection cable, Male – Free end	
Type of connection:	screw, M 3	
Free wire ends:	Sheath strip length Insulation strip length	20 mm 8 mm, with ferrules
Cable:	With halogen (PVC) Halogen-free	H05VV-F 3G1.5 S05Z1Z1/F 3G1.5
Cable length:	0.2 – 10 m; other lengths available on request	
Flammability load:	Connection cable: Connection cable:	0.02 kWh + 0.4 kWh/m 0.01 kWh + 0.4 kWh/m

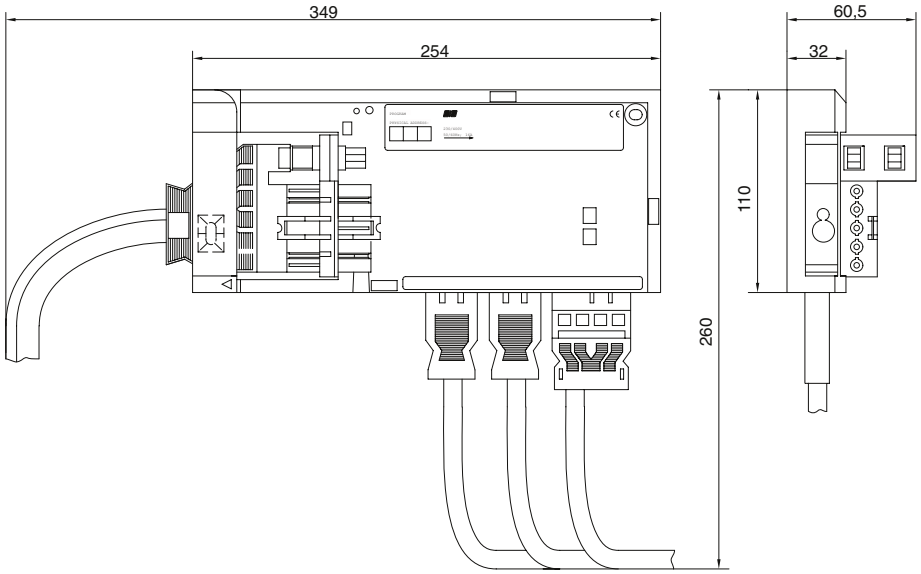
Technical data

Technical data

Mounting dimensions *gesis*® RC

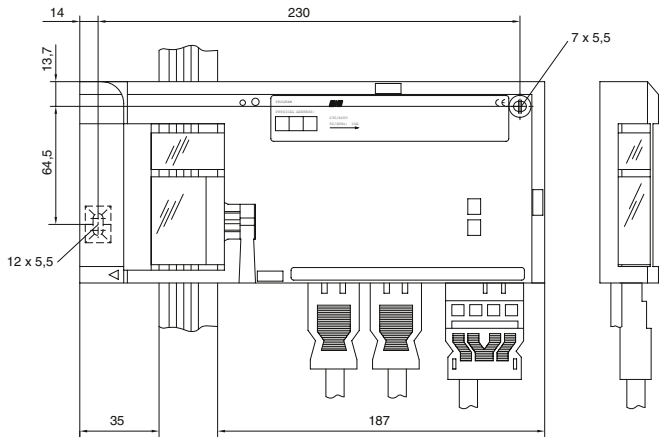
when using round supply cable

Dimensions in mm



when using flat cable for supply

Dimensions in mm



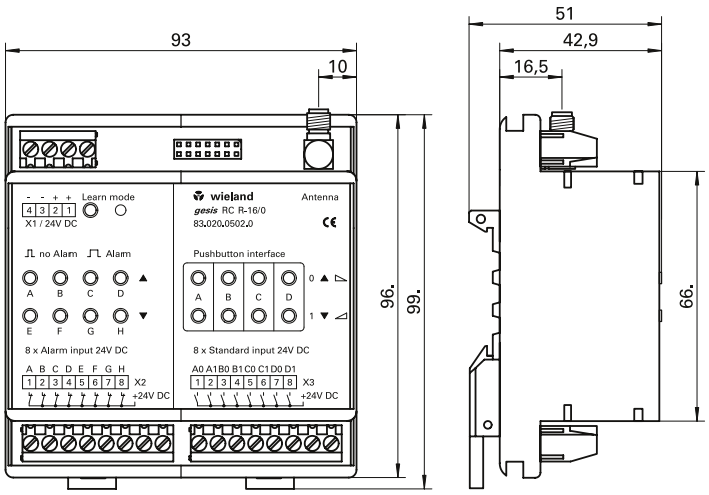
when using flat cable for supply

Dimensions in mm

Mounting dimensions *gesis*® RC R-16/0

for installation in *gesis* RAN

Dimensions in mm



Radio technology in general:

EnOcean – an innovative radio system

The new ***gesis*** RC device series uses our partner's radio system EnOcean. This new, innovative radio system provides major benefits compared to the systems available on the market.
Industrial buildings benefit from maintenance-free switches (no batteries required) and an almost unlimited number of radio channels. The switches are identified with unique numbers for their clear assignment to the switching outputs. A total of over 4 billion numbers are available for identification. A switch with EnOcean radio technology emits less high-frequency radiation than a conventional switch.

Considering the range of radio technology:

EnOcean radio transmitters (such as the switches) send event-controlled telegrams to the EnOcean radio receiver. In general, there is no radio transmission unless a switch/sensor is operated. The receiver checks the incoming telegrams and uses them to control its outputs. Due to the transmission technology patented by EnOcean, misinterpretation is excluded. As the transmission system is not restricted to a limited number of channels, plans for avoiding incorrect switching are not necessary.
Since the radio signals are electromagnetic waves, the signal is dampened (becomes weaker) on its way from the transmitter to the receiver. This means that the field intensity decreases as the distance to the transmitter increases. When the receiver is too far away from the transmitter, it can no longer receive the telegrams. Please also note that the range is decreased by specific materials and that electrically conductive materials in particular have a negative impact. The construction materials used in the building therefore have a major influence on the radio range.

General:

Electrically conductive construction materials such as aluminum, metal, metal film or carbon fibers decrease the range.
The intensity of the radio signal received not only depends on the obstacle's thickness, but also on the angle in which it is positioned to the transmitter. Walls that are positioned at an angle to the transmitter-receiver connection have a greater attenuating effect as equally thick walls that are positioned vertically to the radio waves' path.
Radio shadows might be created behind objects made of metal or metal nets.
In this case, proper signal receipt is no longer guaranteed and has to be considered in planning.

Ceilings and walls:

Transparent partitions:	typically 30 m range in aisles, 100 m in halls
Plaster walls / dry wood:	typically 30 m range, through max. 5 walls
Brick walls / concrete:	typically 20 m range, through max. 3 walls
Steel-enforced concrete walls/ceilings:	typically 10 m range, through max. 1 ceiling

Fire protection walls, elevator shafts, stairwells and supply areas should be regarded as shields.

Other materials between transmitter and receiver, which decrease the range:

- Insulating material on metal film
- Lead glass or metal-plated glass
- Steel furniture
- Suspended ceilings made of metal (when the receiver is installed in the suspended ceiling)
- ESD floors or floor plates with an aluminum surface
  (when the receiver is installed in a raised floor)

Installation of the transmitter:

When the transmitter is installed on a metal surface, the range might be reduced as well.

Other high-frequency transmitters:

The distance between EnOcean transmitters and transmission devices from other suppliers, which also use high-frequency signals, should be at least 0.5 m (for example computers, audio and video systems).

Technical data

Radio technology:

Radio frequency		868.3 MHz	
Bandwidth		280 kHz	
Range		see under "General" also	
during operation	Outputs:	Switching output and window treatment outputs no transmission function	
	Transmitter:	Switch, switch insert and alarm transmitter 300 m nominal range	
in learning mode	Switching output	83.020.0500.0	Receipt reduced to approx. 5 m
	Window treatment output	83.020.0501.0	Receipt reduced to approx. 5 m (set to coasting)
	Window treatment output	83.020.0501.1	Receipt not reduced
	Alarm transmitter	83.020.0502.0	300 m nominal range
Transmission power		max. 10 mW, only during telegram transmission	
Telegram		EnOcean, patented transmission technology	
Compatibility		Compatible with products using EnOcean technology	

Switching loads per output:

gesis RC V-0/4		83.020.0500.0	
Switching voltage		230 V	
Nominal current		16 A ohmic load	
Filament lamp load		max. 2000 W	
Fluorescent lamps		Conventional electronic ballast	
	uncompensated	18 W	60
		36 W	30
		58 W	18
	compensated	18 W	8 (max. capacity 35µF)
		36 W	7 (max. capacity 35µF)
		58 W	5 (max. capacity 35µF)
	Electronic ballast from Siemens/Osram		
		18 W	15
		36 W	12
		58 W	10
HQL / HQI		max. 250 W at a compensation of 21µF	
Minimum load		0.5 A at 230 V	
gesis RC V-0/2W AL 1PH		83.020.0501.1	
Switching voltage		230 V	
Nominal current		5 A ohmic load	
Switching load		575 V A / at 230 V and cos φ = 0.4	

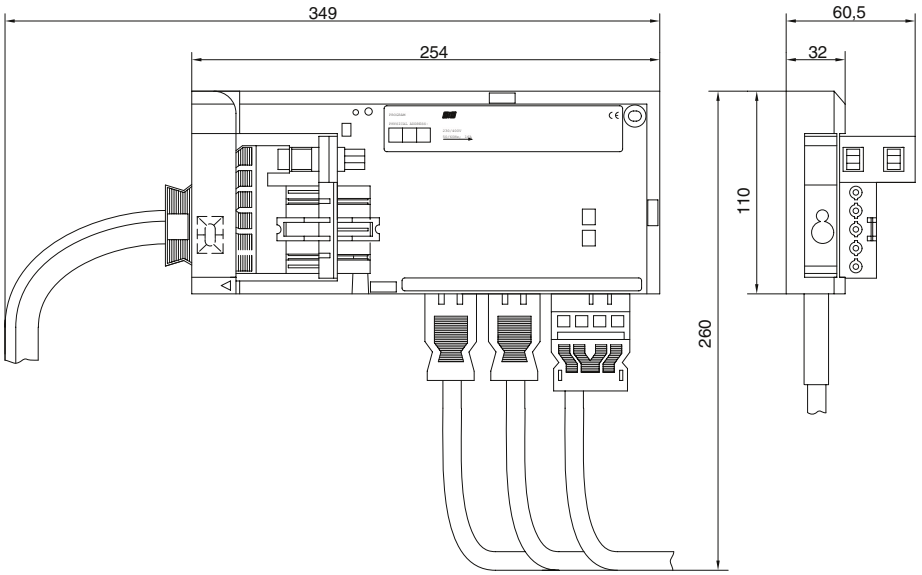
Accessories *gesis*® EIB V

ETS product database	00.000.0066.1 1 www.gesis.com Part No. Std. Pack	The current Wieland product database is available for download or on data carrier on request Floppy disk or for download from the Internet

Mounting dimensions *gesis*® EIB V

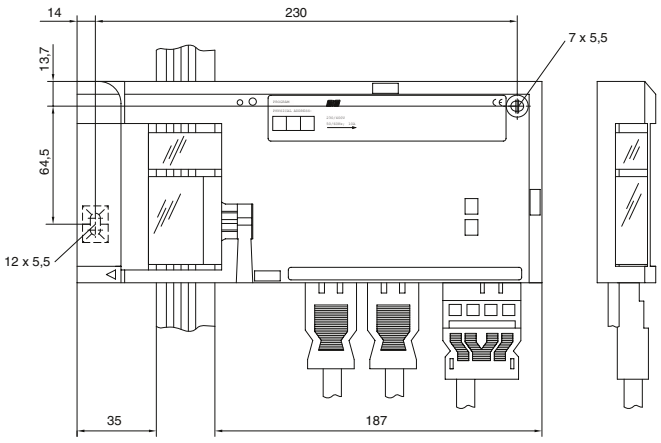
when using round cable for supply

Dimensions in mm



when using flat cable for supply

Dimensions in mm



3 phase and single-phase connection

Differentiated by the part number:

Devices from series ***gesis*** EIB V with a part number ending in 0 have a 3 phase mains connection, while devices with part numbers ending in 2 have a single-phase mains connection.

The difference:

The 3 phase devices are supplied with PE, N, L1, L2 and L3. All five pins of the GST18i5 supply are occupied and used in the device.
The single-phase version is also supplied with a GST18i5 female connector. However, only the conductor connected to pin 2 of the female connector is used in the device as the outer conductor.

Connection of different outer conductors in the single-phase version:

If, for each device, the outer conductor L2 does not have a load , another outer conductor will have to be connected to pin 2 of the female connector. When using a flat cable, this can only be implemented by an adapter cable between the flat cable output and the device. This cable is available on request as a cable assembly.

Functionality of *gesis* EIB V:

Type	Part No.	Function
gesis EIB V-0/2W SI	83.020.0211.0	1.1; 1.4; 3.1; 3.2; 3.3; 3.4; 3.5; 3.7; 3.8;
gesis EIB V-0/2W SI 1PH	83.020.0211.2	3.9; 3.11; 3.12; 3.13
gesis EIB V-0/2+1W	83.020.0212.0	1.1; 1.2
gesis EIB V-0/2+1W 1PH	83.020.0212.2	2.1; 2.2; 2.3; 2.5; 2.6;2.7;
		3.1; 3.3; 3.4; 3.5; 3.6; 3.11; 3.12
gesis EIB V-0/2SD	83.020.0213.0	1.1; 1.2; 1.3; 1.4
gesis EIB V-0/2SD 1PH	83.020.0213.2	4.1; 4.2; 4.3; 4.4; 4.5
gesis EIB V-0/6	83.020.0214.0	1.1; 1.2; 1.3; 1.4
		2.1; 2.2; 2.3; 2.5; 2.7
gesis EIB V-0/2W	83.020.0216.0	1.1
gesis EIB V-0/2W 1PH	83.020.0216.2	3.1; 3.3; 3.4; 3.11; 3.12
gesis EIB V-56/4 (RC)	83.020.0220.0	1.1; 1.2; 1.4
		2.1; 2.2; 2.3; 2.5; 2.7;
		5.1;
gesis EIB V-0/4B	83.020.0225.0	1.1; 1.2; 1.3; 1.4
gesis EIB V-0/4B 1PH	83.020.0225.2	2.1; 2.2; 2.3; 2.4; 2.5; 2.6; 2.7; 2.8

The following functions/parameters can be set via software:

1. General functions
   - 1.1 Response to bus voltage drop
   - 1.2 Response to bus voltage recovery
   - 1.3 Scenario control
   - 1.4 Disable function
2. Switching functions
   - 2.1 ON delay
   - 2.2 OFF delay
   - 2.3 Stairwell function
   - 2.4 Flashing function
   - 2.5 Status message automatically sent or on request
   - 2.6 Logic combinations possible
   - 2.7 Break contact or make contact optional
   - 2.8 Inversion of switching object (input object)
3. Window treatment functions
   - 3.1 Response to alarm
   - 3.2 Response after termination of an alarm
   - 3.3 Monitoring time setting
   - 3.4 Setting the – travel time – window-blind slats
     – reverse break – security position
     – reverse the direction of rotation
   - 3.5 Fanning after a Down command
   - 3.6 Approach to a parameterized fixed position
   - 3.7 Positioning of the shading height and the slat angle
   - 3.8 Automatic travel time recognition
   - 3.9 Setting the slat adjustment time (multiple steps)
   - 3.10 Saving and calling specific positions
   - 3.11 Use as rolling actuator (no incremental command)
   - 3.12 Use as motor actuator (continuous operation)
   - 3.13 Status feedback of the positions automatically or on request
4. Dimming functions
   - 4.1 Setting the control voltage limits
   - 4.2 Setting the dimming time
   - 4.3 ON/OFF settable via dimming function
   - 4.4 Dimming response after receipt of a value telegram
   - 4.5 Controllable lighting value on switch-on
   - 4.6 Status feedback of the switching or dimming status automatically or on request
5. Input functions via radio (RC)
   - 5.1 Input selectable as:
     – Switching function/edge evaluation (ON, OFF, toggle function)
     – Window treatment function (up/down; stop/slat adjustment command)
     – Dimming function (ON/brighter; OFF/darker, toggle)
     – Value transmission function
     – 1 byte evaluation EnOcean ORG6
     – 1 byte data transfer 1:1 transmission
     – 4 byte evaluation ORG7 EnOcean (transfer of a selectable 1 byte segment from the 4 byte EnOcean telegram) 1:!
     – Alarm evaluation from the Wieland alarm transmitter

Technical data

Switching loads per output:

gesis EIB V-0/2W SI		83.020.0211.0
gesis EIB V-0/2W SI 1PH		83.020.0211.2
gesis EIB V-0/2W		83.020.0216.0
gesis EIB V-0/2W 1PH		83.020.0216.2
gesis EIB V-0/2+1W	window treatment outputs only	83.020.0212.0
gesis EIB V-0/2+1W 1PH	window treatment outputs only	83.020.0212.2

Switching voltage		230 V
Nominal current		16 A ohmic load
Switching load		575 VA / at 230 V and cos φ = 0.4

gesis EIB V-0/2+1W	switching outputs only	83.020.0212.0
gesis EIB V-0/2+1W 1PH	switching outputs only	83.020.0212.2
gesis EIB V-0/2SD	switching outputs only	83.020.0213.0
gesis EIB V-0/2SD 1PH	switching outputs only	83.020.0213.2

Switching voltage			230 V
Nominal current			16 A ohmic load
Indicator load			max. 2000 W
Fluorescent lamps			Conventional electronic ballast
	uncompensated	18 W	60 pcs.
		36 W	30 pcs.
		58 W	18 pcs.
	compensated	18 W	8 pcs. (max. capacity 35µF)
		36 W	7 pcs. (max. capacity 35µF)
		58 W	5 pcs. (max. capacity 35µF)
	Electronic ballast from Siemens/Osram		
) 18 W	15 pcs.		
		36 W	12 pcs.
		58 W	10 pcs.
	Dimmable electronic ballast	18 W	13 pcs.
		36 W	11 pcs.
		58 W	8 pcs.
HQL / HQI			max. 250 W at a compensation of 21µF
Minimum load			2.5 V A at 230 V

gesis EIB V-0/2SD	Control outputs	83.020.0213.0
gesis EIB V-0/2SD 1PH	Control outputs	83.020.0213.2

Control voltage	1 – 10 V (electronically controlled resistor)
Nominal current	max. 50 mA of the connected electronic ballast

gesis EIB V-0/6	83.020.0214.0

Switching voltage	230 V
Nominal current	16 A ohmic load
Switching load	max. 35µF at 230 V

Technical data

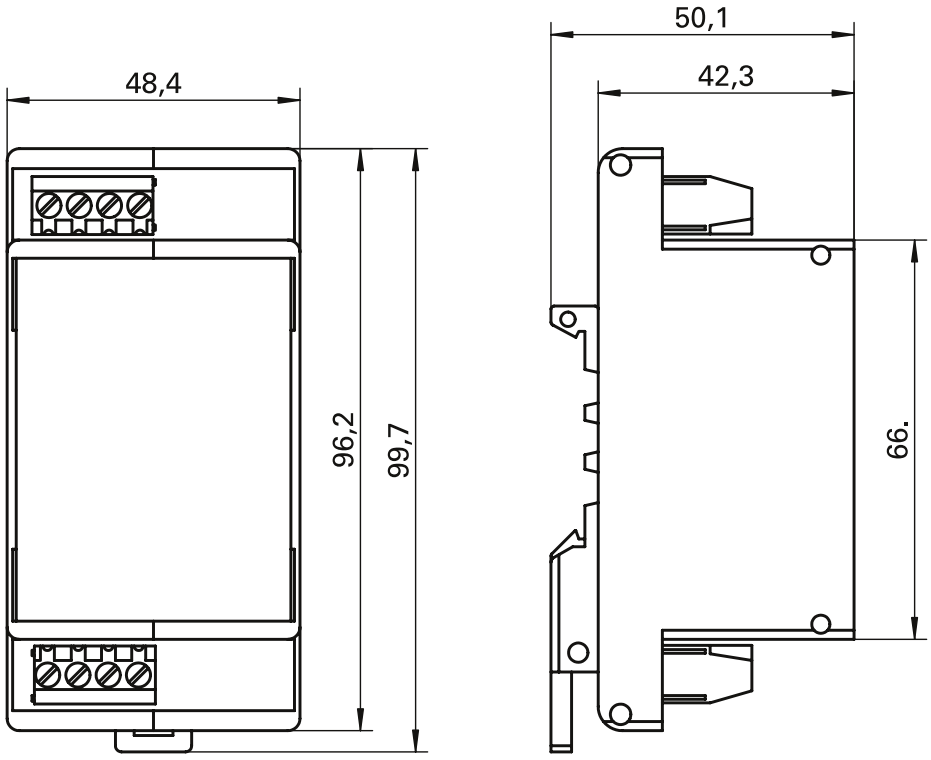
gesis EIB V-0/4B		83.020.0225.0	
gesis EIB V-0/4B 1PH		83.020.0225.2	
gesis EIB V-56/4 (RC)		83.020.0220.0	
Switching voltage		230 V	
Nominal current		16 A ohmic load	
Indicator load		max. 2700 W	
Fluorescent lamps		Conventional electronic ballast	
	uncompensated	58 W	28 pcs.
	compensated	58 W	15 pcs (capacity 15 x 4.7 µF)
	Electronic ballast from Siemens/Osram		
) 18 W	30 pcs.		
		36 W	20 pcs.
		58 W	17 pcs.
HQL / HQI		max. 600 W at a compensation of 70 µF	

Accessories *gesis*® RM

ETS product database	00.000.0066.1 1 www.gesis.com Part No. Std. Pack	The current Wieland product database is available for download or on data carrier on request. Floppy disk or for download from the Internet

Mounting dimensions for all devices in series *gesis*® RM

Dimensions in mm



Installation height including mounting plate (if required):
TH35-7.5 accord. to DIN 60715 = approx. 53 mm
TH35-15 accord. to DIN 60715 = approx. 61 mm

Brief description of the device combination *gesis*® EIB RM-BAS and *gesis*® RM expansion modules

The devices of series ***gesis*** RM provide protection degree IP00.

For this reason they must be installed in a ***gesis*** RAN (distribution box with pluggable connections from the ***gesis*** CON connector series) or a similar housing.

As the expansion modules can be selected from the ***gesis*** RM device range only with the restriction being a maximum of four expansion modules, the arrangement can be simply adapted to the requirements of various systems.
Binary inputs 8-fold, switching outputs 4-fold, window treatment outputs 2-fold, switching/dimming outputs 2-fold, semiconductor outputs 4-fold and window treatment outputs 2-fold for 24V DC applications are available as expansion modules. Power supply unit
gesis RM-PS is required to operate a base module with attached expansion modules.

Despite the maximum expansion level with, for example, 32 inputs and the flexibility of the module block with its selectable configuration, the entire arrangement only occupies one physical address within EIB. It is managed by the base module just like the entire application program.

The expansion modules' functionalities are defined through parameter settings in the base module.
As the relevant parameter sets are quite extensive, almost all requirements can be fulfilled. For example, the window treatment outputs for 230 V motors all include the option for positioning the shading height and slat angle. Each output has its own complete parameter set, which can be set independently of all the others. With a maximum number of 114 group addresses and 114 assignments, which are managed in a dynamic memory with a maximum of 228 inputs, the system's limits are rarely approached.

The device arrangement fulfills both the KNX and the EIB requirements and can be loaded with ETS version ETS2 V1.1 and higher.

Application program

The application program is loaded from the PC via EIB into the base module by using ETS. The parameter settings, module addresses and the assigned group addresses are managed in the base module. The expansion modules are driven by the base module or transfer their status into the bus system via the base module. The expansion modules must be connected to the relevant slots of the base module according to the software settings, so that the entire arrangement works properly.
It is not necessary to set the module addresses on the expansion modules.

Physical address – module address

The module addresses are independent of the base module's physical address. They can be regarded as additional sub-addresses, but are not relevant within the topology of the bus system and cannot be configured there. Although the expansion modules can be created in ETS for device documentation purposes, they do not have their own physical address.

The entire module block is held in the system as one single physical address, independent of the number of expansion modules attached.

Module addresses – expansion modules

A base module can manage a maximum of four expansion modules.

The expansion modules are connected to the relevant slot of the base module according to the module address set in the software. Additional settings for the device arrangement are not required.

Functionality of *gesis* RM:

All functions are configured in the base module.

Type	Part No.	Functions
gesis EIB RM-BAS	83.020.0400.0	Management of max. 4 expansion modules
gesis RM-PS	83.020.0401.0	Power supply for one base module including four expansion modules
gesis RM-8/0	83.020.0402.0	5.1 to 5.7
gesis RM-0/4	83.020.0403.0	1.1; 1.2; 1.4 2.1 to 2.5
gesis RM-0/2W SI	83.020.0404.0	1.1; 1.2; 1.4 3.1 to 3.15
gesis RM-0/2SD	83.020.0405.0	1.1; 1.2; 1.3; 1.4 4.1 to 4.6
gesis RM-0/4 HL	83.020.0406.0	1.1; 1.2; 1.4 2.1 to 2.5
gesis RM-0/2W DC	83.020.0407.0	1.1; 1.2; 1.4 3.1; 3.2; 3.3; 3.4;3.5; 3.11; 3.12 (3.6; 3.8; 3.9; 3.10; 3.13; 3.14; 3.15)*

( )* Due to the highly load-dependent travel times of the connected DC drives, the resulting positioning is not always satisfactory in all applications. If the function is used nevertheless, it should be tested in advance in a sample configuration.

The following functions/parameters can be set via software:

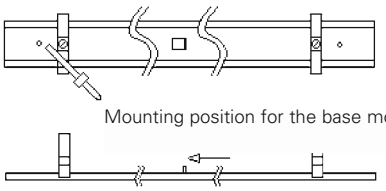
1. General functions
   - 1.1 Response to bus voltage drop
   - 1.2 Response to bus voltage recovery
   - 1.3 Scenario control
   - 1.4 Disable function
2. Switching functions
   - 2.1 ON delay
   - 2.2 OFF delay
   - 2.3 Stairwell function
   - 2.4 Status report automatically or on request
   - 2.5 Break contact or make contact operation selectable
3. Window treatment functions
   - 3.1 Response to alarm
   - 3.2 Response after termination of an alarm
   - 3.3 Monitoring time setting
   - 3.4 Setting the – travel time – window-blind slats – reverse break – security position – reverse the direction of rotation
   - 3.5 Fanning after a Down command
   - 3.6 Positioning of the shading height and the slat angle
   - 3.7 Automatic travel time recognition
   - 3.8 Travel time input via parameters
   - 3.9 Setting the slat adjustment time (multiple steps)
   - 3.10 Number of slat steps
   - 3.11 Use as rolling actuator (no step command)
   - 3.12 Use as motor actuator (continuous operation)
   - 3.13 Status feedback of the positions automatically or on request
   - 3.14 Setting the value range for the shading height
   - 3.15 Memory function of the slat angle after a travel command
4. Dimming functions
   - 4.1 Setting the control voltage limits
   - 4.2 Setting the dimming time
   - 4.3 ON/OFF settable via dimming function
   - 4.4 Dimming response after receipt of a value telegram
   - 4.5 Controllable lighting value on switch-on
   - 4.6 Status feedback of the switching or dimming status automatically or on request
5. Input functions
   - 5.1 Evaluation of the inputs as:
     - Switch operation
     - Window treatment switch
     - Dimming switch
     - Switch used to send values
     - Switching edges
   - 5.2 Interpretation of short and long switch operation
   - 5.3 Defined ON, OFF or toggle
   - 5.4 Inversion of the pin assignment (in pairs)
   - 5.5 Reaction to switching edge with ON, OFF, or toggle telegrams
   - 5.6 Automatically send or suppress start values
   - 5.7 Cyclic transmission

Technical data

Switching loads per output:

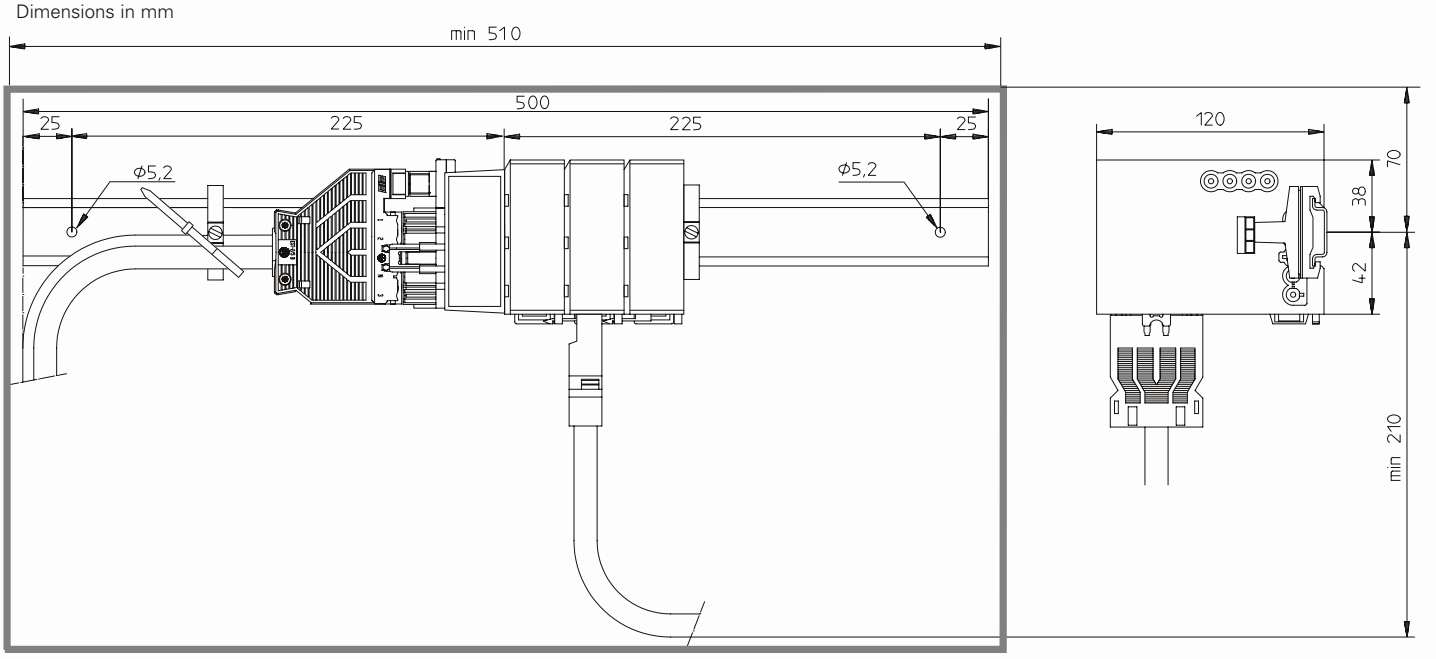
gesis RM-0/4		83.020.0403.0	
Switching voltage		230 V	
Nominal current		16 A ohmic load	
Filament lamp load		max. 2700 W	
Fluorescent lamps		Conventional electronic ballast	
	uncompensated	58 W	28 pcs.
	compensated	58 W	15 pcs (capacity 15 x 4.7 µF)
	Electronic ballast from Siemens/Osram		
		18 W	30 pcs.
		36 W	20 pcs.
		58 W	17 pcs.
HQL / HQI		max. 600 W at a compensation of 70 µF	
gesis RM-0/2W SI		83.020.0404.0	
Switching voltage		230 V	
Nominal current		8 A ohmic load	
Switching load		575 V A / at 230 V and cos φ = 0.4	
gesis RM-0/2SD		83.020.0405.0	
Switching voltage		230 V	
Nominal current		16 A ohmic load	
Fluorescent lamps		Conventional electronic ballast	
	dimmable electronic ballast	18 W	21 pcs.
		36 W	16 pcs.
		58 W	13 pcs.
Control voltage		1 – 10 V (electronically controlled resistor)	
Nominal current		max. 50 mA of the connected electronic ballast	
gesis RM-0/4 (HL)		83.020.0406.0	
Switching voltage		12 – 230 V AC/DC	
Nominal current		0.5 A	
gesis RM-0/2W DC		83.020.0407.0	
Switching voltage		6 – 24 V DC	
Nominal current		5 A as total current of both outputs	

Accessories *gesis*® EIB M2

Mounting set DIN rail with integrated mounting clip, two end clamps and cable connector Length: 500 mm	99.002.9999.9 5	 Mounting position for the base module
ETS Product database	00.000.0066.1 1 www.gesis.com	You can receive the Wieland product database on floppy floppy or by downloading it from the internet
	Part No. Std. Pack	

Mounting dimensions *gesis*® EIB M2

Dimensions in mm



Brief description of device series *gesis*® EIB M2

Modular device series ***gesis*** EIB M2 is designed for surface mounting in suspended ceilings or raised floors. The functionality of a device arrangement does not have to be defined in advance, but can be assembled modularly to the requirements of the system consisting of window treatment switches, binary inputs and switching/dimming actuators. A module block consisting of one base module and a maximum of six expansion modules represents one physical address on the bus.

The connection cables to and from the modules have a pluggable design. The connectors, cable assemblies and the accessories are taken from the ***gesis*** CON connector system. By combining the modular EIB devices ***gesis*** EIB M2 and the connector system ***gesis*** CON a maximum of flexibility can be achieved for the electrical installation in the shortest installation time.

Depending on the arrangement of the modules, window treatments, lighting groups or other consumer devices can be controlled via the EIB. By using input modules you can query potential-free contacts and report their status to the EIB. The required voltages are provided both on the outputs and on the inputs.

The modules are supplied power via connectors on the base module. The mains connections N, PE, L1, L2 and L3 are transferred from module to module. Access to EIB is provided by the base module, in which the bus interface is integrated. A module-internal bus, which is independent of the EIB, is used for communication between the modules. When the modules are plugged together, the power supply and the module-internal bus are transferred automatically from module to module.

Application program

The application program is loaded from the PC via EIB into the base module by using ETS. The parameter settings, module addresses and the assigned group addresses are managed in the base module. The expansion modules are contacted via the module-internal bus or use it to transfer their information to the base module. The module addresses must be set in the expansion modules in order to ensure that data transfer within the modules functions properly. The type of expansion module and the corresponding parameters are assigned to these module addresses in the application program.

A detailed description of all functions is available in the application program description of the individual modules.

Higher-level functions of the base module

The base module manages the parameters of all the connected expansion modules. Furthermore, a disable object and a security/alarm object are available as well. These objects are not assigned to any specific modules, but are evaluated in the relevant modules as required.

Module address – physical address

The module addresses are independent of the base module's physical address. They can be regarded as additional sub-addresses. The module addresses, however, are available internally and in the ETS only through the parameter settings and objects.

The entire module block is held in the system as one single physical address, independent of the number of expansion modules attached.

Module addresses

The base module can manage a maximum of six module addresses.

The module addresses are set on the expansion modules by using a rotary switch.
The module addresses of the expansion modules can be selected from 1 through 6, with the order being irrelevant.
If module address 0, 7, 8 or 9 is set, the module will not be contacted and will not be included in module diagnostics.
Each module address can be assigned only once.
If the module address set on the expansion module does not match the address parameterized in the software, an error is displayed on the base module.

Functionality of *gesis* EIB M2:

Type	Part No.	Functions
gesis EIB M2-BAS	83.020.1020.0	Management of max. 6 expansion modules
gesis EIB M2-4/0	83.020.1021.0	1.3; 5.1 to 5.7
gesis EIB M2-4/0 (24)	83.020.1022.0	1.3; 5.1 to 5.7
gesis EIB M2-0/2	83.020.1023.0	1.1; 1.2; 1.3 2.1; 2.2; 2.3
gesis EIB M2-0/1Wx2	83.020.1024.0	1.1; 1.3 3.1 to 3.4
gesis EIB M2-0/1SD	83.020.1025.0	1.1; 1.2; 1.3 4.1 to 4.5
gesis EIB M2-0/2B	83.020.1026.0	1.1; 1.2; 1.3 2.1; 2.2; 2.3

The following functions/parameters can be set via software:

1. General functions
   - 1.1 Response to bus voltage drop (supply voltage still available)
   - 1.2 Response to bus voltage recovery (bus and supply voltage)
   - 1.3 Disable function
2. Switching functions
   - 2.1 ON delay
   - 2.2 OFF delay
   - 2.3 Stairwell function
3. Window treatment functions
   - 3.1 Response to alarm
   - 3.2 Setting the monitoring time
   - 3.3 Setting the – travel time – window-blind slats
     – reverse break – security position
     – reverse the direction of rotation
   - 3.4 Fanning after a Down command
4. Dimming functions
   - 4.1 Setting the control voltage limits
   - 4.2 Setting the dimming time
   - 4.3 ON/OFF settable via dimming function
   - 4.4 Dimming response after receipt of a value telegram
   - 4.5 Controllable amount of light on switch-on
5. Input functions
   - 5.1 Evaluation of the inputs as:
     – Switch operation
     – Window treatment switch
     – Dimming switch
     - Switching edges
   - 5.2 Interpretation of short and long switch operation
   - 5.3 Defined ON, OFF or toggle
   - 5.4 Inversion of the pin assignment (in pairs)
   - 5.5 Reaction to switching edge with ON, OFF, or toggle telegrams
   - 5.6 Automatically send or suppress start values
   - 5.7 Cyclic transmission

Technical data

Switching loads per output:

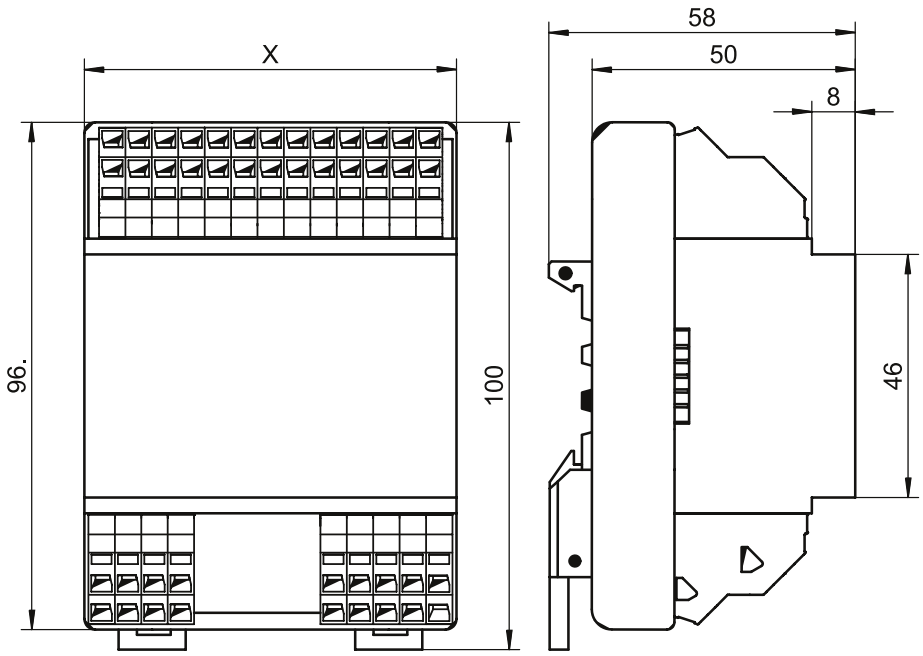
gesis EIB M2-0/2	83.020.1023.0
Switching voltage	230 V
Nominal current	16 A
gesis EIB M2-0/1Wx2	83.020.1024.0
Switching voltage	230 V
Nominal current	8 A
gesis EIB M2-0/1SD	83.020.1025.0
Switching voltage	230 V
Nominal current	16 A
Control voltage	1 – 10 V (electronically controlled resistor)
Nominal current	max. 50 mA of the connected electronic ballast
gesis EIB M2-0/2B	83.020.1026.0
Switching voltage	230 V
Nominal current	16 A

Accessories *gesis*® LON R

Master CD-ROM			LON Master CD with all necessary data for start-up of the ***gesis*** LON R products
	00.000.0069.8	1	CD-ROM
	www.gesis.com		Available for download from the download section of the ***gesis*** website on the Internet
	Part No.	Std. Pack	

Mounting dimensions *gesis*® LON R

Dimensions in mm



X = 105 mm	for ***gesis*** LON R-16/8 (24)	83.020.0310.0
X = 70 mm	for ***gesis*** LON R-8/4 (24)	83.020.0311.0
X = 105 mm	for ***gesis*** LON R-0/8	83.020.0312.0

Installation height for all ***gesis*** LON R modules including mounting rail, if required.
TH35-7.5 accord. to DIN 60715 = approx. 53 mm
TH35-15 accord. to DIN 60715 = approx. 61 mm

General information on the devices

The devices of the ***gesis*** LON R series are designed according to LON Mark and can be integrated into standard LON networks. The software provided (see master CD-ROM) enables the programming of the devices and their integration into a LON network via conventional LON Binding Tools.
The devices can be mounted on a DIN rail and have been designed for installation in a ***gesis*** RAN or a similar housing.
The ***gesis*** RAN distribution boxes are designed according to customer requirements, manufactured including internal wiring and delivered after full testing.

Operating and monitoring elements:

The operating elements are positioned on the right side of the devices behind gray fields; they can be operated by using a magnet (from a magnetic pin wall, for example).
The following magnetic switches are available.
"Reset magnet": Used to reset the device.
"Service magnet": When operated, the Neuron ID of the device is transmitted to the network.

Definition of the LED states:

LED	Color	Status	Meaning
Reset	red	OFF:	Normal operation
		ON:	Reset activated
Run	green	flashing:	Application running (normal operation)
		OFF:	Application in stop
		ON:	Application in stop
Service	yellow	OFF:	Normal operation
		ON:	No application loaded
		flashing:	Not installed in the network

Software variety:

Each of the three devices can be operated with one of three different applications, depending on the requirements.
The applications support switching applications, window treatment controls and scenario controls.

Technical data

Functionality *gesis* LON R:
Settable functions/parameters:

Type	Part. No.	Application "Direct"	Application "Scene"	Application "Sunblind"
gesis LON R-16/8	83.020.0310.0	1, 2, 3	1, 2, 4	1, 2, 5, 6, 7, 8
gesis LON R-8/4	83.020.0311.0	1, 2, 3	1, 2, 4	1, 2, 5, 6, 7, 8
gesis LON R-0/8	83.020.0312.0	1, 3	1, 4	1, 6, 7

1. Function block "Node object"
   1.1 Installation location (text field)
2. Function block "Switch object"
   2.1 Switch/sensor
   2.2 Make/break contact (when defined as switch, the break contact activates the transmission at a falling signal edge)
   2.3 Heartbeat time (defines when to send the variable, even when the value has not changed)
3. Function block "Actuator object"
   3.1 Break/make contact
   3.2 Heartbeat time (defines when to send the variable, even when the value has not changed)
4. Function block "Light controller"
   4.1 Monitoring time (for each input)
   4.2 Preferred OFF position (only effective when a monitoring time is indicated)
   4.3 OFF delay (for each output)
   4.4 Manual overwrite time (for each input)
   4.5 Heartbeat time for each output (repeat time, even when the status has not changed)
   4.6 Inversion (for each output)
   4.7 Scenario parameters
      4.7.1 ON/OFF/unchanged (for each output)
5. Function block "Sunblind setting"
   5.1 Slat step
   5.2 Jog time
   5.3 Modal time (if the switch is pressed for a longer time, the window blind travels to Up or Down end position)
   5.4 Heartbeat (repeat time for transmission telegram, even when the status has not changed)
6. Function block "Sunblind Controller"
   6.1 Function (text field)
   6.2 Angle at incremental mode
   6.3 Local interlock time
   6.4 Timeout
7. Function block "Sunblind actuator"
   7.1 Function (text field)
   7.2 Smallest slat angle
   7.3 Largest slat angle
   7.4 Window blind travel time
   7.5 Switch-over time on change of rotation
   7.6 Inversion of Up/Down outputs
8. Function block "Maintenance"
   8.1 Inversion of input for jog mode Up
   8.2 Inversion of input for jog mode Down
   8.3 Inversion of input for activation

Technical data

Information on the individual devices:

gesis LON R 16/8 (24)		83.020.0310.0	24-fold combination actuator
Inputs		16; 24 V DC (potential-free, internal supply)	
Outputs		8; (bi-stable relay, make contacts)	
Maximum switching power		16 A ohmic load per output 64 A total current for all outputs together	
Supply voltage		24 V DC, 30 mA	
LON connection		2-fold, internally bridged	
Connection technology		Spring-loaded terminals	
Wire range	solid	0,2 ... 2.5 mm²	
	fine-stranded	0,2 ... 1.5 mm²	
Available applications:	Available objects:		
	Direct	16 x switch, 8 x actuator, 1 x node object	
	Scenario	16 x switch, 1 x light controller, 1 x node object	
	Window treatment	4 x window treatment setting, 4 x window treatment controller, 4 x window treatment acutator, 1 x maintenance, 5 x switch, 1 x node object	

gesis LON R 8/4 (24)		83.020.0311.0	12-fold combination actuator
Inputs		8; 24 V DC (potential-free, internal supply)	
Outputs		4; (bi-stable relay, make contacts)	
Maximum switching power		16 A ohmic load per output 32 A total current for all outputs together	
Supply voltage		24 V DC, 30 mA	
LON connection		2-fold, internally bridged	
Connection technology		Spring-loaded terminals	
Wire range	solid	0,2 ... 2.5 mm²	
	fine-stranded	0,2 ... 1.5 mm²	
Available applications:	Available objects:		
	Direct	8 x switch, 4 x actuator, 1 x node object	
	Scenario	8 x switch, 1 x light controller, 1 x node object	
	Window treatment	2 x window treatment setting, 2 x window treatment controller, 2 x window treatment actuator, 1 x maintenance, 1 x switch, 1 x node object	

gesis LON R 0/8		83.020.0312.0	8-fold switching actuator
Outputs		8; (bi-stable relay, make contacts)	
Maximum switching power		16 A ohmic load per output 64 A total current for all outputs together	
Supply voltage		24 V DC, 30 mA	
LON connection		2-fold, internally bridged	
Connection technology		Spring-loaded terminals	
Wire range	solid	0,2 ... 2.5 mm²	
	fine-stranded	0,2 ... 1.5 mm²	
Available applications:	Available objects:		
	Direct	8 x switch, 1 x node object	
	Scenario	16 x light controller, 1 x node object	
	Window treatment	4 x window treatment controller, 4 x window treatment actuator, 1 x node object	

Switching loads per output:

gesis LON R 16/8 (24)	83.020.0310.0	24-fold combination actuator
gesis LON R 8/4 (24)	83.020.0311.0	12-fold combination actuator
gesis LON R 0/8	83.020.0312.0	8-fold switching actuator
Switching voltage	230 V	
Nominal current	16 A	

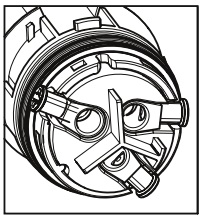
Technical data

Rated voltage:	250 V, 600 V (UL)
Rated current:	20 A
Number of poles:	3 pole (L, N, ground)
Regulations:	DIN VDE 0606 T200; VDE 0110 IEC 60999: UL 2238; CSA: C22.2 No.182.2-M1987; LR Type Approval System
Approvals:	pending VDE; UL; CSA; LR; GL; DNV
Type of protection:	IP 65, IP 66, IP 67 and IP 68 (3 m; 2 hours) Double connection being prepared
Cable assemblies:	Crimp technology, H05VV-F or H07RN-F
Conductor cross section:	1.5 mm² and 2.5 mm
Cable with free end:	Sheath strip length 35 mm, Insulation strip length 9 mm, ultrasonically welded
Locking device:	Open by using a tool: Press the screwdriver blade into the opening of the locking device and turn 90°.
Material:	Contact material: Brass, surface-plated Housing: Thermoplastic PA 66, halogen-free, V2 Sealing material: NBR
Continuous temperature:	Insulation components 100° C, cable H05VV 70° C, H07RN-F 60° C
Ambient operating temperature under full load:	Connectors 55° C (depending on the cable and lay-out); Distribution units 40° C
Glow-wire test 960° C:	For connectors, distribution units, cable assemblies and appliance couplers
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 mismating 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.

Insulation strip lengths and ferrules

all lengths in mm

Screw connection:



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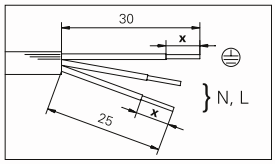
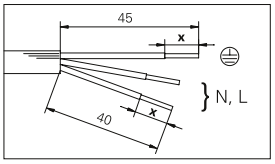
Connector



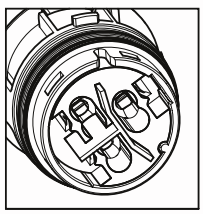
Connector, double connection



Screwdriver
PZ1
Nominal torque: 0.8 – 1.0 Nm

Conductor cross section	0.75 mm²	1.0 mm²	1.5 mm²	2.5 mm²	4 mm²	AWG 12–18
solid	8	8	8	8	8	–
fine-stranded	8	8	8	8	8	–
stranded	8	8	8	8	8	8
ultrasonically welded	8	8	8	8	8	–

Spring connection:



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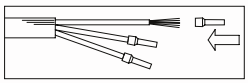
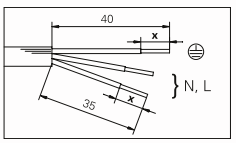
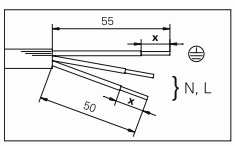
Fine-stranded and stranded wires



Connector and appliance coupler



Connector, double connection



Conductor cross section	0.5 mm²	0.75 mm²	1 mm²	1.5 mm²	2.5 mm²
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	
Ferrule accord. to DIN	46228-E0,5-10	46228-E0,75-12	46228-E1,0-12	46228-E1,5-12	
stranded		13.0 + 1	13.0 + 1	13,0 + 1	
Ferrule accord. to DIN		46228-E0,75-12	46228-E1,0-12	46228-E1,5-12	
ultrasonically welded				14,5 + 1	14.5 + 1

IP protection degrees:

Example: IP 65

1st figure 2nd figure

IP degree of protection against foreign bodies and accidental contact

	Protection against accidental contact	Protection against foreign bodies
0	No protection	No protection
1	Large parts of the body (e.g. the back of the hand)	Large foreign bodies (diameter: > 50 mm)
2	Finger	Medium-size foreign bodies (diameter: > 12 mm)
3	Tools and wires (diameter: > 2.5 mm)	Small foreign bodies (diameter: > 2.5 mm)
4	Tools and wires (diameter: > 1 mm)	Particles formed like grain (diameter: > 1 mm)
5	Complete protection against accidental contact	Dust on the surface
6	Complete protection against accidental contact	Dust ingress

IP degree of protection against ingress of water

0	No protection
1	Protection from vertically dripping water
2	Protection from vertically (up to 15°) falling water drops
3	Protection from spraying water up to 60° against the vertical
4	Protection from splashing water
5	Protection from water projected from a nozzle
6	Protection from powerful jets of water
7	Protection from temporary immersion
8	Protection from longer lasting immersion

In many applications, electrical devices and systems must work safely for many years under difficult environmental conditions. For a reliable function, water or foreign particles (such as dust, oil, soot) ingress into production systems, parking garages or outer premises must be avoided.
The requirements for IP protection vary from application to application and must be defined accordingly by the user.
For protection degree IP 68, the secondary conditions must be explicitly listed by the manufacturer (at least 1.50 m and 30 minutes).
In this case, manufacturer and user have to agree on the conditions.

Material resistance for PA 66 (housing) and NBR (sealing)

Please contact us for applications under different conditions.

UV light (use black-colored connectors)	+	Motor oil (SAE 20W/55)	+
Resistance to oil and grease	+	Nickel chloride	+
Aliphatic carbon hydride	+	Paraffin and paraffin derivates	+
Aromatic carbon hydrides	+	Phosphoric ester	+
Alcohol	+	Phthalic ester	+
Ammonia, water-free	+	Polyamide resin	+
Ammonium chloride (salmiac)	+	Polyester polyoles	+
Ammonium sulfate	+	Polyether polyoles	+
Barium chloride	+	Polyglycols	+
Beer	+	Polymeric softeners	+
Butter	+	Polyurethane resins	+
Butyl alcohol	+	Mercury	+
Calcium chloride, hydrous solution, 10%	+	Castor oil	+
Citric acid, hydrous solution, 10%	+	Salmiac	+
Ferric sulfide	+	Oxygen, RT	+
Ethyl ether	+	Lubricating oil (O-149), (not bunker fuel, oil tanker)	+
Paint, varnish, not much sulfuric acid	+	Sulfur, wet	+
Fruit juice, fruit acid	+	Sulfuric acid (verd, RT)	+
Tannic acid	+	Sulfur hexafluoride	+
Glycerin	+	Sweat	+
Glysantine, hydrous solution, 40%	+	Sebacic acid ester	+
Potassium chloride	+	Spirit	+
Caustic potash solution, hydrous solution, 10%	+	Nitric acid (10%)	+
Sodium, hydrous solution, 10%	+	Hydrochloric acid (10%)	+
Linseed oil	+	Water, RT, free from chlorine up to 80°	+
Milk	+	Water: salt water resistance, artificial, 20°C	+
Lactic acid, 20°C	+	Stannic chloride, 20°C, saturated	+

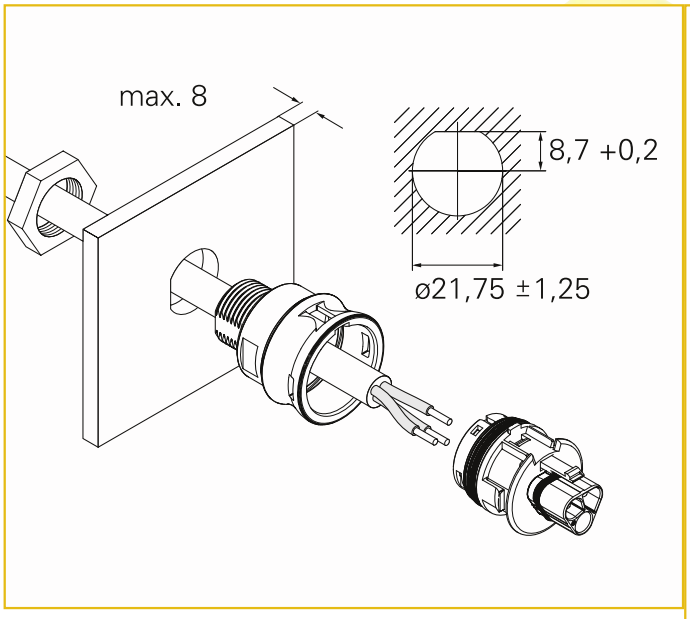
Installation instructions

Easy mounting: installation in a housing

Note:
Protection against twisting can only be guaranteed when the lower tolerance limit is ensured for the diameter of the mounting hole.

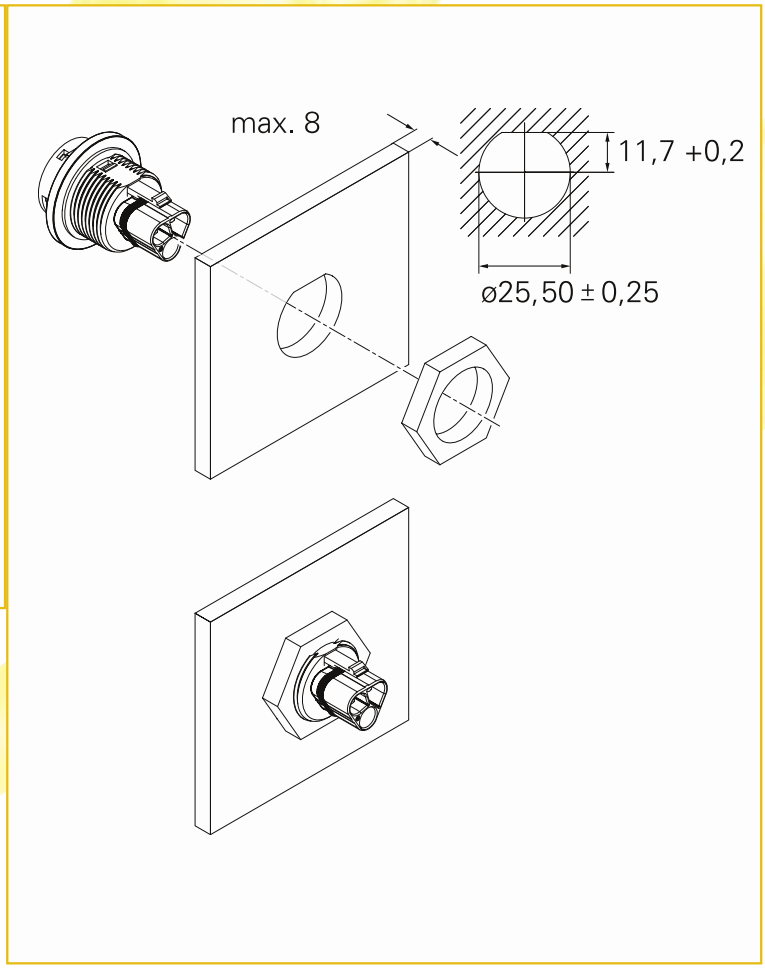
Mounting of a modular system for M20 feed-through

Dimensions in mm



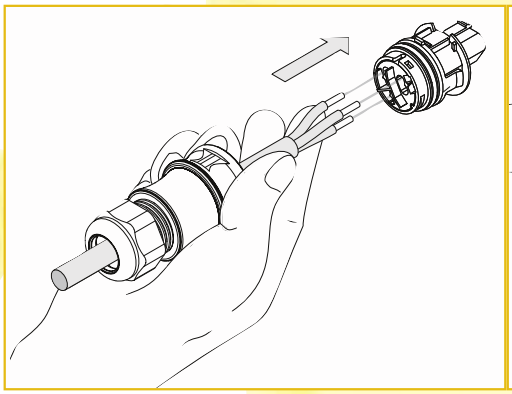
Mounting of a standard system for M20 feed-through

Dimensions in mm

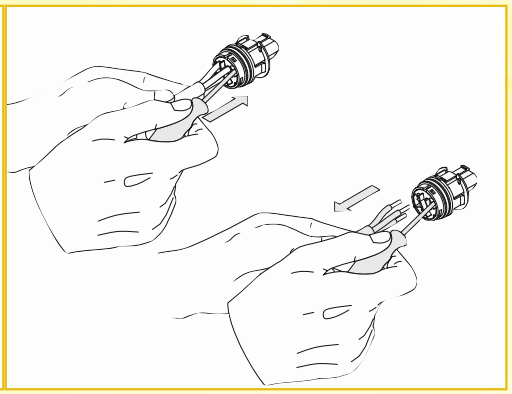


Easy handling

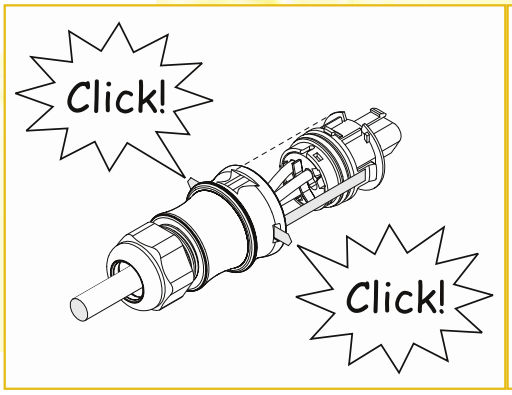
Connect the wire



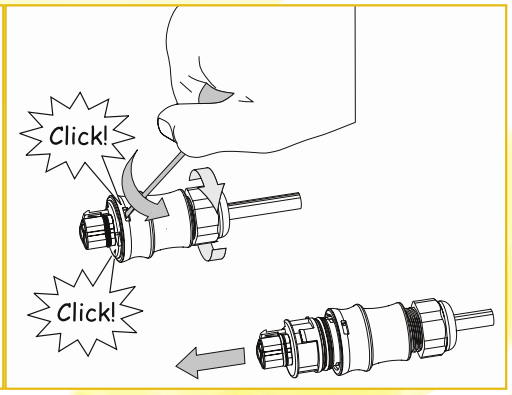
...and disconnect it



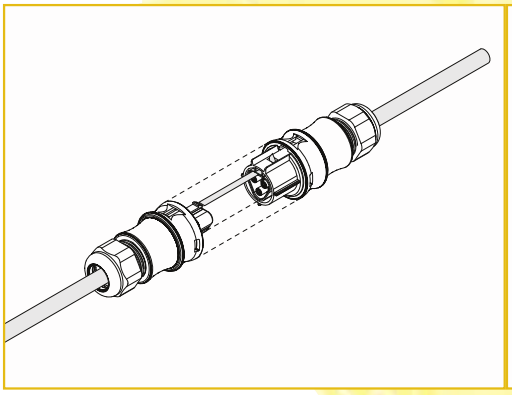
Close



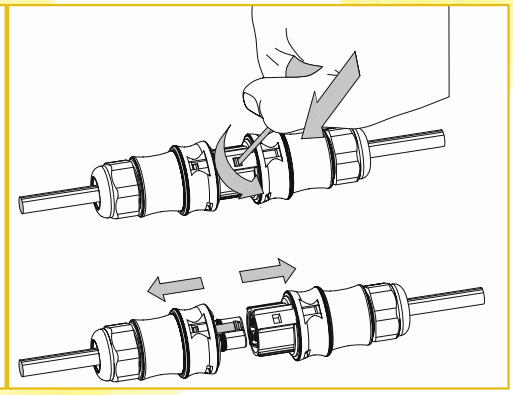
...and open



Latch



... and unlatch



Technical data

Materials:

Metal parts:	Special alloys maintain low feed-through resistance and provide a gas-tight contact area:	
	Clamping spring	Stainless CrNi steel
	Conductor bar	Tin-plated copper
Insulation material	Polyamide has excellent electrical, chemical and mechanical characteristics	
	Insulating housings	Polyamide 666
	Creepage resistance	CTI 600
	Flammability class:	UL 94-V0

fasis for TS 35 providing

– all necessary accessories
– marking systems
– approvals
– software tools
– DQS certification

Technical data

Materials:

Metal parts:	Special alloys maintain low feed-through resistance and provide a gas-tight contact area:	
	Clamping spring:	
	Clamping body/ terminal screws	Steel, zinc-plated and dichromated
	Conductor bar	Tin-plated copper
Insulation material	Polyamide has excellent electrical, chemical and mechanical characteristics	
	Insulating housings	Polyamide 666
	Creepage resistance	CTI 600
	Flammability class:	UL 94-V0

General:

The requirements for power and signal management in electrical distribution systems increase correspondingly with the increasing automation of convenience and safety functions in buildings. The growing number of circuits requires a terminal block system that enables clear wiring in confined spaces without having to limit functionality. We fulfill this task with our product series ***fasis*** BIT that is designed according to the connectivity directives for distribution systems in public and functional buildings:

Note:

The directives for the setup of high-voltage systems according to EN 60364 (VDE 100) requires an insulation test of all outgoing cables without disconnect.

Consumer units for built-in equipment up to 63A according to DIN 43871.

The information regarding cross sectional area and connection types pertains to unprepared wires without ferrules.Ferrules are not required for safe terminations.

The voltage ratings apply to the terminals in their intended application.
When different products are mounted adjacent to each other, the proper isolation distances must be adhered to,

If the ground blocks of the ***fasis*** product family are not used in block assemblies, but are mounted to the rail as single terminal blocks, end brackets have to be used.

A detailed description of technical data, the standards' requirements, and the application conditions are available under ***facts*** & DATA in our AT catalog.

CE In general, all Wieland components, which are subject to CE marking, are marked with the CE symbol.

Overview of mains types

TN mains types

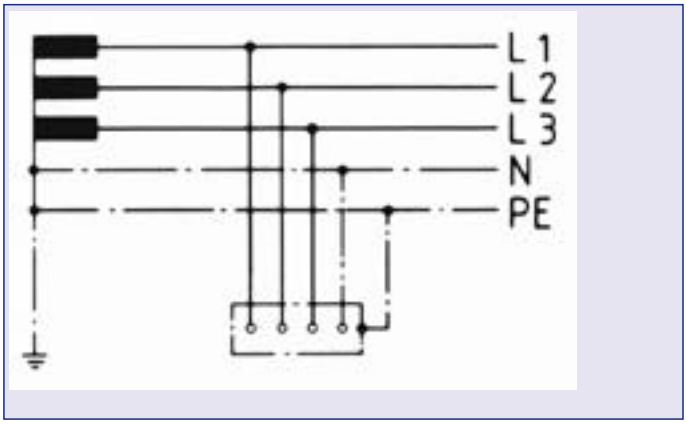


Fig. 1: TN mains in principle
Source: DIN VDE 0100 Part 410

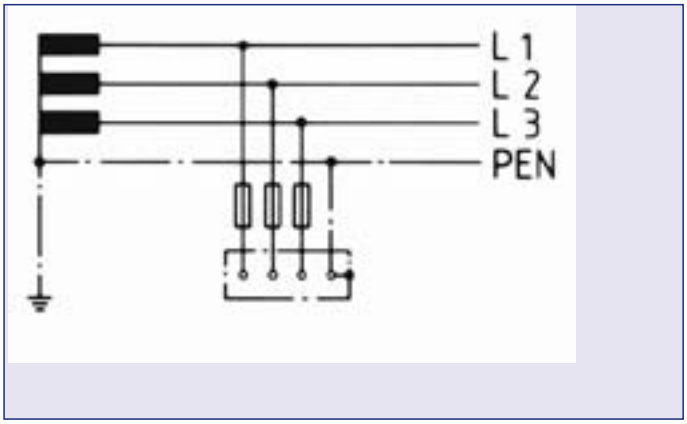


Fig. 2: TN-C network with overcurrent protection
Source: DIN VDE 0100 Part 410
(old term for the protection measure: TN system)
Neutral conductor and protective function in the entire network combined in a single conductor, the PEN conductor.

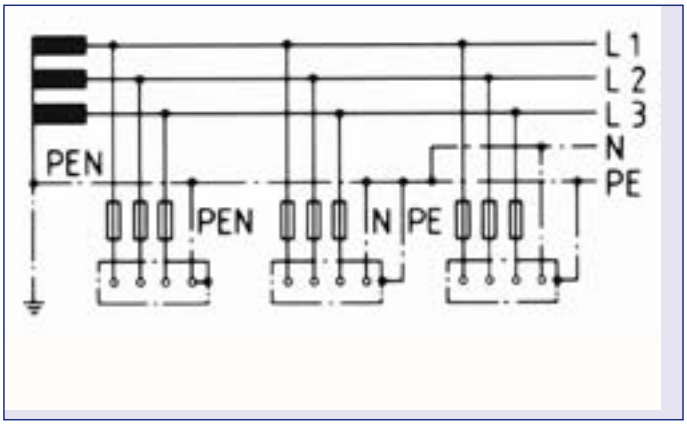


Fig. 3: TN-C-S network with overcurrent protection
Source: DIN VDE 0100 Part 410
(old term for the protection measure: TN system)

Neutral conductor and protective function in the entire network combined in a single conductor, the PEN conductor.

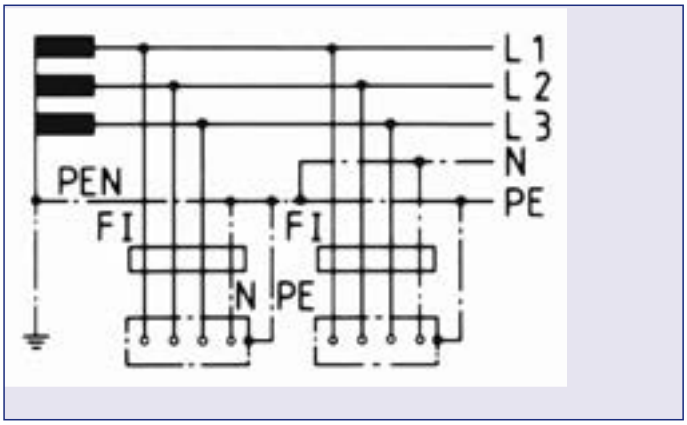


Fig. 4: TN-C-S network with residual current operated device
Source: DIN VDE 0100 Part 410
(old term for the protection measure: rapid TN system)

Neutral conductor and protective function in the entire network combined in a single conductor, the PEN conductor.

TN mains types

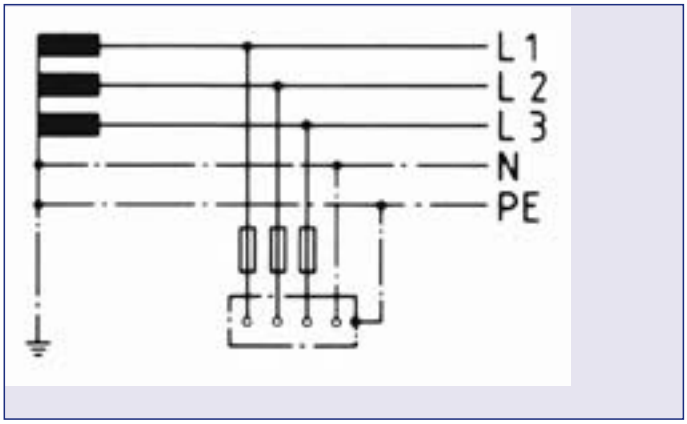


Fig. 5: TN-S network with overcurrent protection
Source: DIN VDE 0100 Part 410
(old term for the protection measure: TN system)

Neutral conductor and protective function separated throughout the network.

TT mains types

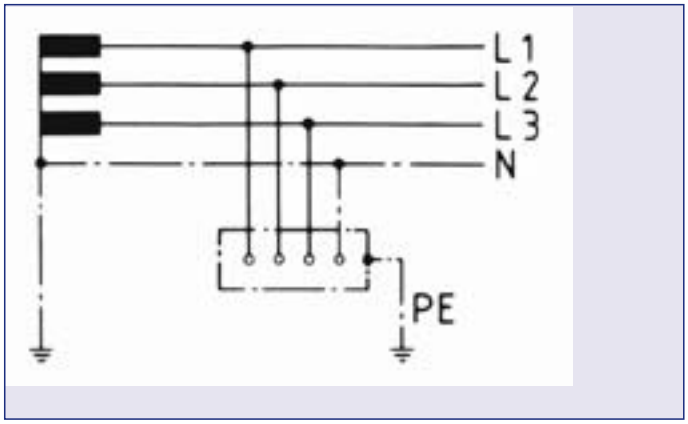


Fig. 1: TT mains
Source: DIN VDE 0100 Part 410

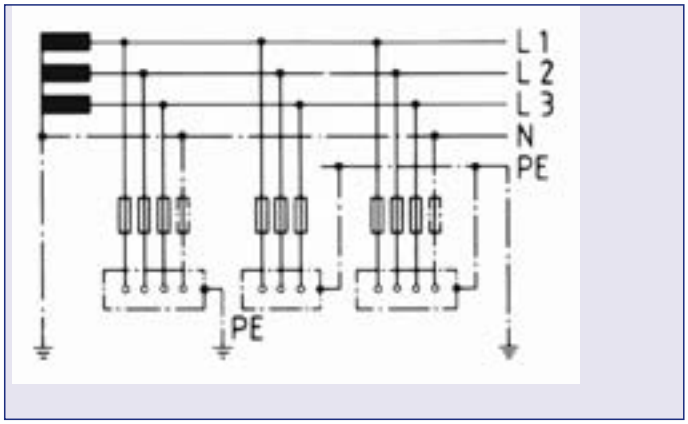


Fig. 2: TT network with overcurrent protection
Source: DIN VDE 0100 Part 410
(old term for the protection measure: protective ground)

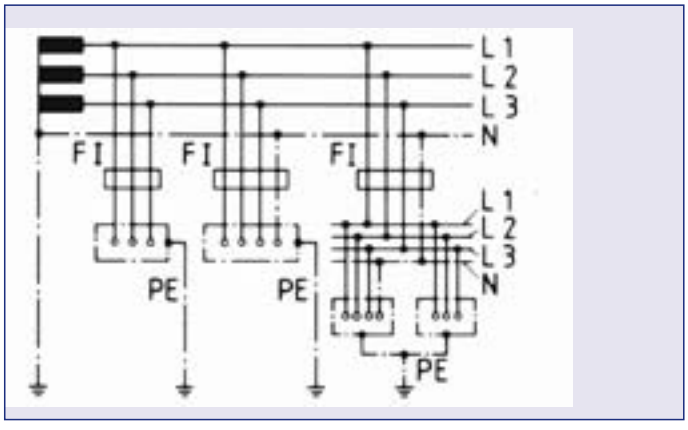


Fig. 3: TT network with residual current operated device
Source: DIN VDE 0100 Part 410 (old term for the protection measure: protective ground)

Can I wire a functional building completely with *gesis*?

Yes. All the functions of the electrical installation can be implemented from the sub-distribution panels onwards, for example device connection, distribution box, switch connection, connection of socket-outlets, three-phase a.c. wiring, wiring of installation bus.

Are there distribution units available with a *gesis* connection?

Yes. We stock both the sub-distribution panels ***gesis*** RAN which are manufactured to your specifications and the Wieland distribution panels WIV which have been designed specifically for trade show exhibit construction.

What are the prerequisites for installing *gesis*?

gesis can be installed wherever there is sufficient space for connectors and cables, for example in suspended ceilings, wire ducts, raised floors or wall racks - in short in any cavity.

I would like to install a second circuit, for example to supply the computer. Is this possible with *gesis* connectors?

Yes. A continuous and clear separation of the supply systems can be achieved using the mechanically coded ***gesis*** connectors.

Can a bus installation be made connectable with *gesis*?

Yes, by using our ***gesis*** EIB components!

Can *gesis* also be used for heavy current up to 20 A?

Yes, the ***gesis*** connectors are available in a modified form on request for countries with 20 A applications such as Australia and Japan.

Does the connection of permanently wired conductors (NYM) using connectors comply with VDE regulations (initial connection with NYM)?

This application is not excluded in any of the relevant VDE regulations. Several points must however be taken into account:

- The connecting points of cables that are not permanently wired must be relieved of tension and transverse force (strain relief and locking device).
- The supply cable (NYM) must be protected against excessive bending stress by fixing the cable or plug appropriately during the installation.
- It must be ensured that the plugs are only used in installations with a maximum load of 16 A.

It has never been in doubt that a Wieland Electric connector meets higher standards regarding safety requirements than the conventional connection with a standard European terminal (lamp-wire connector). The installation of ***gesis*** in all buildings has been completed without any problems from the governing bodies of TÜV and LGA.

What must be taken into account when the cables are bundled?

When the cables are bundled, the permitted current carrying capacity must be reduced (compared to DIN VDE 0298 section 4). This can be the case for example in cable trunking, cable trays or racks as well as in walls with heat insulation. An increase in the cable cross section (e.g. from 1.5 mm^2 to 2.5 mm^2) raises the permitted current carrying capacity.

Which technical conditions apply for three-phase and a.c. distribution panels?

Three-phase and a.c. distribution panels may be fused with a maximum of 16 A per external conductor. A three-phase protective device should be used so that all 3 fuses can be protected against short circuits if one phase fails. Alternatively, each phase can be individually fused and a separate master switch should be installed for all three phases so that the complete circuit can be disconnected to carry out repairs.

Which VDE approval refers to the use of connectors in installation technology?

VDE 0628

This norm with VDE approval applies to two pole and multipole connectors with a grounding contact, a nominal voltage of AC 250 V and AC 400/230 V as well as a nominal current of 16 A. These devices should be connected in installation systems e.g. in pre-assembled houses, furniture, cavities such as false floors, suspended ceilings etc. A prerequisite is that the ambient temperature should normally not exceed 25 °C but can occasionally reach 35 °C.

Which VDE approval applies for installation connectors used for permanent connections in fixed installations?

VDE 0606-200 as well as VDE 0606-200/A1

The application range of the current standard applies for 2 to 5 pole installation connectors with or without protective contact. The maximum rated voltage is 500 V AC, the maximum rated connection range 10 mm^2 for permanent connection in indoor installation systems according to IEC 60364.

Installation connectors provide a locking device and are designed for load-free connection and disconnect.

Which VDE approval refers to the use of flexible conductors?

VDE 0100 section 520 (chapter 5.3 “Application of flexible cables”)

The following must be connected with flexible cables:

- portable equipment
- stationary equipment whose location must be changed temporarily

These cables must be connected via male and female connectors (e.g. GST 18) or terminals in fixed housing.

VDE 0298 section 3 “Use of cables and insulated cables”

The use of flexible conductors in commercial buildings is permitted, in a similar way to workshops. Applications in false floors, false ceilings, wire ducts etc. within a building can be compared with the external conditions of a workshop.

VDE statement: The use of flexible conductors is permitted in all types of cavities.

What should be noted when connecting permanently wired conductors (NYM) using connectors (initial connection with NYM)?

Statement from TÜV, South West

"The intended application has not been excluded in any of the relevant VDE regulations which incorporate the setup of power installations or the requirements for cable, plug-in connections, male and female connectors or socket-outlets. Several points must however be taken into account:
- The connecting points of cables that are not permanently wired must be relieved of tension and transverse force (strain relief and locking device).
- The supply cable (NYM) must be protected against excessive bending stress by fixing the cable or male connector appropriately during the installation.
- It must be ensured that the male connector are only used in installations with a maximum load of 16 A."

VDE 0628

Area of application: Connectors for installation technology

"Connectors with detachable connections are tested with the following cables. H05VV-F, NYM (cross section 1.5 mm^2 and 2.5 mm^2)"

It can be concluded that cable types that are used for this test are also suitable for the practical application.

Latest technology

Connection of a luminaire with flexible conductors to an NYM cable which is suspended from the ceiling.
The connection is normally established with a European standard terminal (lamp-wire connector). It has never been in doubt that a Wieland Electric connector meets higher standards as regards safety requirements (strain relief, locking device, reliability of concealment,….).

Previously all buildings have been installed without any problems from the TÜV, LGA etc.

Are there specific technical conditions for the installation?

Three-phase and a.c. distribution boards

- Max. 16 A fuse per external conductor
- A three-phase protective device should be used so that all 3 fuses can be disconnected if one phase fails or
- Each phase can be individually fused and a separate master switch should be installed for all three phases so that the complete circuit can be disconnected to carry out repairs.

Bundling of cables

When the cables are bundled, the permitted current carrying capacity must be reduced (compared to DIN VDE 0298 section 4).
Example:
- cable trunking
- cable trays, racks
- walls with heat insulation

An increase in the cable cross section (e.g. from 1.5 mm^2 to 2.5 mm^2) raises the permitted current carrying capacity.