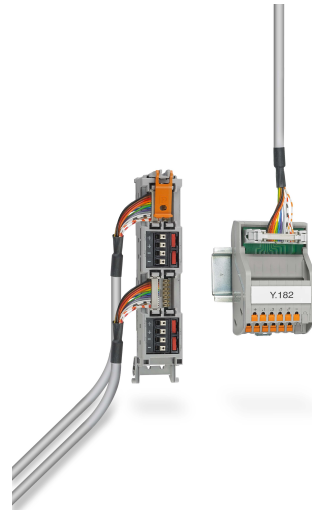


Installation directive on system cabling for controllers



Application note
110425_en_00

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1 General notes

1.1 Scope of validity

This application note applies only to the product range for system cabling for controllers.

- Controller-specific system cabling
- Universal cables
- Universal modules
- Retrofit and modernization components
- Potential distributors
- Customer-specific products

1.2 Intended use

The product may only be used in accordance with these instructions and the full instruction manual. Any other use and operation outside of the limit values may jeopardize safe use and will invalidate the warranty and guarantee.

Phoenix Contact GmbH & Co. KG is not liable for damage caused as a result of improper use.



The “exclamation mark” on the device labeling means that you need to:

Read the application note in its entirety.

Follow the application note to avoid impairing the intended protection.

For further information, visit phoenixcontact.net/product/net.



Make sure you always use the latest documentation.

It can be downloaded at phoenixcontact.net/product/net.

Always follow the instructions in the product-specific documentation.

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2 Safety notes

2.1 Information on personnel



- Installation, operation, and maintenance may only be carried out by qualified electricians. Follow the installation instructions as described.
- When installing and operating the device, observe the applicable regulations and safety directives (including national safety directives), as well as the generally recognized technical regulations.
- Observe the safety information, conditions, and limits of use specified in the product documentation. Comply with them.

The product is an open device designed for use in closed control cabinets or control boxes (junction boxes) with IP54 degree of protection or higher. The following safety attributes are provided by the control cabinet/control box:

- Access is restricted to authorized specialist personnel, and the control cabinet/control box can only be opened with tools.
- The required pollution degree in the space around the equipment is ensured, and sufficient protection against direct or indirect contact is provided.
- Sufficient protection against UV light is ensured.
- The spread of fire outside the control cabinet or control box is prevented.
- Resistance to mechanical strain over the entire operating temperature range is ensured.

2.2 Power supply



NOTE: Risk of injury

Use only SELV/PELV power supply units or power supplies to supply the device.

No additional touch protection is required when using a SELV/PELV voltage (≤ 30 V AC or 60 V DC).

- In DC operation, use only fuses that are approved for DC voltages.
- Replace defective fuses with fuses of the same type and with the same fuse values.

2.3 Installation and startup

When installing, you must comply with country-specific regulations and laws.

Check the housing and the components used for exterior damage prior to installation.

If the device is defective, you must not use it.



CAUTION: Risk of injury

All work (installation, maintenance, cleaning, etc.) must be carried out with the power switched off. Observe the national standards and regulations.

Only operate connectors when there is no load/ the power is switched off.

- The device is maintenance-free. Repairs may only be carried out by the manufacturer.
- Only clean the device with a suitable damp cloth. Switch the device off before cleaning and do not use abrasive agents or solvents.
- On the system side, provide both a circuit breaker and an overcurrent protection device. For the dimensioning of the overcurrent protection devices, take into account the connection cross-sections and the documented maximal continuous current (limiting continuous current).
- Any measures required to ensure an IP20 degree of protection lie within the responsibility of the system installer, such as the use of appropriate covers.
- The device must be disposed of in accordance with the applicable national regulations.
- When connecting signal lines directly to the AC supply network, appropriate EMC protection measures must be provided (e.g., suitable surge protection against transient overvoltage).

2.4 Removing or changing components



WARNING: Dangerous contact voltage

If live parts become freely accessible because components (e.g., fuses, connectors, ...) have been removed, changed, or are missing, you must assume there is dangerous contact voltage if the voltage is (\geq protective extra-low voltage/ ≥ 30 V AC; ≥ 60 V DC).



NOTE: Electrostatic discharge!

The device contains components that can be damaged or destroyed by electrostatic discharge. When handling the device, observe the necessary safety precautions against electrostatic discharge (ESD) in accordance with EN 61340-5-1 and IEC 61340-5-1.

2.5 DIN rail modules

- During installation, observe product-specific features such as the use of partition plates for certain voltage ranges, derating, mounting positions, minimum bending radius of the cables, and electrical safety, etc.
- At least one functional insulation is maintained against adjacent modules along the DIN rail. If the application has higher requirements for insulation (base or reinforced insulation), then you have to realize these by means of suitable measures (such as a partition plate).
- Please observe the ambient temperatures and any other special requirements (such as derating) specified in the packing slips and data sheets.



CAUTION: Risk of burns from hot housing surfaces

During operation, the device or its components (such as heatsinks) will heat up.
In the event of high ambient temperatures, there is a risk of burns when touching the device.
If the device was in operation in high ambient temperatures, allow it to cool down before touching it.

2.5.1 Mounting on a DIN rail

Place the device onto a 35 mm DIN rail from above.

- Make sure the upper housing keyway hooks onto the top edge of the DIN rail.
 - Holding the device by the lower part of the housing, carefully push it toward the mounting surface.
 - Once the snap-on feet have audibly snapped onto the DIN rail, check that the device is attached securely.
- ⇒ The device is now mechanically secured via the DIN rail.

2.5.2 Removal from the DIN rail

- Lift the device from the DIN rail.

2.6 Relay modules

- Use only approved relays.
- When replacing pluggable miniature switching relays or solid-state relays, use only relays approved by Phoenix Contact. You can find them in the "Interface technology and switching devices" catalog or on the Internet at phoenixcontact.net/product/net.
- Do not connect adjacent channels to a mix of SELV/PELV voltages and dangerous contact voltages.



WARNING: Risk of dangerous contact voltage if there are unoccupied relay slots

If there are unoccupied relay slots, remove the metal retaining brackets.

The respective output terminals have to be floating.

2.7 Grounding

Functional ground (FE)

When devices have a metal foot contact, that contact should be regarded as a functional ground (FE).

The functional ground is used to increase immunity to interference by discharging the interference. It does not provide shock protection for people.