INTERFACE Relay - INTERFACE Cabling

Installation guidelines for the product groups: INTERFACE Relay INTERFACE Cabling

Application note
104155_en_02

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1 General notes

1.1 Scope of validity of this application note

This application note is only valid for INTERFACE Relay (excluding CONTACTRON) and INTERFACE Cabling products.

INTERFACE Relay – Optocouplers and relays

- RIFLINE complete series - Pluggable relays and optocouplers with pluggable input/interference suppression modules
- PLC series – 6.2/14 mm wide with plug-in relays and optocouplers
- PLC-V8C/... products
- PR series – Plug-in relays and optocouplers with plug-in input/interference suppression modules
- DEK series – Relay modules with modular terminal block design
- EMG series – Modular relays and optocouplers
- ST series – Relays and optocouplers that can be plugged into modular terminal blocks
- Special relay and solid-state relay modules
- Does not apply to CONTACTRON

INTERFACE Cabling – I/O wiring between the field and automation level

- Wiring interface – Contact individual wires with high-pos. connectors (VIP, UMK, etc.)
- System cabling – Plug and play control cabinet wiring (FLK, FLKM, etc.)
- Cables – Pre-assembled cables with D-SUB or FLK strip

1.2 Intended use

INTERFACE Relay and INTERFACE Cabling products should only be used according to the instructions in the product-specific documentation and in this application note. Phoenix Contact accepts no liability if the products are used for anything other than their designated use.

1.3 Voltage classes

The voltage classes meet the requirements of EN 61140.

Make sure you always use the latest documentation.
It can be downloaded at phoenixcontact.net/products.

2 Safety notes for use in the low voltage area

2.1 Notes for personnel

WARNING: INTERFACE Relay and INTERFACE Cabling products must only be used by qualified personnel (qualified electricians or persons instructed in electrical engineering).

– An electrically skilled person who because of their training, experience and instruction, and knowledge of relevant standards, can assess any required operations and recognize any possible dangers. (Definition according to DIN VDE 1000-10)
– An electrically instructed person is someone who has been instructed and, if necessary, trained by an electrically skilled person in their required tasks and the possible dangers caused by incorrect handling and who has also been informed of the necessary safety equipment, personal safety equipment and safety measures. (Definition according to DIN VDE 1000-10)

2.2 Installation and startup

WARNING: The power supply must be disconnected when carrying out any work (installation, maintenance, cleaning, etc.). Observe the national regulations and standards.

WARNING: During operation, this equipment may have dangerous, live parts.

They can therefore cause considerable damage to health or equipment, e.g., due to the unauthorized removal of protective covers or inadequate maintenance.

Observe the notes in the product-specific documentation.

It is prohibited for unqualified personnel to work on the products, on the machine or in their vicinity.

When working on the products and the system, you must always keep the operating instructions and other items of product documentation to hand and observe the information therein.

The application notes and the circuit details presented in the product-specific documentation should be understood in a general sense and the relevant application should be tested to see if they apply.

Phoenix Contact cannot guarantee the suitability of the procedures or the circuit suggestions described for the relevant application.

The products are to be classified as "not short-circuit-proof" in case "short-circuit-proof" or "conditionally short-circuit-proof" are not specified in the product description. For the dimensioning of the overload protection devices take into account the connection cross-sections and the documented maximal continuous current (limiting continuous current).

2.3 Removing or replacing components

WARNING: Dangerous contact voltage

If live parts become freely accessible due to the removal, replacement or absence of components (e.g., fuses, connectors, etc.), if voltage is present (≥ SELV/≥ 25 V AC; ≥ 60 V DC) it should be assumed that dangerous contact voltage is present.

WARNING: Before removing, replacing or fitting components, disconnect the power to the application and ensure that it cannot be switched on again.

WARNING: Make sure the entire application is reassembled before switching the power back on.

If these instructions are not followed, there is a danger of damage to health or even of a life-threatening injury.

Observe the notes in the product-specific documentation.

2.4 Electrostatic discharge

All items to be protected against ESD are supplied in an ESD bag.

Only qualified personnel should pack, unpack, mount, and remove an item while observing the ESD regulations.

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), according to EN 61340-5-1 and DIN IEC/TR 61340-5-1 VDE 300-5-2.

2.5 Installation

WARNING: Shock protection

Products with IP00 and IP20 protection (≥ 25 V AC/≥ 60 V DC) are designed for use in a closed control cabinet or control box (terminal box) with IP54 protection or higher.

- Protection in case of indirect contact
  If no secure separation or reinforced insulation is available between voltages dangerous to the touch and safety extra-low voltages you must handle the safety extra-low voltage like a voltage dangerous to the touch.
- During installation, observe any product-specific special requirements such as the use of insulating plates for certain voltage ranges, derating, mounting positions, the minimum bending radius of cables, and electrical safety, etc.
- Against adjacent modules in the support rail direction at least one functional insulation is complied with. If the application has higher requirements of the insulation (base or reinforced insulation), then you have to realize these by means of suitable measures (e.g. separator plates).
- Observe the applicable directives and regulations inside the control cabinet.
- Observe the ambient temperatures and any other special requirements (such as derating) specified in the data sheets and package slips.

Observe the notes in the product-specific documentation.

2.6 Device replacement

WARNING: Do not replace devices while the power is connected.

- Before removing an item from or inserting an item in the application, disconnect the power to the entire application.
- Make sure the entire application is reassembled before switching the power back on.

2.7 Overheating

WARNING: Overheating can cause burns and can damage the device.

- During installation, observe any product-specific special requirements, such as derating and mounting positions.
- Provide a fuse depending on the load.

Observe the notes in the product-specific documentation.

2.8 Grounding

A distinction is made between functional earth ground (FE) and protective earth ground (PE). Functional earth ground is only used to increase interference resistance. It does not provide shock protection for people.

Protective earth ground is a low-impedance current path that minimizes the risk to the operator in the event of an error. Errors include high-voltage errors and/or current errors between an electrical circuit and ground. Protective earth ground is largely used outside the SELV area.

Protective earth grounding (PE)

Protective earth grounding protects people and machines against hazardous voltages.

To avoid these dangers, correct installation, taking the local conditions into account, is vital.

WARNING: If a product has a PE connection terminal block, this must be connected.

Observe the notes in the product-specific documentation.

Functional earth grounding (FE)

Function earth grounding is used to increase resistance to interference. Functional earth ground (FE) is only used to discharge interference. It does not provide shock protection for people.

For additional notes, please refer to the product-specific data sheets and package slips.

2.9 Demands on the power supply

WARNING: Dangerous contact voltage

Only use power supply units that ensure safe isolation between the primary and secondary circuits according to EN 50178.