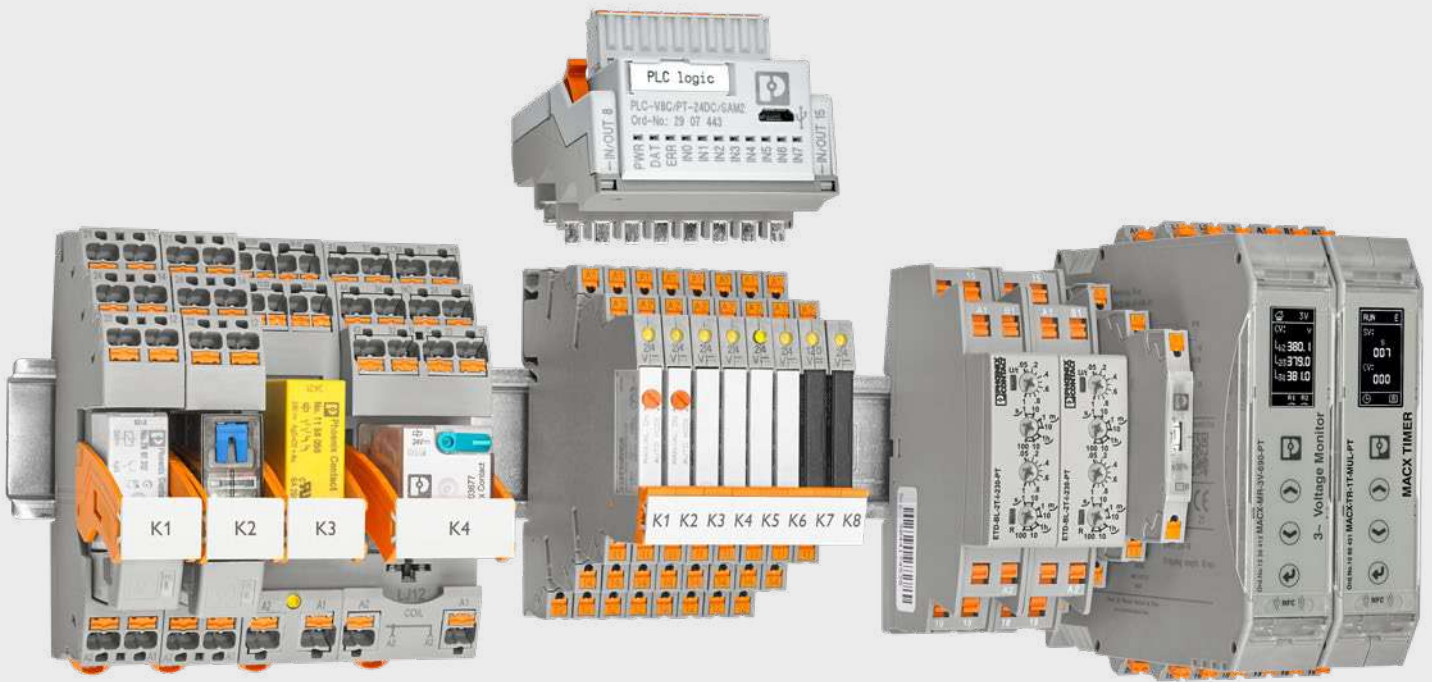




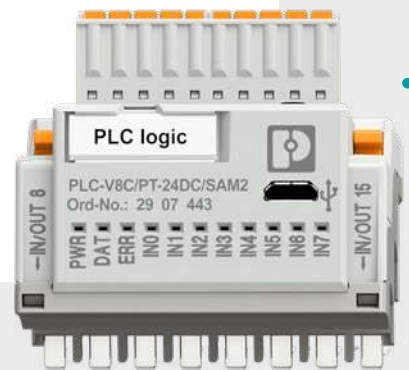
## Relays, optocouplers, and logic modules

Switch, isolate, and amplify signals reliably

# Relays, optocouplers, and logic modules

## The product range at a glance

Relays are electrically controlled switches that perform many functions in automation. When it comes to switching, isolating, monitoring, amplifying, or multiplying, we provide support in the form of clever relays, optocouplers, and logic modules. Whether solid-state relays, electromechanical relays, coupling relays, optocouplers, monitoring relays, or timer relays and logic modules, you will find the right relay for your application here.

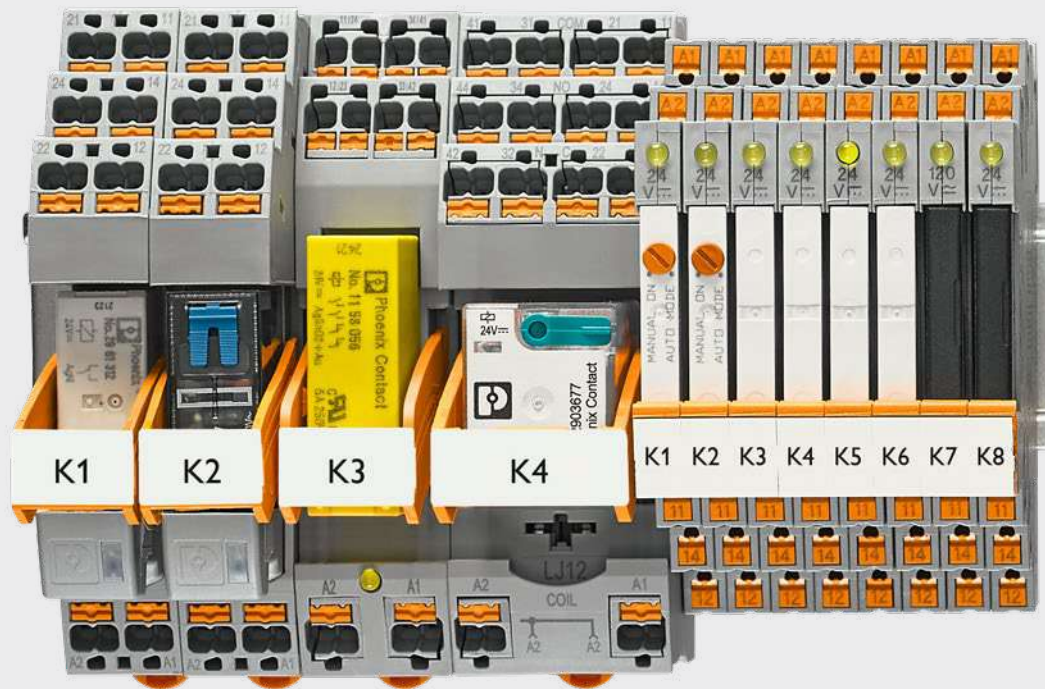


1

### Electromechanical and solid-state relay modules

- RIFLINE complete industrial relay system: Ideal for all standard applications
- PLC-INTERFACE highly compact relay modules: No matter what your application or industry, you will find the right relay module here

➤ More information starting on page 4



3

### Timer relays

From especially space-saving timer relays with an overall width of only 6 mm and compact timer relays in installation housings for building installation to smart multifunctional relays, you will find everything for your time control here.

➤ More information starting on page 48

## 2

### Programmable logic relay system

Highly compact control and switching:  
PLC logic combines relay and analog  
modules with logic functions and intuitive  
software.

➤ More information starting on page 42



## 4

### Monitoring relays

EMD-SL monitoring relays, EMD-BL compact  
monitoring relays:

EMD monitoring relays can be used to detect  
deviations in important system parameters at an  
early stage. They can be indicated or system parts  
can be shut down selectively.

➤ More information starting on page 56

## Contents

|                                                                                                          |    |
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## COMPLETE line

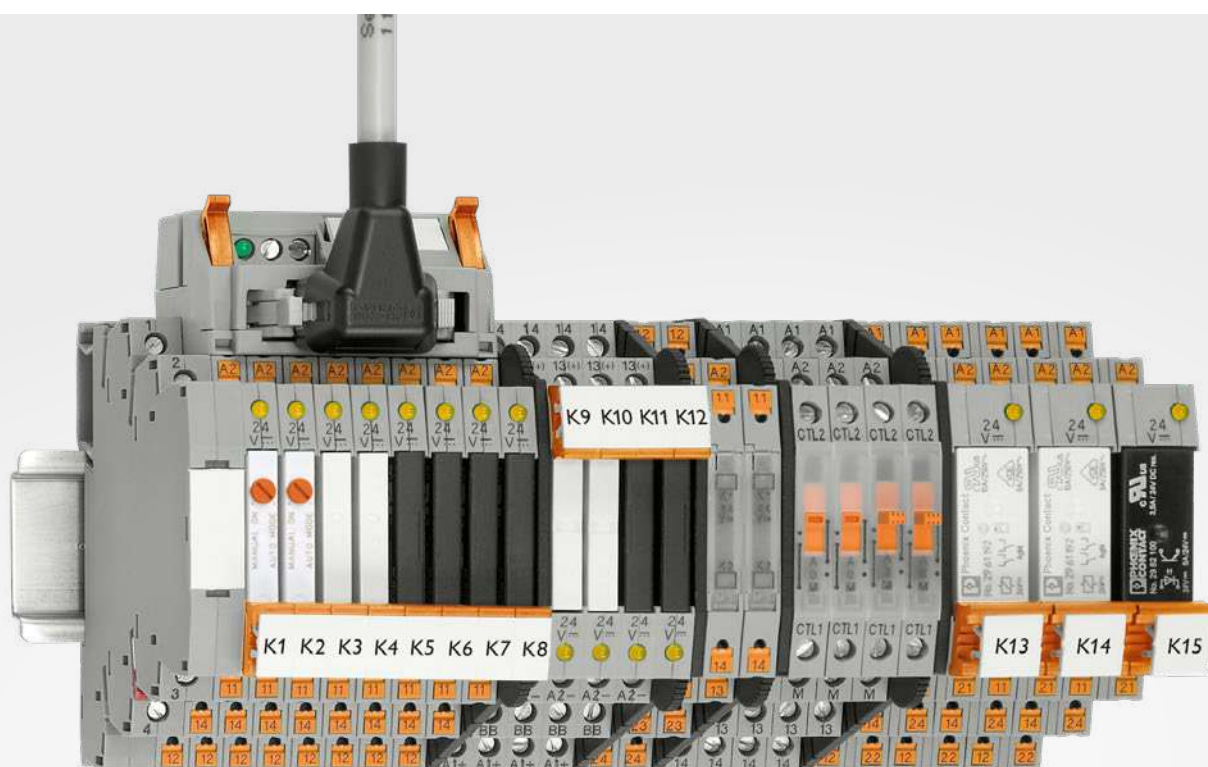
The new standard for  
the control cabinet.

➤ More information  
starting on page 66

# Electromechanical and solid-state relay modules for every application

1

Among other things, solid-state relays ensure reliable switching operations in system automation. Choose from our wide range of solid-state relays and electromechanical relays, available as plug-in versions or as complete modules. Coupling relays, highly compact relay modules, and relays for the Ex area also help achieve high system availability.



## PLC-INTERFACE highly compact relay modules

PLC-INTERFACE is the interface between the controller and system I/O devices. The universal design is compact and space-saving. While the 6.2 mm narrow module has one contact, the 14 mm variant is available with two contacts. The modules are assembled with an electromechanical or a solid-state relay as needed.

➤ More information starting on page 16

# Comparison of relay modules

|                                               | PLC-INTERFACE highly compact relay modules                                                                                                                                                                                                                                                                                       | Universal industrial relay system RIFLINE complete                                                                                                                       |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input voltage type                            | AC, DC, and UC                                                                                                                                                                                                                                                                                                                   | AC, DC                                                                                                                                                                   |
| Nominal current of relay                      | Max. 10 A                                                                                                                                                                                                                                                                                                                        | Max. 16 A                                                                                                                                                                |
| Nominal current of solid-state relay          | Max. 10 A                                                                                                                                                                                                                                                                                                                        | Max. 5 A                                                                                                                                                                 |
| Contacts                                      | Max. 2 changeover contacts, max. 2 N/O contacts                                                                                                                                                                                                                                                                                  | Max. 4 changeover contacts, max. 3 N/O contacts                                                                                                                          |
| Connection technology                         | Push-in, screw                                                                                                                                                                                                                                                                                                                   | Push-in, screw                                                                                                                                                           |
| Bridging                                      | A1, A2, 11, 14                                                                                                                                                                                                                                                                                                                   | A2, 11 (with RIF-0 and RIF-1)                                                                                                                                            |
| Adapters for the system cabling               | Yes                                                                                                                                                                                                                                                                                                                              | Yes, for RIF-1 modules                                                                                                                                                   |
| Can be extended with logic and time functions | Yes, in combination with PLC logic                                                                                                                                                                                                                                                                                               | No                                                                                                                                                                       |
| Special versions                              | Sensor/actuator, railway, filter against interference voltage, 100 kHz, TTL, high continuous currents up to 10 A, high inrush currents up to 800 A, modules with manual switches, variants with Ex approvals for Zone 2 (ATEX, Class 1 Division 2), force-guided coupling relays, electronic reversing load relays for DC motors | Can be extended with a timer module, high inrush currents up to 800 A, modules with manual switches, variants with Ex approvals for Zone 2, force-guided coupling relays |



## Universal industrial relay system RIFLINE complete

RIFLINE complete consists of DIN rail bases, electromechanical or solid-state relays, pluggable interference suppression modules, marking, and bridging material. The range of accessories is rounded off with a timer module. It is used to create a timer relay from a simple relay.

➤ More information starting on page 6

## Universal relay system – from coupling relays to a replacement for miniature contactors

You can implement all of your standard relay applications using the RIFLINE complete universal relay system. Whether you want to isolate, multiply, or amplify signals: The field of applications ranges from coupling and timer relays to a replacement for miniature contactors. The relay system with universal plug-in design supports quick, easy, and error-free handling.



**Push-in Technology**   
Designed by Phoenix Contact

### Your advantages

- ✓ Complete product family that covers all standard relay applications
- ✓ Easy handling, thanks to state-of-the-art wiring and potential distribution concept
- ✓ Easily extended to create a timer relay by means of a plug-in function module
- ✓ Reliable system for high machine and system availability
- ✓ Available as a complete module or modular system

## Easy handling



## Wiring

Fast, easy, tool-free wiring with Push-in connection technology.

## Potential distribution

Easy potential distribution with pluggable bridges from the CLIPLINE complete system accessories.

## Extension

Easy extension with the plug-in, multifunctional timer module. You can select three time functions in a time range from 0.5 seconds to 100 minutes.

### Multifunctional timer module

The multifunctional plug-in timer module for 24 V DC transforms the relay module into a timer relay. You can fit the RIF-1 to RIF-4 bases with this module.

Choose from the following time functions:

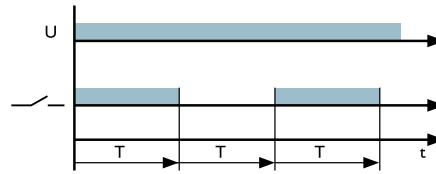
- Switch-on delay
- Passing make contact
- Pulse generator



Switch-on delay



Passing make contact



Pulse generator



## Force-guided contacts

Multi-channel coupling relay modules with force-guided contacts in accordance with DIN EN 61810-3 type A.



## Potentially explosive applications

Coupling relay modules with ATEX, IECEx, and Class 1 Division 2 approval for potentially explosive applications.



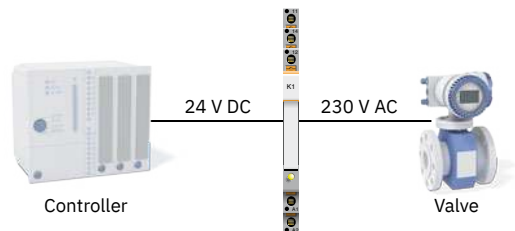
## High inrush currents

Coupling relay modules for high inrush currents up to 800 A<sub>peak</sub>.

# RIFLINE complete relay modules

## RIF-0

The 6.2 mm narrow RIF-0 base series is suitable for a 1-changeover contact relay. Switching currents up to 6 A are implemented here. RIF-0 is therefore a good choice for all coupling applications.



### RIF-0 electromechanical relay modules with power contact

|                                                                                   | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection      |
|-----------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|
|  | 12 V DC               | 1<br>N/O contact       | 10 mA (12 V)              | 6 A                         | 10 A (4 s)             | 250 V AC/DC               | <a href="#">2903362</a> |
|                                                                                   |                       | 1 changeover contact   |                           |                             |                        |                           | <a href="#">2903371</a> |
|                                                                                   | 24 V DC               | 1<br>N/O contact       |                           |                             | 10 A (4 s)             |                           | <a href="#">2903361</a> |
|                                                                                   |                       | 1 changeover contact   |                           |                             |                        |                           | <a href="#">2903370</a> |

### RIF-0 electromechanical relay modules with power contact and manual activation

|                                                                                     | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection                    |
|-------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|---------------------------------------|
|  | 24 V DC               | 1 changeover contact   | 10 mA (12 V)              | 6 A                         |                        | 250 V AC/DC               | <b>NEW</b><br><a href="#">1550107</a> |

### RIF-0 electromechanical relay modules with gold contact

|                                                                                     | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection      |
|-------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|
|  | 12 V DC               | 1<br>N/O contact       | 1 mA (12 V)               | 50 mA                       | 50 mA                  | 30 V AC<br>36 V DC        | <a href="#">2903360</a> |
|                                                                                     |                       | 1 changeover contact   |                           |                             |                        |                           | <a href="#">2903369</a> |
|                                                                                     | 24 V DC               | 1<br>N/O contact       |                           |                             |                        |                           | <a href="#">2903359</a> |
|                                                                                     |                       | 1 changeover contact   |                           |                             |                        |                           | <a href="#">2903368</a> |

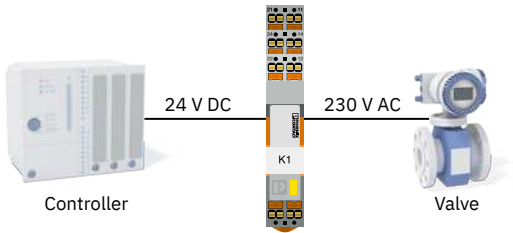
### RIF-0 solid-state relay modules

|                                                                                     | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage    | Push-in connection      |
|-------------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|----------------------|-------------------------|
|  | 24 V DC                 | 300 Hz                 | 100 mA                      | 3 V DC ... 48 V DC   | <a href="#">2905294</a> |
|                                                                                     |                         |                        | 3 A                         | 3 V DC ... 33 V DC   | <a href="#">2905293</a> |
|                                                                                     |                         | 10 Hz                  | 750 mA                      | 24 V AC ... 253 V AC | <a href="#">2905295</a> |

RIFLINE complete relay modules

RIF-1

The 16 mm narrow RIF-1 base series is suitable for a 2-changeover contact relay. Currents up to 13 A can be switched here. The ideal relay for power switching and signal duplication.



RIF-1 electromechanical relay modules with power contact

|                                                                                   | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current    | Maximum switching voltage | Push-in connection      |
|-----------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|---------------------------|---------------------------|-------------------------|
|  | 12 V DC               | 1 changeover contact   | 10 mA (12 V)              | 11 A                        | 50 A (20 ms, N/O contact) | 250 V AC/DC               | <a href="#">2906224</a> |
|                                                                                   |                       | 2 changeover contacts  | 10 mA (5 V)               | 8 A                         | 25 A (20 ms, N/O contact) |                           | <a href="#">2906223</a> |
|                                                                                   | 24 V DC               | 1 changeover contact   | 10 mA (12 V)              | 11 A                        | 50 A (20 ms, N/O contact) |                           | <a href="#">2903342</a> |
|                                                                                   |                       | 2 changeover contacts  | 10 mA (5 V)               | 8 A                         | 25 A (20 ms, N/O contact) |                           | <a href="#">2903334</a> |
|                                                                                   | 24 V AC               | 1 changeover contact   | 10 mA (12 V)              | 10 A                        |                           |                           | <a href="#">2903341</a> |
|                                                                                   |                       | 2 changeover contacts  | 10 mA (5 V)               | 8 A                         | 12 A (20 ms, N/O contact) |                           | <a href="#">2903333</a> |
|                                                                                   | 120 V AC              | 1 changeover contact   | 10 mA (12 V)              | 10 A                        | 25 A (20 ms, N/O contact) |                           | <a href="#">2903340</a> |
|                                                                                   |                       | 2 changeover contacts  | 10 mA (5 V)               | 8 A                         | 12 A (20 ms, N/O contact) |                           | <a href="#">2903332</a> |
|                                                                                   | 230 V AC              | 1 changeover contact   | 10 mA (12 V)              | 10 A                        | 25 A (20 ms, N/O contact) |                           | <a href="#">2903339</a> |
|                                                                                   |                       | 2 changeover contacts  | 10 mA (5 V)               | 8 A                         | 12 A (20 ms, N/O contact) |                           | <a href="#">2903331</a> |

RIF-1 electromechanical relay modules with gold contact

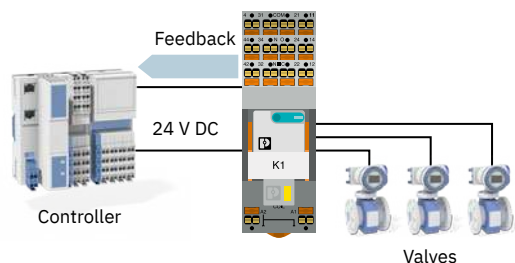
|  | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection      |
|--|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|
|  | 24 V DC               | 2 changeover contacts  | 1 mA (24 V)               | 50 mA                       | 50 mA                  | 30 V AC<br>36 V DC        | <a href="#">2903330</a> |
|  | 24 V AC               |                        |                           |                             |                        |                           | <a href="#">2903329</a> |
|  | 120 V AC              |                        |                           |                             |                        |                           | <a href="#">2903328</a> |
|  | 230 V AC              |                        |                           |                             |                        |                           | <a href="#">2903327</a> |

# RIFLINE complete relay modules

| RIF-1 electromechanical relay modules with power contact and manual activation    |                       |                        |                           |                             |                           |                           |                    |
|-----------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|---------------------------|---------------------------|--------------------|
|                                                                                   | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current    | Maximum switching voltage | Push-in connection |
|  | 24 V DC               | 1 changeover contact   | 10 mA (12 V)              | 11 A                        | 24 A (20 ms, N/O contact) | 250 V AC/DC               | 2905289            |
|                                                                                   |                       | 2 changeover contacts  |                           | 8 A                         | 12 A (20 ms, N/O contact) |                           | 2905291            |
|                                                                                   | 120 V AC              | 1 changeover contact   |                           |                             | 32 A (20 ms, N/O contact) |                           | 2909776            |
|                                                                                   |                       | 2 changeover contacts  |                           | 5 A                         | 16 A (20 ms, N/O contact) |                           | 2909775            |
|                                                                                   | 230 V AC              | 1 changeover contact   |                           | 8 A                         | 32 A (20 ms, N/O contact) |                           | 2905290            |
|                                                                                   |                       | 2 changeover contacts  |                           | 5 A                         | 16 A (20 ms, N/O contact) |                           | 2905292            |

## RIF-2

The 31 mm wide RIF-2 base series is designed for industrial relays with up to four contacts. Currents up to 12 A are no problem. This is the ideal solution for signal multiplication.

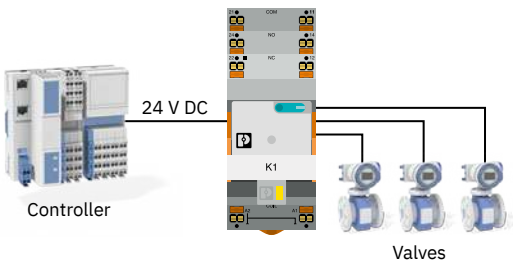


| RIF-2 electromechanical relay modules with power contact                            |                       |                        |                           |                             |                           |                           |                    |
|-------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|---------------------------|---------------------------|--------------------|
|                                                                                     | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current    | Maximum switching voltage | Push-in connection |
|  | 24 V DC               | 2 changeover contacts  | 5 mA (24 V)               | 10 A                        | 30 A (20 ms, N/O contact) | 250 V AC/DC               | 2903315            |
|                                                                                     |                       | 4 changeover contacts  |                           | 6 A                         | 16 A (20 ms, N/O contact) |                           | 2903308            |
|                                                                                     | 24 V AC               | 2 changeover contacts  |                           | 8.5 A                       | 30 A (20 ms, N/O contact) |                           | 2903313            |
|                                                                                     |                       | 4 changeover contacts  |                           | 5 A                         | 16 A (20 ms, N/O contact) |                           | 2903306            |
|                                                                                     | 120 V AC              | 2 changeover contacts  |                           | 8.5 A                       | 30 A (20 ms, N/O contact) |                           | 2903311            |
|                                                                                     |                       | 4 changeover contacts  |                           | 5 A                         | 16 A (20 ms, N/O contact) |                           | 2903305            |
|                                                                                     | 230 V AC              | 2 changeover contacts  |                           | 8.5 A                       | 30 A (20 ms, N/O contact) |                           | 2903310            |
|                                                                                     |                       | 4 changeover contacts  |                           | 5 A                         | 16 A (20 ms, N/O contact) |                           | 2903304            |

| RIF-2 electromechanical relay modules with power contact and reinforced retaining bracket |                       |                        |                           |                             |                           |                           |                    |
|-------------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|---------------------------|---------------------------|--------------------|
|                                                                                           | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current    | Maximum switching voltage | Push-in connection |
|        | 24 V DC               | 2 changeover contacts  | 5 mA (24 V)               | 10 A                        | 30 A (20 ms, N/O contact) | 250 V AC/DC               | NEW<br>1577412     |

RIFLINE complete relay modules

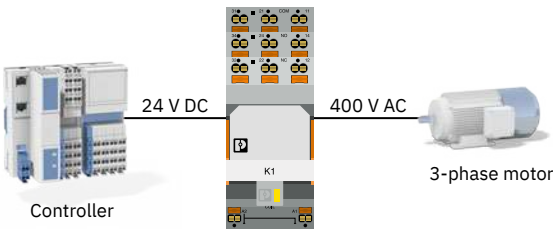
**RIF-3**  
The 40 mm wide RIF-3 base series is designed for octal relays with up to three contacts. Switching currents up to 10 A are implemented here.



RIF-3 electromechanical relay modules with power contact

| RIF-3 electromechanical relay modules with power contact                          |                       |                        |                           |                             |                           |                           |                         |
|-----------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|---------------------------|---------------------------|-------------------------|
|                                                                                   | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current    | Maximum switching voltage | Push-in connection      |
|  | 24 V DC               | 3 changeover contacts  | 10 mA (24 V)              | 8.5 A                       | 30 A (20 ms, N/O contact) | 250 V AC/DC               | <a href="#">2903294</a> |
|                                                                                   | 120 V AC              |                        |                           | 6 A                         |                           |                           | <a href="#">2903293</a> |
|                                                                                   | 230 V AC              |                        |                           |                             |                           |                           | <a href="#">2903292</a> |

**RIF-4**  
The 43 mm wide RIF-4 base series is designed for power relays with up to three contacts. It can be used to switch currents up to 16 A.



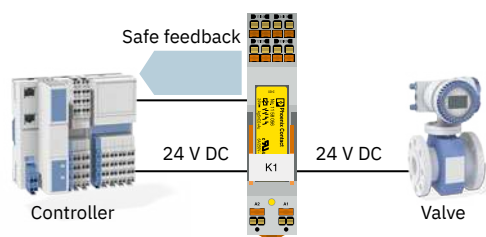
RIF-4 electromechanical relay modules with power contact

| RIF-4 electromechanical relay modules with power contact                           |                       |                        |                           |                             |                           |                           |                         |
|------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|---------------------------|---------------------------|-------------------------|
|                                                                                    | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current    | Maximum switching voltage | Push-in connection      |
|  | 24 V DC               | 3 changeover contacts  | 10 mA (24 V)              | 10 A                        | 50 A (20 ms, N/O contact) | 440 V AC<br>250 V DC      | <a href="#">2903278</a> |
|                                                                                    | 120 V AC              |                        |                           | 8 A                         |                           |                           | <a href="#">2903277</a> |
|                                                                                    | 230 V AC              |                        |                           |                             |                           |                           | <a href="#">2903276</a> |

## RIFLINE complete relay modules for special applications

### Force-guided contacts

The coupling relay modules with up to four force-guided contacts in accordance with DIN EN 61810-3 are suitable for switching currents up to 6 A. Realize the standardized applications with safe feedback.

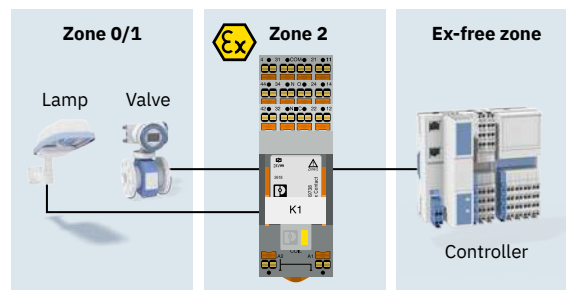


### RIFLINE complete electromechanical relay modules with force-guided contacts

|  | Nominal input voltage | Contact switching type              | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection      |
|--|-----------------------|-------------------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|
|  | 24 V DC               | 2 changeover contacts, force-guided | 5 mA (10 V)               | 6 A                         | 35 A (20 ms)           | 250 V AC/DC               | <a href="#">2908215</a> |
|  |                       | 3 N/O contacts, 1 N/C contact       |                           |                             |                        | 250 V AC<br>300 V DC      | <a href="#">1148703</a> |
|  |                       | 2 N/O contacts, 2 N/C contact       |                           |                             |                        |                           | <a href="#">1148699</a> |

### Potentially explosive applications

The coupling relay modules of the RIF-2 base series with ATEX, IECEx, and Class 1 Division 2 approval are suitable for use in Zone 2 potentially explosive applications.



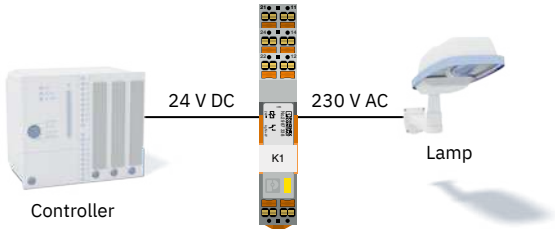
### Single relay with force-guided contacts

|                                                                                     | Nominal input voltage | Contact switching type                       | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Item number             |
|-------------------------------------------------------------------------------------|-----------------------|----------------------------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|
|  | 24 V DC               | 2 changeover contacts, force-guided          | 10 mA (5 V)               | 6 A                         | 6 A                    | 250 V AC/DC               | <a href="#">2908777</a> |
|                                                                                     |                       | 2 N/O contacts, 2 N/C contacts, force-guided | 5 mA (10 V)               |                             | 35 A (20 ms)           | 250 V AC<br>300 V DC      | <a href="#">1158056</a> |
|                                                                                     |                       | 3 N/O contacts, 1 N/C contact, force-guided  |                           |                             |                        |                           | <a href="#">1157954</a> |

RIFLINE complete relay modules for special applications

High inrush currents

The coupling relay modules of the RIF-1 base series, with inrush-proof switching contacts and a wolfram lead contact, are suitable for switching very high inrush currents up to 800 A.



RIFLINE complete electromechanical relay modules with 4-changeover contact power contact for potentially explosive areas

|                                                                                  | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current    | Maximum switching voltage | Push-in connection      |
|----------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|---------------------------|---------------------------|-------------------------|
|  | 24 V DC               | 4 changeover contacts  | 5 mA (24 V)               | 6 A                         | 16 A (20 ms, N/O contact) | 250 V AC/DC               | <a href="#">2909741</a> |
|                                                                                  | 120 V AC              |                        |                           | 5 A                         |                           |                           | <a href="#">2909740</a> |
|                                                                                  | 230 V AC              |                        |                           |                             |                           |                           | <a href="#">2909739</a> |

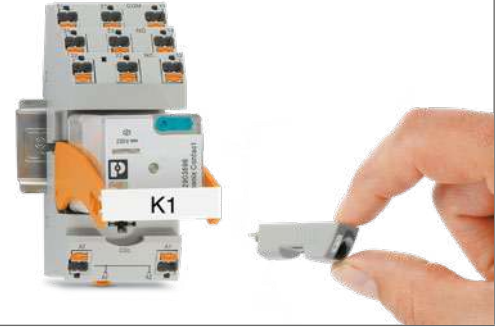
RIFLINE complete electromechanical relay modules for high inrush currents

|                                                                                    | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current                                               | Maximum switching voltage | Push-in connection              |
|------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|----------------------------------------------------------------------|---------------------------|---------------------------------|
|  | 12 V DC               | 1<br>N/O contact       | 100 mA<br>(12 V DC)       | 6 A                         | 80 A (20 ms)<br>130 A (peak, at capacitive load,<br>230 V AC, 24 µF) | 250 V AC/DC               | <a href="#">1078802</a>         |
|                                                                                    | 24 V DC               |                        |                           |                             |                                                                      |                           | <a href="#">2909884</a>         |
|                                                                                    |                       |                        |                           |                             |                                                                      |                           | 165 A (20 ms)<br>800 A (200 µs) |

# Accessories

## Accessories

Here you will find our many plug-in module variants and relay retaining brackets for all relay bases and various requirements.



## Plug-in modules

|                                                                                     | Description                                                                                                                                                                              | Type                     | Item no.                |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------|
|   | Plug-in module, for mounting on RIF-1, RIF-2, RIF-3, and RIF-4, with bridge rectifier, input voltage: 12 V AC ... 230 V AC                                                               | RIF-BR-12-230 AC         | <a href="#">2907060</a> |
|                                                                                     | Plug-in module, for mounting on RIF-1, RIF-2, RIF-3, and RIF-4, with freewheeling diode and yellow LED, input voltage: 12 V DC ... 24 V DC $\pm 20\%$ , polarity: A1-, A2+               | RIF-LDM-12-24 DC         | <a href="#">2907057</a> |
|                                                                                     | Plug-in module, for mounting on RIF-1, RIF-2, RIF-3, and RIF-4, with freewheeling diode and yellow LED, polarity: A1+, A2-, input voltage: 110 V DC $\pm 20\%$                           | RIF-LDP-110 DC           | <a href="#">2900941</a> |
|                                                                                     | Plug-in module, for mounting on RIF-1, RIF-2, RIF-3, and RIF-4, with freewheeling diode and yellow LED, polarity: A1+, A2-, input voltage: 12 V DC ... 24 V DC $\pm 30\%$                | RIF-LDP-12-24 DC         | <a href="#">2900939</a> |
|                                                                                     | Plug-in module, for mounting on RIF-1, RIF-2, RIF-3, and RIF-4, with freewheeling diode and yellow LED, polarity: A1+, A2-, input voltage: 48 V DC ... 60 V DC $\pm 20\%$                | RIF-LDP-48-60 DC         | <a href="#">2900940</a> |
|                                                                                     | Plug-in module, for mounting on RIF-1, RIF-2, RIF-3, and RIF-4, with varistor and yellow LED, input voltage: 120 V AC ... 230 V AC / 110 V DC $\pm 20\%$                                 | RIF-LV-120-230 AC/110 DC | <a href="#">2900944</a> |
|                                                                                     | Plug-in module, for mounting on RIF-1, RIF-2, RIF-3, and RIF-4, with varistor and yellow LED, input voltage: 12 V AC ... 24 V AC / DC $\pm 20\%$                                         | RIF-LV-12-24 UC          | <a href="#">2900942</a> |
|                                                                                     | Plug-in module, for mounting on RIF-1, RIF-2, RIF-3, and RIF-4, with varistor and yellow LED, input voltage: 48 V AC ... 60 V AC / DC $\pm 20\%$                                         | RIF-LV-48-60 UC          | <a href="#">2900943</a> |
|  | Plug-in module, for mounting on RIF-1, RIF-2, RIF-3, and RIF-4, with RC element, input voltage: 120 V AC ... 230 V AC / DC $\pm 20\%$                                                    | RIF-RC-120-230 UC        | <a href="#">2900951</a> |
|                                                                                     | Plug-in module, for mounting on RIF-1, RIF-2, RIF-3, and RIF-4, with RC element, input voltage: 12 V AC ... 24 V AC / DC $\pm 20\%$                                                      | RIF-RC-12-24 UC          | <a href="#">2900949</a> |
|                                                                                     | Plug-in module, for mounting on RIF-1, RIF-2, RIF-3, and RIF-4, with RC element, input voltage: 48 V AC ... 60 V AC / DC $\pm 20\%$                                                      | RIF-RC-48-60 UC          | <a href="#">2900950</a> |
|  | Plug-in module for extending a relay module to create a timer relay, 3 time functions, 4 time ranges, for mounting on RIF-1, RIF-2, RIF-3, and RIF-4, input voltage: 12 V DC ... 24 V DC | RIF-T3-24UC              | <a href="#">2902647</a> |
|  | Plug-in module, for mounting on RIF-1, RIF-2, RIF-3, and RIF-4, with varistor, input voltage: 120 V AC ... 230 V AC / DC $\pm 20\%$                                                      | RIF-V-120-230 UC         | <a href="#">2900948</a> |
|                                                                                     | Plug-in module, for mounting on RIF-1, RIF-2, RIF-3, and RIF-4, with varistor, input voltage: 12 V AC ... 24 V AC / DC $\pm 20\%$                                                        | RIF-V-12-24 UC           | <a href="#">2900945</a> |
|                                                                                     | Plug-in module, for mounting on RIF-1, RIF-2, RIF-3, and RIF-4, with varistor, input voltage: 48 V AC ... 60 V AC / DC $\pm 20\%$                                                        | RIF-V-48-60 UC           | <a href="#">2900947</a> |

## Accessories

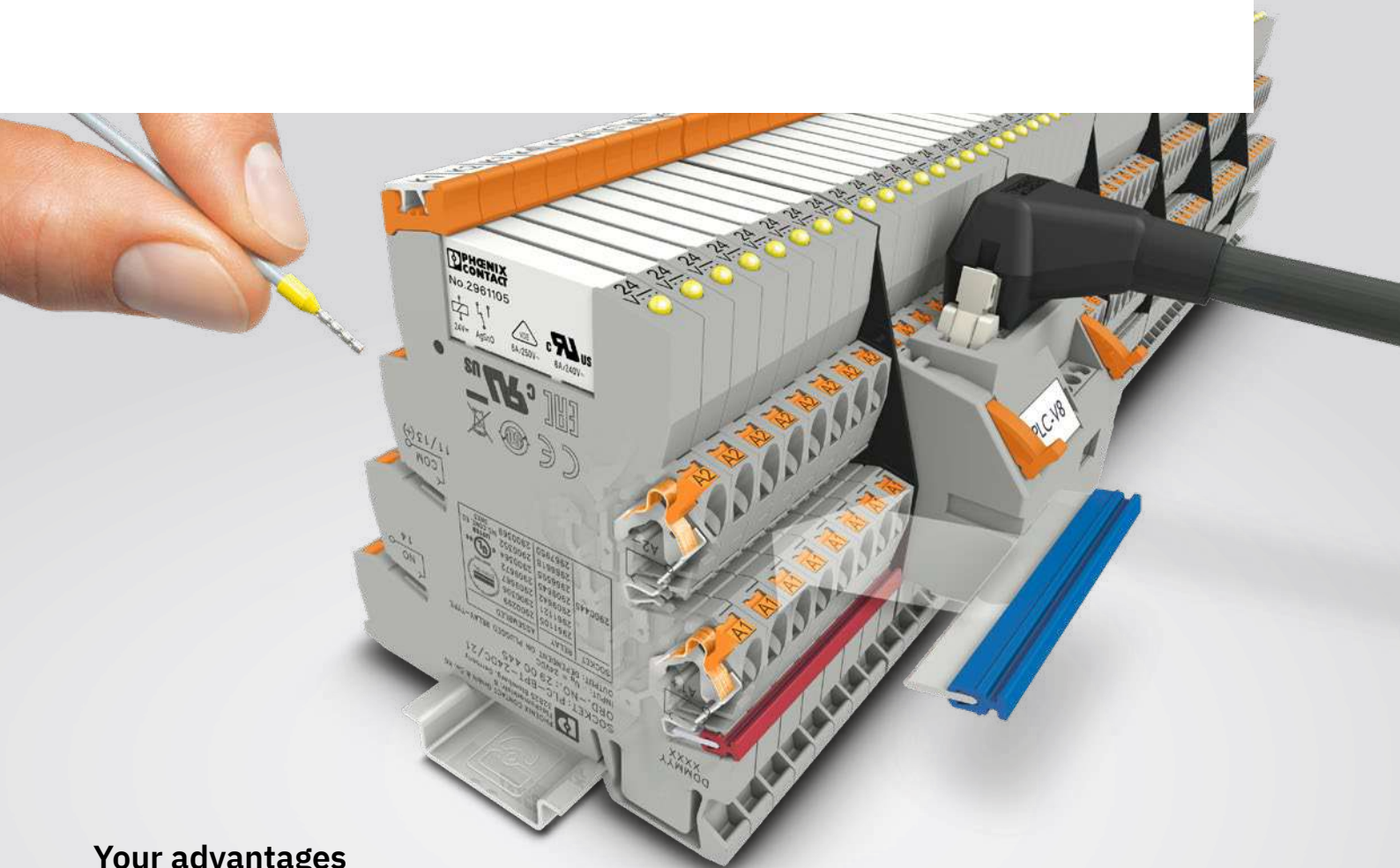
| Ejector lever                                                                       |                                                                                                                                                                             |             |          |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------|
|                                                                                     | Description                                                                                                                                                                 | Type        | Item no. |
|    | Relay retaining bracket, with ejector function and holder for marking material, suitable for RIF-1 relay base, for 16 mm high miniature power relays and solid-state relays | RIF-RH-1    | 2900953  |
|                                                                                     | Relay retaining bracket, with ejector function and holder for marking material, suitable for RIF-1 relay base, for 25 mm high miniature power relays and solid-state relays | RIF-RH-1-H  | 2904468  |
|                                                                                     | Relay retaining bracket, with ejector function and holder for marking material, suitable for RIF-2 relay base, for industrial relays                                        | RIF-RH-2    | 2900954  |
|                                                                                     | Relay retaining bracket, with holder for marking material, suitable for RIF-3 relay base, for octal relays                                                                  | RIF-RH-3    | 2900955  |
|                                                                                     | Relay retaining bracket, with holder for marking material, suitable for RIF-4 relay base, for high-power relays                                                             | RIF-RH-4    | 2900956  |
|    | Relay retaining bracket, wire model, suitable for RIF-1 relay base, for 16 mm high miniature power and solid-state relays                                                   | RIF-RHM-1   | 2905986  |
|                                                                                     | Relay retaining bracket, wire model, suitable for RIF-1 relay base, for 25 mm high miniature power relays                                                                   | RIF-RHM-1-H | 2905985  |
|                                                                                     | Relay retaining bracket, wire model, suitable for RIF-2 relay base                                                                                                          | RIF-RHM-2   | 2905984  |
|                                                                                     | Relay retaining bracket, wire model, suitable for RIF-4 relay base                                                                                                          | RIF-RHM-4   | 2905983  |
|  | Reinforced relay retaining bracket, with ejector function and holder for marking material, suitable for RIF-2 relay base, for industrial relays                             | RIF-RHS-2   | 2908043  |

| Bridges                                                                             |                                                                    |            |          |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------|----------|
|                                                                                     | Description                                                        | Type       | Item no. |
|  | Plug-in bridge, pitch: 6.2 mm, number of positions: 2, color: red  | FBS 2-6    | 3030336  |
|                                                                                     | Plug-in bridge, pitch: 6.2 mm, number of positions: 5, color: red  | FBS 5-6    | 3030349  |
|                                                                                     | Plug-in bridge, pitch: 6.2 mm, number of positions: 10, color: red | FBS 10-6   | 3030271  |
|                                                                                     | Plug-in bridge, pitch: 6.2 mm, number of positions: 20, color: red | FBS 20-6   | 3030365  |
|                                                                                     | Plug-in bridge, pitch: 6.2 mm, number of positions: 50, color: red | FBS 50-6   | 3032224  |
|                                                                                     | Plug-in bridge, pitch: 6.2 mm, number of positions: 2, color: blue | FBS 2-6 BU | 3036932  |
|                                                                                     | Plug-in bridge, pitch: 6.2 mm, number of positions: 2, color: gray | FBS 2-6 GY | 3032237  |
|  | Plug-in bridge, pitch: 8.2 mm, number of positions: 2, color: red  | FBS 2-8    | 3030284  |
|                                                                                     | Plug-in bridge, pitch: 8.2 mm, number of positions: 2, color: blue | FBS 2-8 BU | 3032567  |
|                                                                                     | Plug-in bridge, pitch: 8.2 mm, number of positions: 2, color: gray | FBS 2-8 GY | 3032621  |

## Highly compact relay modules

### Narrow and powerful switching

The PLC-INTERFACE relay series for universal use provides a wide range of plug-in electromechanical relays and solid-state relays. The following special variants are available: series for coupling sensors or actuators, solid-state relays, and hybrid variants for wear-free switching, Ex relays for Zone 2 applications, and relay modules for railroad applications.



### Your advantages

- ✓ Comprehensive product range with special versions for special applications
- ✓ Optimized installation effort with versatile accessories
- ✓ Just 6.2 mm wide with plug-in electromechanical and solid-state relays
- ✓ Simple connection technology of your choice: whether Push-in, spring-cage, or screw connection technology
- ✓ Logic functions through extension with PLC logic

## Easy extension



### System cabling adapter

The system cabling adapter enables the quick, easy, and error-free connection of relay modules to the controller.



### Time-saving potential distribution with plug-in bridges

With color-coded and insulated plug-in bridges, the PLC relay modules can save up to 70% wiring time.



### Compact space-saving housing

For space-saving installation, plug-in relays or solid-state relays in narrow housings that are just 6.2 mm or 14 mm wide are available.

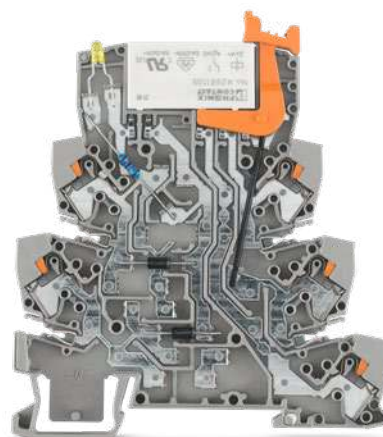
## Lead-frame technology

### Switch signals reliably – in particularly tight spaces

The lead-frame technology in the PLC-INTERFACE relay series provides the solid foundation for reliably switching, isolating, and amplifying signals. In addition, electromechanical and solid-state relays are used – this combination proves itself day after day in millions of switching cycles.

### Innovation, passion, and pioneering spirit

In 1996, Phoenix Contact set a milestone in relay technology: Lead-frame technology was integrated for the first time into relay modules with an overall width of 6.2 mm.



## PLC-INTERFACE with circuit breaker – switching and fuse protection

### Highly compact circuit breaker

PLC-INTERFACE offers the innovative combination of a relay interface and electronic fuse (circuit breaker) in an overall width of just 6.2 mm, for more space in the control cabinet.

The nominal current and shutdown behavior can be configured individually via DIP switches on the device.

### Easy handling

The manual configuration enables the easy setting of different trigger characteristics:

- “Fuse mode” (switch-off after overcurrent)
- “Hiccup mode” (cyclic, independent restart attempt)
- Setting of tripping thresholds from 1 to 6 A, in increments of 1 A



## Our relay modules in use

### 1 Railway technology

Relay and solid-state relay modules in accordance with DIN EN 50155 up to temperature class TX

### 2 Shipbuilding

DNV approval for the entire product range

### 3 Renewable energy

Space-saving relay modules for onshore and offshore applications

### 4 Logistics

Relays and solid-state modules for sorting and braking applications with high clock rates

### 5 Process industry

Highly compact relay modules with ATEX, IECEx, and UL Class 1 Div 2 approvals. Additional variants with increased immunity to interference with long control lines

### 6 Machine building and systems manufacturing

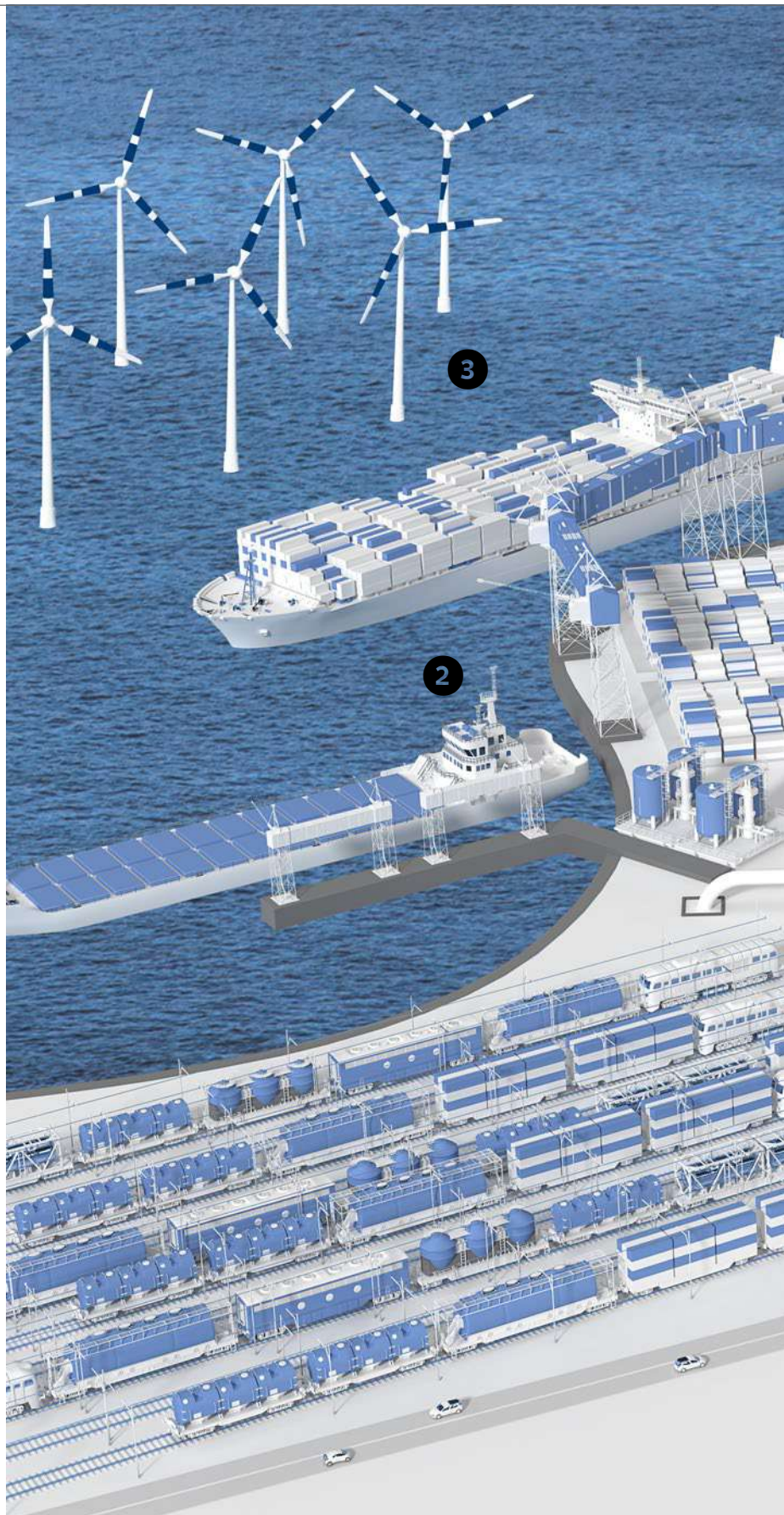
Comprehensive product range with special types such as relay modules with safe feedback through force-guided contacts or hybrid technology in accordance with DIN EN 61810-3 type A

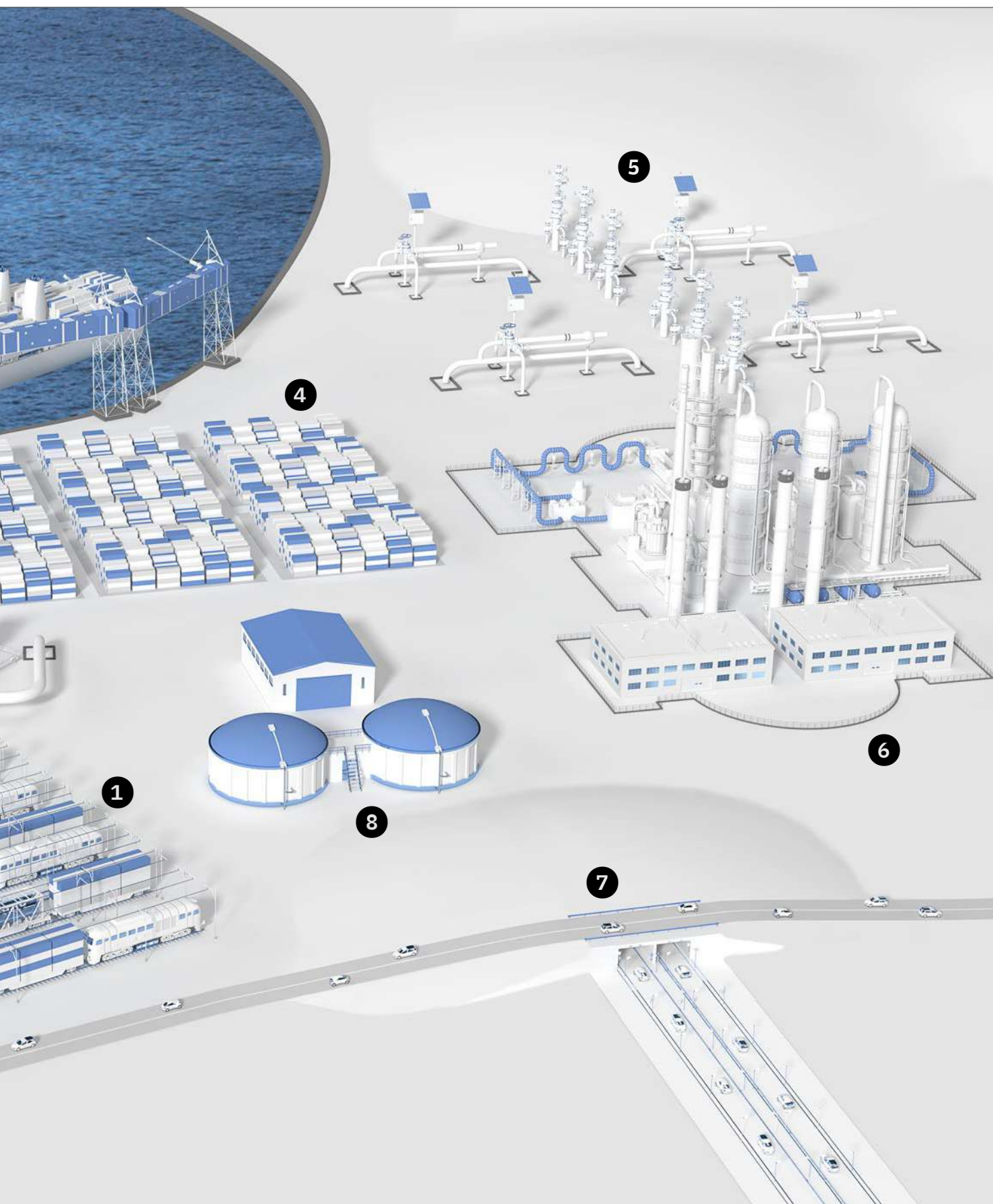
### 7 Infrastructure

Relay modules for high inrush currents (up to 800 A), e.g., for road and tunnel lighting systems

### 8 Water and wastewater

Relay and solid-state relay module with narrow design, designed for universal use





# PLC-INTERFACE relay modules

| PLC-INTERFACE electromechanical relay modules with power contact, 1 changeover contact |                       |                        |                           |                             |                        |                           |                         |                         |
|----------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|-------------------------|
|                                                                                        | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection      | Screw connection        |
|       | 5 V DC                | 1 changeover contact   | 10 mA (12 V)              | 6 A                         | 10 A (4 s)             | 250 V AC/DC               | <a href="#">1119893</a> | <a href="#">1119897</a> |
|                                                                                        | 12 V DC               |                        |                           |                             |                        |                           | <a href="#">2900316</a> | <a href="#">2966906</a> |
|                                                                                        | 24 V DC               |                        |                           |                             |                        |                           | <a href="#">2900299</a> | <a href="#">2966171</a> |
|                                                                                        | 48 V DC               |                        |                           |                             |                        |                           | <a href="#">2900301</a> | <a href="#">2966113</a> |
|                                                                                        | 60 V DC               |                        |                           |                             |                        |                           | <a href="#">2900303</a> | <a href="#">2966139</a> |
|                                                                                        | 24 V AC/DC            |                        |                           |                             |                        |                           | <a href="#">2900300</a> | <a href="#">2966184</a> |
|                                                                                        | 120 V AC<br>110 V DC  |                        |                           |                             |                        |                           | <a href="#">2900304</a> | <a href="#">2966197</a> |
|                                                                                        | 230 V AC<br>220 V DC  |                        |                           |                             |                        |                           | <a href="#">2900305</a> | <a href="#">2966207</a> |

| PLC-INTERFACE electromechanical relay modules with gold contact, 1 changeover contact |                       |                        |                           |                             |                        |                           |                         |                         |
|---------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|-------------------------|
|                                                                                       | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection      | Screw connection        |
|    | 12 V DC               | 1 changeover contact   | 1 mA (24 V)               | 50 mA                       | 50 mA                  | 30 V AC<br>36 V DC        | <a href="#">2900317</a> | <a href="#">2966919</a> |
|                                                                                       | 24 V DC               |                        |                           |                             |                        |                           | <a href="#">2900306</a> | <a href="#">2966265</a> |
|                                                                                       | 48 V DC               |                        |                           |                             |                        |                           | <a href="#">2900308</a> | <a href="#">2966126</a> |
|                                                                                       | 60 V DC               |                        |                           |                             |                        |                           | <a href="#">2900309</a> | <a href="#">2966142</a> |
|                                                                                       | 125 V DC              |                        |                           |                             |                        |                           |                         | <a href="#">2980034</a> |
|                                                                                       | 220 V DC              |                        |                           |                             |                        |                           |                         | <a href="#">2987286</a> |
|                                                                                       | 24 V AC/DC            |                        |                           |                             |                        |                           | <a href="#">2900307</a> | <a href="#">2966278</a> |
|                                                                                       | 48 V AC/DC            |                        |                           |                             |                        |                           | <a href="#">2902650</a> | <a href="#">2959997</a> |
|                                                                                       | 120 V AC<br>110 V DC  |                        |                           |                             |                        |                           | <a href="#">2900310</a> | <a href="#">2966281</a> |
|                                                                                       | 230 V AC<br>220 V DC  |                        |                           |                             |                        |                           | <a href="#">2900311</a> | <a href="#">2966294</a> |

# PLC-INTERFACE relay modules

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Electromechanical and solid-state relay modules

## PLC-INTERFACE electromechanical relay modules with power contact, 1 changeover contact, and manual activation

|                                                                                   | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection | Screw connection |
|-----------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|--------------------|------------------|
|  | 12 V DC               | 1 changeover contact   | 10 mA (12 V)              | 6 A                         | 10 A (4 s)             | 250 V AC/DC               | 2909666            | 2909648          |
|                                                                                   | 24 V DC               |                        |                           |                             |                        |                           | 2909667            | 2909649          |
|                                                                                   | 125 V DC              |                        |                           |                             |                        |                           |                    | 2909652          |
|                                                                                   | 24 V AC/DC            |                        |                           |                             |                        |                           | 2909668            | 2909650          |
|                                                                                   | 120 V AC<br>110 V DC  |                        |                           |                             |                        |                           | 2909669            | 2909651          |
|                                                                                   | 230 V AC<br>220 V DC  |                        |                           |                             |                        |                           | 2909670            | 2909653          |

## PLC-INTERFACE electromechanical relay modules with gold contact, 1-changeover contact, and manual activation

|                                                                                    | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection | Screw connection |
|------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|--------------------|------------------|
|  | 12 V DC               | 1 changeover contact   | 1 mA (24 V)               | 50 mA                       | 50 mA                  | 30 V AC<br>36 V DC        | 2909671            |                  |
|                                                                                    | 24 V DC               |                        |                           |                             |                        |                           | 2909672            | 2909655          |
|                                                                                    | 125 V DC              |                        |                           |                             |                        |                           |                    | 2909658          |
|                                                                                    | 24 V AC/DC            |                        |                           |                             |                        |                           | 2909673            | 2909656          |
|                                                                                    | 120 V AC<br>110 V DC  |                        |                           |                             |                        |                           | 2909674            | 2909657          |
|                                                                                    | 230 V AC<br>220 V DC  |                        |                           |                             |                        |                           | 2909676            | 2909660          |

## PLC-INTERFACE electromechanical relay modules with power contact, actuator variant

|                                                                                     | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection | Screw connection |
|-------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|--------------------|------------------|
|  | 24 V DC               | 1<br>N/O contact       | 10 mA (12 V)              | 6 A                         | 10 A (4 s)             | 250 V AC/DC               | 2900312            | 2966210          |
|                                                                                     |                       | 2<br>N/O contact       | 10 mA (5 V)               |                             | 25 A (20 ms)           |                           | NEW<br>1176847     | 2967109          |

## PLC-INTERFACE electromechanical relay modules with power contact and manual activation, actuator variant

|                                                                                     | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection | Screw connection |
|-------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|--------------------|------------------|
|  | 24 V DC               | 1<br>N/O contact       | 10 mA (12 V)              | 6 A                         | 10 A (4 s)             | 250 V AC/DC               | 2909677            | 2909661          |

## PLC-INTERFACE relay modules

### PLC-INTERFACE electromechanical relay modules with power contact, sensor variant

|                                                                                   | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Screw connection        |
|-----------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|
|  | 24 V DC               | 1<br>N/O contact       | 10 mA                     | 6 A                         | 10 A (4 s)             | 250 V AC/DC               | <a href="#">2966223</a> |
|                                                                                   | 120 V AC<br>110 V DC  |                        |                           |                             | On request             |                           | <a href="#">2966249</a> |
|                                                                                   | 230 V AC<br>220 V DC  |                        |                           |                             |                        |                           | <a href="#">2966252</a> |

### PLC-INTERFACE electromechanical relay modules with gold contact, sensor variant

|                                                                                   | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection      | Screw connection        |
|-----------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|-------------------------|
|  | 24 V DC               | 1<br>N/O contact       | 1 mA (24 V)               | 50 mA                       | 50 mA                  | 30 V AC<br>36 V DC        | <a href="#">2900313</a> | <a href="#">2966317</a> |
|                                                                                   | 120 V AC<br>110 V DC  |                        |                           |                             |                        |                           | <a href="#">2900314</a> | <a href="#">2966320</a> |
|                                                                                   | 230 V AC<br>220 V DC  |                        |                           |                             |                        |                           | <a href="#">2900315</a> | <a href="#">2966333</a> |

### PLC-INTERFACE electromechanical relay modules with gold contact and manual activation, sensor variant

|                                                                                     | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection      | Screw connection        |
|-------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|-------------------------|
|  | 24 V DC               | 1<br>N/O contact       | 1 mA (at 24 V)            | 50 mA                       | 50 mA                  | 30 V AC<br>36 V DC        | <a href="#">2909678</a> | <a href="#">2909663</a> |
|                                                                                     | 120 V AC<br>110 V DC  |                        |                           |                             |                        |                           | <a href="#">2909679</a> | <a href="#">2909664</a> |
|                                                                                     | 230 V AC<br>220 V DC  |                        |                           |                             |                        |                           | <a href="#">2909680</a> | <a href="#">2909665</a> |

### PLC-INTERFACE electromechanical relay modules with power contact, 2 changeover contacts

|                                                                                     | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection      | Screw connection        |
|-------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|-------------------------|
|  | 12 V DC               | 2 changeover contacts  | 10 mA (5 V)               | 6 A                         | 15 A (300 ms)          | 250 V AC/DC               | <a href="#">2900329</a> | <a href="#">2967235</a> |
|                                                                                     | 24 V DC               |                        |                           |                             |                        |                           | <a href="#">2900330</a> | <a href="#">2967060</a> |
|                                                                                     | 48 V DC               |                        |                           |                             |                        |                           | <a href="#">2900333</a> | <a href="#">2967248</a> |
|                                                                                     | 60 V DC               |                        |                           |                             |                        |                           | <a href="#">2900334</a> | <a href="#">2967293</a> |
|                                                                                     | 24 V AC/DC            |                        |                           |                             |                        |                           | <a href="#">2900332</a> | <a href="#">2967073</a> |
|                                                                                     | 120 V AC<br>110 V DC  |                        |                           |                             |                        |                           | <a href="#">2900335</a> | <a href="#">2967086</a> |
|                                                                                     | 230 V AC<br>220 V DC  |                        |                           |                             |                        |                           | <a href="#">2900336</a> | <a href="#">2967099</a> |

## PLC-INTERFACE relay modules

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Electromechanical and solid-state relay modules

### PLC-INTERFACE electromechanical relay modules with gold contact, 2 changeover contacts

|                                                                                   | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection      | Screw connection        |
|-----------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|-------------------------|
|  | 12 V DC               | 2 changeover contacts  | 1 mA (24 V)               | 50 mA                       | 50 mA                  | 30 V AC<br>36 V DC        | <a href="#">2900337</a> | <a href="#">2967277</a> |
|                                                                                   | 24 V DC               |                        |                           |                             |                        |                           | <a href="#">2900338</a> | <a href="#">2967125</a> |
|                                                                                   | 48 V DC               |                        |                           |                             |                        |                           | <a href="#">2900340</a> | <a href="#">2967280</a> |
|                                                                                   | 60 V DC               |                        |                           |                             |                        |                           | <a href="#">2900341</a> | <a href="#">2967303</a> |
|                                                                                   | 24 V AC/DC            |                        |                           |                             |                        |                           | <a href="#">2900339</a> | <a href="#">2967112</a> |
|                                                                                   | 120 V AC<br>110 V DC  |                        |                           |                             |                        |                           | <a href="#">2900342</a> | <a href="#">2967138</a> |
|                                                                                   | 230 V AC<br>220 V DC  |                        |                           |                             |                        |                           | <a href="#">2900343</a> | <a href="#">2967141</a> |

### PLC-INTERFACE electromechanical relay modules with power contact, 2 changeover contacts, and manual activation

|                                                                                    | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection      | Screw connection        |
|------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|-------------------------|
|  | 24 V DC               | 2 changeover contacts  | 10 mA (12 V)              | 6 A                         | 12 A (20 ms)           | 250 V AC/DC               | <a href="#">2910519</a> | <a href="#">2910502</a> |
|                                                                                    | 24 V AC/DC            |                        |                           |                             |                        |                           | <a href="#">2910520</a> | <a href="#">2910503</a> |
|                                                                                    | 120 V AC<br>110 V DC  |                        |                           |                             |                        |                           | <a href="#">2910522</a> | <a href="#">2910505</a> |
|                                                                                    | 230 V AC<br>220 V DC  |                        |                           |                             |                        |                           | <a href="#">2910523</a> | <a href="#">2910506</a> |

### PLC-INTERFACE electromechanical relay modules with gold contact, 2-changeover contacts, and manual activation

|                                                                                     | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection      | Screw connection        |
|-------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|-------------------------|
|  | 24 V DC               | 2 changeover contacts  | 1 mA (12 V)               | 50 mA                       | 50 mA                  | 30 V AC<br>36 V DC        | <a href="#">2910524</a> | <a href="#">2910507</a> |
|                                                                                     | 24 V AC/DC            |                        |                           |                             |                        |                           | <a href="#">2910526</a> | <a href="#">2910508</a> |
|                                                                                     | 120 V AC<br>110 V DC  |                        |                           |                             |                        |                           | <a href="#">2910528</a> | <a href="#">2910511</a> |
|                                                                                     | 230 V AC<br>220 V DC  |                        |                           |                             |                        |                           | <a href="#">2910529</a> | <a href="#">2910513</a> |

## PLC-INTERFACE relay modules

### PLC-INTERFACE electromechanical relay modules with power contact, 1 changeover contact, for high continuous currents

|                                                                                   | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection      | Screw connection        |
|-----------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|-------------------------|
|  | 12 V DC               | 1 changeover contact   | 10 mA (12 V)              | 10 A                        | 30 A (300 ms)          | 250 V AC/DC               | <a href="#">2900290</a> | <a href="#">2967617</a> |
|                                                                                   | 24 V DC               |                        |                           |                             |                        |                           | <a href="#">2900291</a> | <a href="#">2967620</a> |
|                                                                                   | 48 V DC               |                        |                           |                             |                        |                           | <a href="#">2900294</a> | <a href="#">2967646</a> |
|                                                                                   | 60 V DC               |                        |                           |                             |                        |                           | <a href="#">2900295</a> | <a href="#">2967659</a> |
|                                                                                   | 24 V AC/DC            |                        |                           |                             |                        |                           | <a href="#">2900293</a> | <a href="#">2967633</a> |
|                                                                                   | 120 V AC<br>110 V DC  |                        |                           |                             |                        |                           | <a href="#">2900296</a> | <a href="#">2967662</a> |
|                                                                                   | 230 V AC<br>220 V DC  |                        |                           |                             |                        |                           | <a href="#">2900297</a> | <a href="#">2967675</a> |

### PLC-INTERFACE electromechanical relay modules with power contact, 1 changeover contact, and manual activation for high continuous currents

|                                                                                    | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection      | Screw connection        |
|------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|-------------------------|
|  | 24 V DC               | 1 changeover contact   | 10 mA (12 V)              | 10 A                        | 24 A (20 ms)           | 250 V AC/DC               | <a href="#">2910530</a> | <a href="#">2910514</a> |
|                                                                                    | 24 V AC/DC            |                        |                           |                             |                        |                           | <a href="#">2910531</a> | <a href="#">2910515</a> |
|                                                                                    | 120 V AC<br>110 V DC  |                        |                           |                             |                        |                           | <a href="#">2910533</a> | <a href="#">2910517</a> |
|                                                                                    | 230 V AC<br>220 V DC  |                        |                           |                             |                        |                           | <a href="#">2910534</a> | <a href="#">2910518</a> |

# PLC-INTERFACE relay modules for railway applications

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Electromechanical and solid-state relay modules

## PLC-INTERFACE electromechanical relay modules with power contact for railway applications

|                                                                                   | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection      |
|-----------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|
|  | 24 V DC               | 1 changeover contact   | 10 mA (12 V)              | 6 A                         | 10 A (4 s)             | 250 V AC/DC               | <a href="#">2900318</a> |
|                                                                                   |                       | 2 changeover contacts  | 10 mA (5 V)               |                             | 15 A (300 ms)          |                           | <a href="#">2900346</a> |
|                                                                                   | 72 V DC               | 1 changeover contact   | 10 mA (12 V)              |                             | 10 A (4 s)             |                           | <a href="#">2900319</a> |
|                                                                                   |                       | 2 changeover contacts  | 10 mA (5 V)               |                             | 15 A (300 ms)          |                           | <a href="#">2900347</a> |
|                                                                                   | 110 V DC              | 1 changeover contact   | 10 mA (12 V)              |                             | 10 A (4 s)             |                           | <a href="#">2900320</a> |
|                                                                                   |                       | 2 changeover contacts  | 10 mA (5 V)               |                             | 15 A (300 ms)          |                           | <a href="#">2900348</a> |

## PLC-INTERFACE electromechanical relay modules with power contact for high continuous currents for railway applications

|                                                                                   | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection      |
|-----------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|
|  | 24 V DC               | 1 changeover contact   | 10 mA (12 V)              | 10 A                        | 30 A (300 ms)          | 250 V AC/DC               | <a href="#">2900324</a> |
|                                                                                   | 110 V DC              |                        |                           |                             |                        |                           | <a href="#">2900326</a> |

## PLC-INTERFACE electromechanical relay modules with gold contact for railway applications

|                                                                                     | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection      |
|-------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|
|  | 24 V DC               | 1 changeover contact   | 1 mA (24 V)               | 50 mA                       | 50 mA                  | 30 V AC<br>36 V DC        | <a href="#">2900321</a> |
|                                                                                     |                       | 2 changeover contacts  |                           |                             |                        |                           | <a href="#">2900349</a> |
|                                                                                     | 72 V DC               | 1 changeover contact   |                           |                             |                        |                           | <a href="#">2900322</a> |
|                                                                                     |                       | 2 changeover contacts  |                           |                             |                        |                           | <a href="#">2900323</a> |
|                                                                                     | 110 V DC              | 2 changeover contacts  |                           |                             |                        |                           | <a href="#">2900351</a> |

## PLC-INTERFACE electromechanical relay modules for 16.7 Hz input frequency

|                                                                                     | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection      |
|-------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|
|  | 230 V AC              | 2 changeover contacts  | 1 mA                      | 50 mA                       | 50 mA                  | 30 V AC<br>36 V DC        | <a href="#">2900345</a> |

# PLC-INTERFACE relay modules for railway applications

| PLC-INTERFACE solid-state relay modules for railway applications                  |                         |                        |                             |                      |                         |
|-----------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|----------------------|-------------------------|
|                                                                                   | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage    | Push-in connection      |
|  | 24 V DC                 | 300 Hz                 | 3 A                         | 3 V DC ... 33 V DC   | <a href="#">2900379</a> |
|                                                                                   | 110 V DC                | 100 Hz                 |                             |                      | <a href="#">2900380</a> |
|                                                                                   | 24 V DC                 | 50 Hz                  |                             | 12 V DC ... 140 V DC | <a href="#">2900391</a> |
|                                                                                   | 36 V DC                 |                        |                             |                      | <a href="#">2900392</a> |
|                                                                                   | 48 V DC                 |                        |                             |                      | <a href="#">2900393</a> |
|                                                                                   | 72 V DC                 |                        |                             |                      | <a href="#">2900394</a> |
|                                                                                   | 96 V DC                 |                        |                             |                      | <a href="#">2900395</a> |
|                                                                                   | 110 V DC                |                        |                             |                      | <a href="#">2900396</a> |

## PLC-INTERFACE relay modules with force-guided contacts

| Single relay with force-guided contacts                                           |                       |                                     |                           |                             |                        |                           |             |
|-----------------------------------------------------------------------------------|-----------------------|-------------------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------|
|                                                                                   | Nominal input voltage | Contact switching type              | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Item number |
|  | 24 V DC               | 2 changeover contacts, force-guided | 10 mA (5 V)               | 6 A                         | 6 A                    | 250 V AC/DC               | 2908777     |

| PLC-INTERFACE electromechanical relay modules with force-guided contacts          |                       |                                     |                           |                             |                        |                           |                    |                  |
|-----------------------------------------------------------------------------------|-----------------------|-------------------------------------|---------------------------|-----------------------------|------------------------|---------------------------|--------------------|------------------|
|                                                                                   | Nominal input voltage | Contact switching type              | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection | Screw connection |
|  | 24 V DC               | 2 changeover contacts, force-guided | 10 mA (5 V)               | 6 A                         | 6 A                    | 250 V AC/DC               | 2910537            | 2910535          |
|                                                                                   | 24 V AC/DC            |                                     |                           |                             |                        |                           | 2910539            | 2910536          |

| PLC-INTERFACE safe coupling relays with force-guided contacts                       |                       |                                     |          |                   |                              |                           |                    |                  |
|-------------------------------------------------------------------------------------|-----------------------|-------------------------------------|----------|-------------------|------------------------------|---------------------------|--------------------|------------------|
|                                                                                     | Nominal input voltage | Contact switching type              | Category | Performance level | Safety integrity level (SIL) | Maximum switching voltage | Push-in connection | Screw connection |
|  | 24 V DC               | 2 changeover contacts, force-guided | 1        | c                 | 2                            | 250 V AC/DC               | 1480212            | 1480226          |

# PLC-INTERFACE relay modules for potentially explosive areas

| PLC-INTERFACE electromechanical relay modules with power contact, 1 changeover contact, for potentially explosive areas |                       |                        |                           |                             |                        |                           |                         |                         |
|-------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|-------------------------|
|                                                                                                                         | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection      | Screw connection        |
|                                        | 12 V DC               | 1 changeover contact   | 10 mA (12 V)              | 6 A                         | 10 A (4 s)             | 250 V AC/DC               | <a href="#">2909527</a> | <a href="#">2909522</a> |
|                                                                                                                         | 24 V DC               |                        |                           |                             |                        |                           | <a href="#">2909528</a> | <a href="#">2909524</a> |
|                                                                                                                         | 120 V AC<br>110 V DC  |                        |                           |                             |                        |                           | <a href="#">2909529</a> | <a href="#">2909525</a> |
|                                                                                                                         | 230 V AC<br>220 V DC  |                        |                           |                             |                        |                           | <a href="#">2909530</a> | <a href="#">2909526</a> |

| PLC-INTERFACE electromechanical relay modules with power contact, 1-changeover contact, for high continuous currents for potentially explosive areas |                       |                        |                           |                             |                        |                           |                         |                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|-------------------------|
|                                                                                                                                                      | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection      | Screw connection        |
|                                                                     | 12 V DC               | 1 changeover contact   | 10 mA (12 V)              | 10 A                        | 30 A (300 ms)          | 250 V AC/DC               |                         | <a href="#">2909518</a> |
|                                                                                                                                                      | 24 V DC               |                        |                           |                             |                        |                           | <a href="#">2909532</a> | <a href="#">2909519</a> |
|                                                                                                                                                      | 120 V AC<br>110 V DC  |                        |                           |                             |                        |                           | <a href="#">2909533</a> | <a href="#">2909520</a> |
|                                                                                                                                                      | 230 V AC<br>220 V DC  |                        |                           |                             |                        |                           | <a href="#">2909534</a> | <a href="#">2909521</a> |

| PLC-INTERFACE electromechanical relay modules with power contact, 2 changeover contacts, for potentially explosive areas |                       |                        |                           |                             |                        |                           |                         |                         |
|--------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|-------------------------|
|                                                                                                                          | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection      | Screw connection        |
|                                       | 12 V DC               | 2 changeover contacts  | 10 mA (5 V)               | 6 A                         | 15 A (300 ms)          | 250 V AC/DC               | <a href="#">2909513</a> | <a href="#">2909517</a> |
|                                                                                                                          | 24 V DC               |                        |                           |                             |                        |                           | <a href="#">2909514</a> | <a href="#">2909509</a> |
|                                                                                                                          | 120 V AC<br>110 V DC  |                        |                           |                             |                        |                           | <a href="#">2909515</a> | <a href="#">2909511</a> |
|                                                                                                                          | 230 V AC<br>220 V DC  |                        |                           |                             |                        |                           | <a href="#">2909516</a> | <a href="#">2909512</a> |

| PLC-INTERFACE solid-state relay modules for potentially explosive areas             |                         |                        |                             |                    |                         |
|-------------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|--------------------|-------------------------|
|                                                                                     | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage  | Screw connection        |
|  | 24 V DC                 | 300 Hz                 | 3 A                         | 3 V DC ... 33 V DC | <a href="#">5603260</a> |
|                                                                                     |                         |                        | 100 mA                      | 3 V DC ... 48 V DC | <a href="#">5603261</a> |
|                                                                                     | 120 V AC<br>110 V DC    | 10 Hz                  | 3 A                         | 3 V DC ... 33 V DC | <a href="#">5603262</a> |
|                                                                                     |                         |                        | 100 mA                      | 3 V DC ... 48 V DC | <a href="#">5603263</a> |

PLC-INTERFACE relay modules for high inrush currents

| PLC-INTERFACE electromechanical relay modules for high inrush currents            |                       |                        |                           |                             |                                                                   |                           |                    |                  |
|-----------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|-------------------------------------------------------------------|---------------------------|--------------------|------------------|
|                                                                                   | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current                                            | Maximum switching voltage | Push-in connection | Screw connection |
|  | 12 V DC               | 1<br>N/O contact       | 100 mA (12 V)             | 6 A                         | 80 A (20 ms)<br>130 A (peak, at capacitive load, 230 V AC, 24 µF) | 250 V AC/DC               | 1078801            | 1078800          |
|                                                                                   | 24 V DC               |                        |                           |                             |                                                                   |                           | 2900298            | 2967604          |
|                                                                                   |                       |                        |                           |                             | 165 A (20 ms)<br>800 A (200 µs)                                   |                           | 1078683            | 1078680          |

# PLC-INTERFACE relay modules with integrated filter against interference signals

| PLC-INTERFACE electromechanical relay modules with integrated filter against interference signals |                       |                        |                           |                             |                            |                           |                         |                         |
|---------------------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|----------------------------|---------------------------|-------------------------|-------------------------|
|                                                                                                   | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current     | Maximum switching voltage | Push-in connection      | Screw connection        |
|                  | 120 V AC<br>110 V DC  | 1 changeover contact   | 10 mA (12 V)              | 6 A                         | 10 A (4 s)                 | 250 V AC/DC               | <a href="#">1125988</a> | <a href="#">5603593</a> |
|                                                                                                   |                       | 2 changeover contacts  | 10 mA (5 V)               |                             | 15 A (300 ms)              |                           | <a href="#">1136244</a> | <a href="#">1125985</a> |
|                                                                                                   | 230 V AC<br>220 V DC  | 1 N/O contact          | 1 mA (24 V)               | 50 mA                       | 50 mA                      | 30 V AC<br>36 V DC        |                         | <a href="#">1125984</a> |
|                                                                                                   |                       | 1 changeover contact   | 10 mA (12 V)              | 6 A                         | 10 A (4 s)                 | 250 V AC/DC               | <a href="#">2910110</a> | <a href="#">2980490</a> |
|                                                                                                   |                       |                        |                           |                             | 30 A (300 ms, N/O contact) |                           | <a href="#">1136242</a> | <a href="#">1125943</a> |
|                                                                                                   |                       | 2 changeover contacts  | 10 mA (5 V)               |                             | 15 A (300 ms)              |                           | <a href="#">1136245</a> | <a href="#">2980500</a> |

| PLC-INTERFACE electromechanical relay modules with defined input and output thresholds against very high interference signals |                       |                        |                           |                             |                        |                           |                         |                         |
|-------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|-------------------------|
|                                                                                                                               | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection      | Screw connection        |
|                                             | 230 V AC              | 1 changeover contact   | 10 mA (12 V)              | 10 A                        | 30 A (300 ms)          | 250 V AC/DC               | <a href="#">1079404</a> | <a href="#">1079402</a> |
|                                                                                                                               |                       | 2 changeover contacts  | 10 mA (5 V)               | 6 A                         | 15 A (300 ms)          |                           | <a href="#">1079389</a> | <a href="#">1079387</a> |

# PLC-INTERFACE solid-state relay modules

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Electromechanical and solid-state relay modules

## PLC-INTERFACE input solid-state relay modules with DC output max. 100 A

|                                                                                   | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage  | Push-in connection      | Screw connection        |
|-----------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|--------------------|-------------------------|-------------------------|
|  | 24 V DC                 | 300 Hz                 | 100 mA                      | 3 V DC ... 48 V DC | <a href="#">2900352</a> | <a href="#">2966728</a> |
|                                                                                   | 48 V DC                 |                        |                             |                    | <a href="#">2900353</a> | <a href="#">2966993</a> |
|                                                                                   | 60 V DC                 | 100 Hz                 |                             |                    | <a href="#">2900354</a> | <a href="#">2967455</a> |
|                                                                                   | 125 V DC                | 50 Hz                  |                             |                    |                         | <a href="#">2980047</a> |
|                                                                                   | 120 V AC<br>110 V DC    | 10 Hz                  |                             |                    | <a href="#">2900355</a> | <a href="#">2966744</a> |
|                                                                                   | 230 V AC<br>220 V DC    |                        |                             |                    | <a href="#">2900356</a> | <a href="#">2966757</a> |

## PLC-INTERFACE output solid-state relay modules with DC output max. 3 A

|                                                                                    | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage  | Push-in connection      | Screw connection        |
|------------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|--------------------|-------------------------|-------------------------|
|  | 24 V DC                 | 300 Hz                 | 3 A                         | 3 V DC ... 33 V DC | <a href="#">2900364</a> | <a href="#">2966634</a> |
|                                                                                    | 48 V DC                 |                        |                             |                    | <a href="#">2900365</a> | <a href="#">2967002</a> |
|                                                                                    | 60 V DC                 | 100 Hz                 |                             |                    | <a href="#">2900366</a> | <a href="#">2967468</a> |
|                                                                                    | 125 V DC                |                        |                             |                    |                         | <a href="#">2980050</a> |
|                                                                                    | 120 V AC<br>110 V DC    | 10 Hz                  |                             |                    | <a href="#">2900367</a> | <a href="#">2966650</a> |
|                                                                                    | 230 V AC<br>220 V DC    |                        |                             |                    | <a href="#">2900368</a> | <a href="#">2966663</a> |

## PLC-INTERFACE output solid-state relay modules with AC output max. 750 A

|                                                                                     | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage    | Push-in connection      | Screw connection        |
|-------------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|----------------------|-------------------------|-------------------------|
|  | 24 V DC                 | 10 Hz                  | 750 mA                      | 24 V AC ... 253 V AC | <a href="#">2900369</a> | <a href="#">2967840</a> |
|                                                                                     | 48 V DC                 |                        |                             |                      | <a href="#">2900370</a> |                         |
|                                                                                     | 120 V AC<br>110 V DC    | 3 Hz                   |                             |                      | <a href="#">2900372</a> | <a href="#">2967879</a> |
|                                                                                     | 230 V AC<br>220 V DC    |                        |                             |                      | <a href="#">2900374</a> | <a href="#">2967882</a> |

# PLC-INTERFACE solid-state relay modules

| PLC-INTERFACE output solid-state relay modules with DC output max. 1 A            |                         |                        |                             |                      |                         |                         |
|-----------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|----------------------|-------------------------|-------------------------|
|                                                                                   | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage    | Push-in connection      | Screw connection        |
|  | 5 V DC                  | 50 Hz                  | 1 A                         | 12 V DC ... 300 V DC | <a href="#">2900381</a> | <a href="#">2980652</a> |
|                                                                                   | 12 V DC                 |                        |                             |                      | <a href="#">2900382</a> | <a href="#">2980665</a> |
|                                                                                   | 24 V DC                 |                        |                             |                      | <a href="#">2900383</a> | <a href="#">2980678</a> |
|                                                                                   | 60 V DC                 |                        |                             |                      | <a href="#">2900384</a> | <a href="#">2980681</a> |
|                                                                                   | 110 V DC                |                        |                             |                      | <a href="#">2900385</a> | <a href="#">2980694</a> |
|                                                                                   | 220 V DC                |                        |                             |                      | <a href="#">2900387</a> | <a href="#">2980704</a> |
|                                                                                   | 120 V AC                | 10 Hz                  |                             |                      | <a href="#">2900388</a> | <a href="#">2980717</a> |
|                                                                                   | 230 V AC                |                        |                             |                      | <a href="#">2900389</a> | <a href="#">2980720</a> |

| PLC-INTERFACE solid-state relay modules with TTL output                            |                         |                        |                             |                     |                         |                         |
|------------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|
|                                                                                    | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage   | Push-in connection      | Screw connection        |
|  | 24 V DC                 | 1 kHz                  | 50 mA                       | 4.5 V DC ... 6 V DC | <a href="#">2900363</a> | <a href="#">2982728</a> |

| PLC-INTERFACE hybrid solid-state relay modules                                      |                         |                        |                             |                      |                         |                         |
|-------------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|----------------------|-------------------------|-------------------------|
|                                                                                     | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage    | Push-in connection      | Screw connection        |
|  | 24 V DC                 | 1 Hz                   | 10 A                        | 24 V AC ... 253 V AC | <a href="#">2905215</a> | <a href="#">2905214</a> |
|                                                                                     |                         |                        |                             | 12 V DC ... 250 V DC | <a href="#">2905494</a> | <a href="#">2905495</a> |

| PLC-INTERFACE solid-state relay modules with electronic changeover contact          |                         |                        |                             |                    |                         |                         |
|-------------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|--------------------|-------------------------|-------------------------|
|                                                                                     | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage  | Push-in connection      | Screw connection        |
|  | 24 V DC                 | 1000 Hz                | 500 mA                      | 3 V DC ... 48 V DC | <a href="#">2900378</a> | <a href="#">2980636</a> |

# PLC-INTERFACE solid-state relay modules

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Electromechanical and solid-state relay modules

## PLC-INTERFACE solid-state relay modules with 10 A DC output and feedback

|                                                                                   | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage  | Push-in connection      | Screw connection        |
|-----------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|--------------------|-------------------------|-------------------------|
|  | 24 V DC                 | 100 Hz                 | 10 A                        | 8 V DC ... 33 V DC | <a href="#">2900398</a> | <a href="#">2982702</a> |

## PLC-INTERFACE solid-state relay modules with DC output (actuator variant)

|                                                                                   | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage  | Push-in connection      | Screw connection        |
|-----------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|--------------------|-------------------------|-------------------------|
|  | 5 V DC                  | 300 Hz                 | 3 A                         | 3 V DC ... 33 V DC | <a href="#">2900375</a> | <a href="#">2980144</a> |
|                                                                                   | 24 V DC                 |                        | 5 A                         |                    | <a href="#">2900376</a> | <a href="#">2966676</a> |
|                                                                                   |                         |                        |                             |                    | <a href="#">1194158</a> | <a href="#">2982786</a> |

## PLC-INTERFACE solid-state relay modules with AC output (actuator variant)

|                                                                                     | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage    | Push-in connection                    | Screw connection        |
|-------------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|----------------------|---------------------------------------|-------------------------|
|  | 24 V DC                 | 10 Hz                  | 0.75 A                      | 24 V AC ... 253 V AC |                                       | <a href="#">2967947</a> |
|                                                                                     |                         |                        | 2 A                         |                      | <b>NEW</b><br><a href="#">1176854</a> | <a href="#">2982760</a> |

## PLC-INTERFACE solid-state relay modules with AC output for high inrush currents up to 250 A (1 ms)

|                                                                                     | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage    | Push-in connection      | Screw connection        |
|-------------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|----------------------|-------------------------|-------------------------|
|  | 24 V DC                 | 10 Hz                  | 2.4 A                       | 24 V AC ... 253 V AC | <a href="#">2904632</a> | <a href="#">2904631</a> |

## PLC-INTERFACE solid-state relay modules with DC output (sensor variants)

|                                                                                     | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage  | Push-in connection      | Screw connection        |
|-------------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|--------------------|-------------------------|-------------------------|
|  | 24 V DC                 | 300 Hz                 | 100 mA                      | 3 V DC ... 48 V DC | <a href="#">2900358</a> | <a href="#">2966773</a> |
|                                                                                     | 120 V AC<br>110 V DC    | 10 Hz                  |                             |                    | <a href="#">2900359</a> | <a href="#">2966799</a> |
|                                                                                     | 230 V AC<br>220 V DC    |                        |                             |                    | <a href="#">2900361</a> | <a href="#">2966809</a> |

## PLC-INTERFACE relay modules for special applications

### PLC-INTERFACE electromechanical relay modules with two independent relays

|                                                                                   | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection | Screw connection |
|-----------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|--------------------|------------------|
|  | 24 V DC               | 2<br>N/O contact       | 5 mA                      | 3.5 A                       | 5 A                    | 250 V AC<br>30 V DC       | 2901639            | 2987309          |

### PLC-INTERFACE electromechanical relay modules for weak signal sources from 24 V DC / 1 mA

|                                                                                   | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection | Screw connection |
|-----------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|--------------------|------------------|
|  | 5 V DC                | 1<br>N/O contact       | 10 mA                     | 6 A                         | 10 A (4 s)             | 250 V AC/DC               | 1094764            | 1094759          |
|                                                                                   | 12 V DC               |                        |                           |                             |                        |                           | 1094765            | 1094760          |
|                                                                                   | 24 V DC               |                        |                           |                             |                        |                           | 1094767            | 1094761          |

### PLC-INTERFACE pulse expansion module, pulse measurement from >0.1 ms

|                                                                                     | Rated actuating voltage | Limiting continuous current | Switching voltage  | Push-in connection | Screw connection |
|-------------------------------------------------------------------------------------|-------------------------|-----------------------------|--------------------|--------------------|------------------|
|  | 24 V DC                 | 100 mA                      | 3 V DC ... 48 V DC | 2903173            | 2903171          |

### PLC-INTERFACE electronic initiator terminals for NAMUR proximity sensors

|                                                                                     | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching points in accordance with EN 60947-5-6                                                                                              | Push-in connection | Screw connection |
|-------------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------|
|  | 24 V DC                 | 350 Hz                 | 50 mA                       | ≥2.1 mA (in conducting state)<br>≤1.2 mA (in locked state)<br>6.3 mA ... 10 mA (during short circuit)<br>0 mA ... 0.35 mA (with a wire break) | 2900397            | 2982663          |

### PLC-INTERFACE electromechanical relay modules with manual switch

|                                                                                     | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Push-in connection | Screw connection |
|-------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|--------------------|------------------|
|  | 24 V AC/DC            | 1<br>N/O contact       | 10 mA (12 V)              | 6 A                         | On request             | 250 V AC/DC               | 2900328            | 2982236          |

## PLC-INTERFACE relay modules for special applications

| PLC-INTERFACE manual switch module without relays                                 |                           |                           |                           |                        |                  |
|-----------------------------------------------------------------------------------|---------------------------|---------------------------|---------------------------|------------------------|------------------|
|                                                                                   | Maximum switching voltage | Minimum switching voltage | Minimum switching current | Maximum inrush current | Screw connection |
|  | 72 V DC                   | 2 V DC                    | 1 mA                      | 50 mA                  | 2980733          |

| PLC-INTERFACE inverter module for NPN/PNP transistor outputs                      |                     |                        |                                     |                                     |                    |                  |
|-----------------------------------------------------------------------------------|---------------------|------------------------|-------------------------------------|-------------------------------------|--------------------|------------------|
|                                                                                   | Supply voltage      | Transmission frequency | Activation threshold                | Shutoff threshold                   | Push-in connection | Screw connection |
|  | 20 V DC ... 30 V DC | 15 kHz                 | NPN input: ≤5 V<br>PNP input: ≥19 V | NPN input: ≥15 V<br>PNP input: ≤9 V | NEW<br>1395232     | NEW<br>1395229   |

| PLC-INTERFACE electronic circuit breaker                                            |                        |                                  |                           |                         |                    |                  |
|-------------------------------------------------------------------------------------|------------------------|----------------------------------|---------------------------|-------------------------|--------------------|------------------|
|                                                                                     | Operating voltage (UN) | Adjustable tripping current (IN) | Current consumption (In+) | Maximum capacitive load | Push-in connection | Screw connection |
|  | 24 V DC                | 1 A; 2 A; 3 A; 4 A; 5 A; 6 A     | 12 mA                     | 12000 µF                | NEW<br>1328360     | NEW<br>1328357   |

## PLC-INTERFACE accessories

| Bridges                                                                            |                                                                                                                         |                 |                         |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------|
|                                                                                    | Description                                                                                                             | Type            | Item no.                |
|   | Single plug-in bridge, number of positions: 2, length: 6 mm, color: blue                                                | FBST 6-PLC BU   | <a href="#">2966812</a> |
|                                                                                    | Single plug-in bridge, number of positions: 2, length: 6 mm, color: gray                                                | FBST 6-PLC GY   | <a href="#">2966825</a> |
|                                                                                    | Single plug-in bridge, number of positions: 2, length: 6 mm, color: red                                                 | FBST 6-PLC RD   | <a href="#">2966236</a> |
|                                                                                    | Single plug-in bridge, number of positions: 2, length: 8 mm, color: gray                                                | FBST 8-PLC GY   | <a href="#">2967688</a> |
|                                                                                    | Single plug-in bridge, number of positions: 2, length: 14 mm, color: black                                              | FBST 14-PLC BK  | <a href="#">2967691</a> |
|   | Plug-in bridge, length: 50 mm, color: blue                                                                              | FBST 50-PLC BU  | <a href="#">1081051</a> |
|                                                                                    | Plug-in bridge, length: 50 mm, color: gray                                                                              | FBST 50-PLC GY  | <a href="#">1081053</a> |
|                                                                                    | Plug-in bridge, length: 50 mm, color: red                                                                               | FBST 50-PLC RD  | <a href="#">1081050</a> |
|   | Continuous plug-in bridge, length: 500 mm, color: brown                                                                 | FBST 500-PLC BN | <a href="#">2967976</a> |
|                                                                                    | Continuous plug-in bridge, length: 500 mm, color: blue                                                                  | FBST 500-PLC BU | <a href="#">2966692</a> |
|                                                                                    | Continuous plug-in bridge, length: 500 mm, color: gray                                                                  | FBST 500-PLC GY | <a href="#">2966838</a> |
|                                                                                    | Continuous plug-in bridge, length: 500 mm, color: red                                                                   | FBST 500-PLC RD | <a href="#">2966786</a> |
|  | Passive feed-through bridge; can be inserted instead of a relay or solid-state relay, bridges terminal points A1 and 14 | PLC-BP A1-14    | <a href="#">2980283</a> |

| Feed-in terminal                                                                    |                                                                                   |            |                         |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------|-------------------------|
|                                                                                     | Description                                                                       | Type       | Item no.                |
|  | Feed-in terminal, for feed-in of up to four potentials, for mounting on NS 35/7,5 | PLC-ESK GY | <a href="#">2966508</a> |

| Partition plate                                                                     |                                                                                                                                                                                                                                                                     |            |                         |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------------------|
|                                                                                     | Description                                                                                                                                                                                                                                                         | Type       | Item no.                |
|  | Insulating plate, 2 mm thick, required at the start and end of every PLC terminal strip. Furthermore, it is used for: optical separation of groups, safe separation of different voltages of adjacent PLC-INTERFACES in accordance with DIN VDE 0106-101, isolation | PLC-ATP BK | <a href="#">2966841</a> |

Fuse adapters

Fuse adapters for relay modules  
Fuse protection without further space requirements

The fuse adapter for the PLC-INTERFACE relay system with an overall width of 6.2 mm makes it possible for you to fuse channel-by-channel without taking up additional space on the DIN rail. You can easily extend existing installations with this protective function.

Your advantages

✓

Easy extension of existing installations with the PLC-INTERFACE relay system through simple snap-on mounting

✓

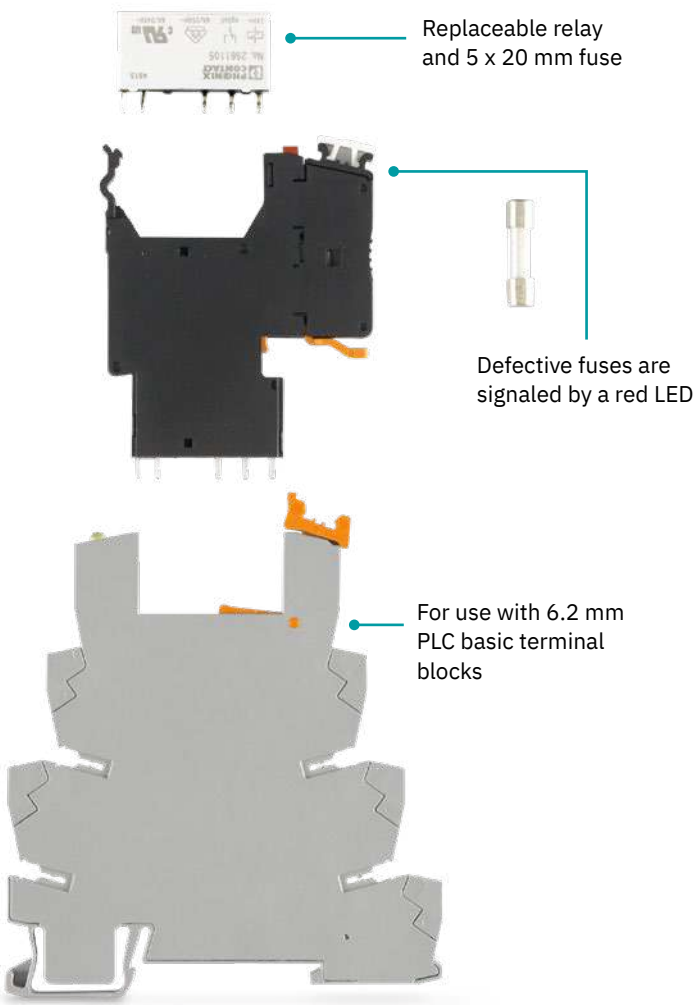
Special relay base versions not needed – the standard portfolio can be used

✓

No additional space needed on the DIN rail

✓

Easy access to the fuse

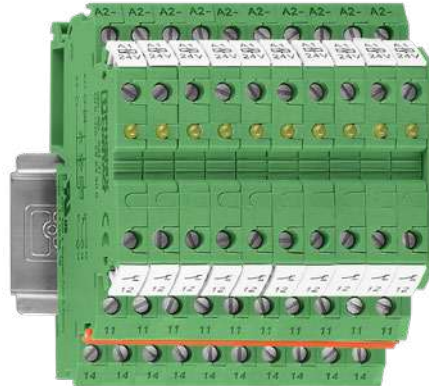


| Fuse adapters                                                                       |                                                                                                                                                                      |                         |          |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|----------|
|                                                                                     | Description                                                                                                                                                          | Type                    | Item no. |
|  | Safety plug adapter for use on a 6.2 mm PLC basic terminal block. For 5 x 20 mm fuses. Operating voltage: 12 ... 24 V AC/DC. With LED for fuse failure indication.   | PLC-FA-I-5X20-12-24UC   | 1186499  |
|                                                                                     | Safety plug adapter for use on a 6.2 mm PLC basic terminal block. For 5 x 20 mm fuses. Operating voltage: 120 ... 230 V AC/DC. With LED for fuse failure indication. | PLC-FA-I-5X20-120-230UC | 1186508  |
|                                                                                     | Safety plug adapter for use on a 6.2 mm PLC basic terminal block. For 5 x 20 mm fuses. Operating voltage: Universal. Without fuse failure indication.                | PLC-FA-5X20             | 1186510  |

## DEK solid-state relay terminal blocks

### Relay modules in terminal block design – DEK series

The Phoenix Contact DEK interface terminal blocks offer complete interface functions in just a 6.2 mm narrow terminal block housing. The powerful interfaces have not only the design, but also the high comfort of use of terminal blocks with the use of standard terminal block accessories.



#### Relay terminal for middle to high power supplies, 1 changeover contact

|                                                                                     | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Screw connection        |
|-------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|
|  | 24 V DC               | 1 changeover contact   | 10 mA                     | 6 A                         | 10 A (4 s)             | 250 V AC/DC               | <a href="#">2964500</a> |

#### Relay terminal for middle to high power supplies, 1 N/O contact, sensor variant

|                                                                                     | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Screw connection        |
|-------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|
|  | 5 V AC/DC             | 1 N/O contact          | 1 mA                      | 3 A                         | 5 A                    | 250 V AC<br>125 V DC      | <a href="#">2941170</a> |
|                                                                                     | 24 V AC/DC            |                        |                           |                             |                        |                           | <a href="#">2941154</a> |
|                                                                                     |                       |                        |                           |                             |                        |                           | <a href="#">2964050</a> |

#### Relay terminal for middle to high power supplies, 1 N/O contact, actuator variant

|                                                                                     | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Screw connection        |
|-------------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|
|  | 5 V AC/DC             | 1 N/O contact          | 1 mA                      | 3 A                         | 5 A                    | 250 V AC<br>125 V DC      | <a href="#">2941183</a> |
|                                                                                     | 24 V AC/DC            |                        |                           |                             |                        |                           | <a href="#">2940171</a> |
|                                                                                     |                       |                        |                           |                             |                        |                           | <a href="#">2964063</a> |

# DEK solid-state relay terminal blocks for special applications

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Electromechanical and solid-state relay modules

## Relay terminal block with DC voltage output / max. = 100 mA

|                                                                                  | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage  | Screw connection        |
|----------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|--------------------|-------------------------|
|  | 5 V DC                  | 300 Hz                 | 100 mA                      | 3 V DC ... 48 V DC | <a href="#">2940223</a> |
|                                                                                  | 12 V DC                 |                        |                             |                    | <a href="#">2964487</a> |
|                                                                                  | 24 V DC                 |                        |                             |                    | <a href="#">2940207</a> |
|                                                                                  | 120 V AC                | 3 Hz                   |                             |                    | <a href="#">2941659</a> |
|                                                                                  | 230 V AC                |                        |                             |                    | <a href="#">2940210</a> |

## Relay terminal block with DC voltage output / max. = 3 A

|                                                                                  | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage  | Screw connection        |
|----------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|--------------------|-------------------------|
|  | 5 V DC                  | 300 Hz                 | 3 A                         | 3 V DC ... 30 V DC | <a href="#">2941361</a> |
|                                                                                  | 12 V DC                 |                        |                             |                    | <a href="#">2941387</a> |
|                                                                                  | 24 V DC                 |                        |                             |                    | <a href="#">2941374</a> |

## Relay terminal block with DC voltage output / max. = 3 mA, actuator variant

|                                                                                    | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage  | Screw connection        |
|------------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|--------------------|-------------------------|
|  | 24 V DC                 | 300 Hz                 | 3 A                         | 3 V DC ... 30 V DC | <a href="#">2964296</a> |

## Relay terminal block with DC voltage output / max. = 10 A

|                                                                                    | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage  | Screw connection        |
|------------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|--------------------|-------------------------|
|  | 5 V DC                  | 100 Hz                 | 10 A                        | 8 V DC ... 33 V DC | <a href="#">2961752</a> |
|                                                                                    | 12 V DC                 |                        |                             |                    | <a href="#">2961749</a> |
|                                                                                    | 24 V DC                 |                        |                             |                    | <a href="#">2964322</a> |

## Relay terminal block with DC voltage output / max. = 800 mA

|                                                                                    | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage    | Screw connection        |
|------------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|----------------------|-------------------------|
|  | 5 V DC                  | 10 Hz                  | 0.8 A                       | 10 V AC ... 253 V AC | <a href="#">2964623</a> |
|                                                                                    | 12 V DC                 |                        |                             |                      | <a href="#">2964636</a> |
|                                                                                    | 24 V DC                 |                        |                             |                      | <a href="#">2964649</a> |

## DEK solid-state relay terminal blocks for special applications

### Relay terminal block with manual switch and integrated relay

|                                                                                   | Nominal input voltage | Contact switching type | Minimum switching current | Limiting continuous current | Maximum inrush current | Maximum switching voltage | Screw connection        |
|-----------------------------------------------------------------------------------|-----------------------|------------------------|---------------------------|-----------------------------|------------------------|---------------------------|-------------------------|
|  | 24 V AC/DC            | 1 N/O contact          | 1 mA                      | 3 A                         | 5 A                    | 250 V AC<br>125 V DC      | <a href="#">2964131</a> |

### Relay terminal block with solid-state relay input max. 100 mA

|                                                                                   | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage  | Screw connection        |
|-----------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|--------------------|-------------------------|
|  | 230 V AC                | 5 Hz                   | 100 mA                      | 3 V DC ... 48 V DC | <a href="#">2964678</a> |

### Relay terminal block with DC voltage output 100 kHz

|                                                                                     | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage  | Screw connection        |
|-------------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|--------------------|-------------------------|
|  | 5 V DC                  | 100 kHz                | 50 mA                       | 4 V DC ... 30 V DC | <a href="#">2964270</a> |
|                                                                                     | 24 V DC                 |                        |                             |                    | <a href="#">2964283</a> |

### Relay terminal block with DC voltage output push-pull 100 kHz

|                                                                                     | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching voltage   | Screw connection        |
|-------------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|---------------------|-------------------------|
|  | 5 V DC                  | 100 kHz                | 50 mA                       | 4 V DC ... 18 V DC  | <a href="#">2964542</a> |
|                                                                                     | 24 V DC                 |                        |                             |                     | <a href="#">2964364</a> |
|                                                                                     | 5 V DC                  |                        |                             | 14 V DC ... 30 V DC | <a href="#">2964555</a> |
|                                                                                     | 24 V DC                 |                        |                             |                     | <a href="#">2964348</a> |

## DEK solid-state relay terminal block accessories

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Electromechanical and solid-state relay modules

### Relay terminal block for inductive proximity sensors in accordance with NAMUR

|                                                                                  | Rated actuating voltage | Transmission frequency | Limiting continuous current | Switching points in accordance with EN 60947-5-6                                                                                              | Screw connection |
|----------------------------------------------------------------------------------|-------------------------|------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------|
|  | 24 V DC                 | 1 kHz                  | 50 mA                       | ≥2.1 mA (in conducting state)<br>≤1.2 mA (in locked state)<br>6.3 mA ... 10 mA (during short circuit)<br>0 mA ... 0.35 mA (with a wire break) | 2940799          |

### Inverter module for NPN/PNP transistor outputs

|                                                                                  | Supply voltage      | Transmission frequency | Activation threshold                                             | Shutoff threshold                                               | Screw connection |
|----------------------------------------------------------------------------------|---------------------|------------------------|------------------------------------------------------------------|-----------------------------------------------------------------|------------------|
|  | 20 V DC ... 30 V DC | 15 kHz                 | NPN input: <5 V (at UV = 24 V; <(UV - 19 V))<br>PNP input: >19 V | NPN input: >15 V (at UV = 24 V; >(UV - 9 V))<br>PNP input: <9 V | 2964319          |

### Accessories

|                                                                                    | Description                                                                                                                 | Type         | Item no. |
|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|--------------|----------|
|  | Flexible wire loop bridge, 50-pos., conductor cross-section: 0.5 mm, loop length: 90 mm, ferrule length: 8 mm, color: black | DB 50- 90 BK | 2820916  |
|                                                                                    | Flexible wire loop bridge, 50-pos., conductor cross-section: 0.5 mm, loop length: 90 mm, ferrule length: 8 mm, color: blue  | DB 50- 90 BU | 2821180  |
|                                                                                    | Flexible wire loop bridge, 50-pos., conductor cross-section: 0.5 mm, loop length: 90 mm, ferrule length: 8 mm, color: gray  | DB 50- 90 GY | 2820929  |
|                                                                                    | Flexible wire loop bridge, 50-pos., conductor cross-section: 0.5 mm, loop length: 90 mm, ferrule length: 8 mm, color: red   | DB 50- 90 RD | 2864639  |
|  | Cover as termination of a terminal block row, color: green                                                                  | D-DEK 1,5 GN | 2716949  |

# Programmable logic relay system

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## Extremely compact control and switching

On the logic module (or control relay) market, the PLC logic relay system is the first to combine logic, interface, and field connection levels in a single solution. This means that you can switch and control I/O signals with just one compact and flexible system. You can combine the logic module with the corresponding relay and analog modules as required. The modular structure enables a broad spectrum of application options.

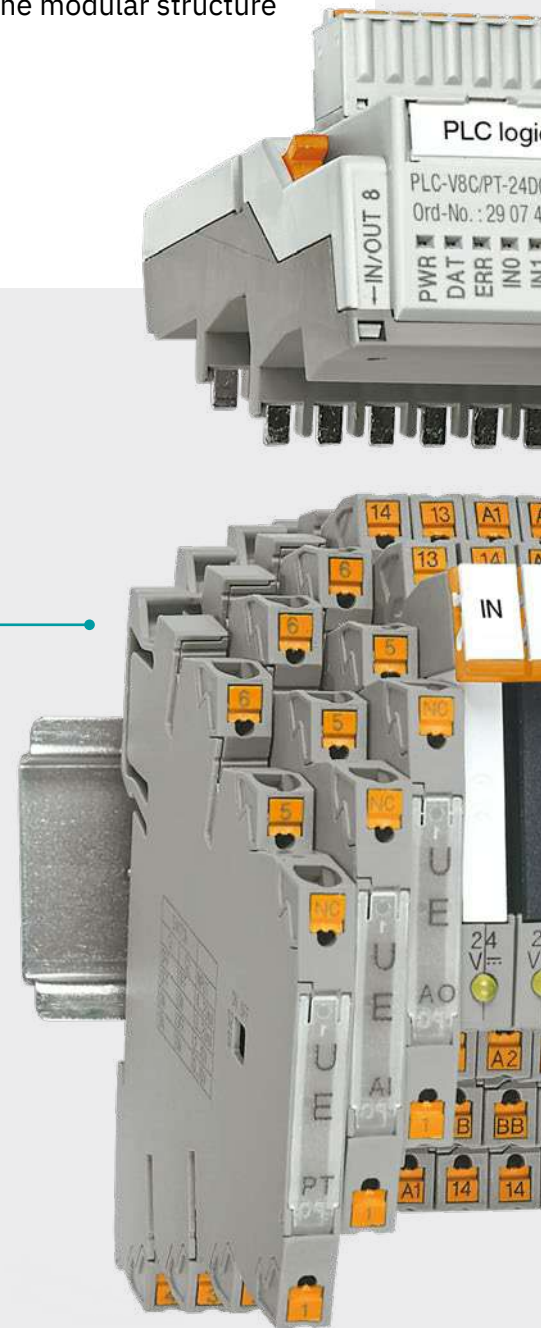
### High availability

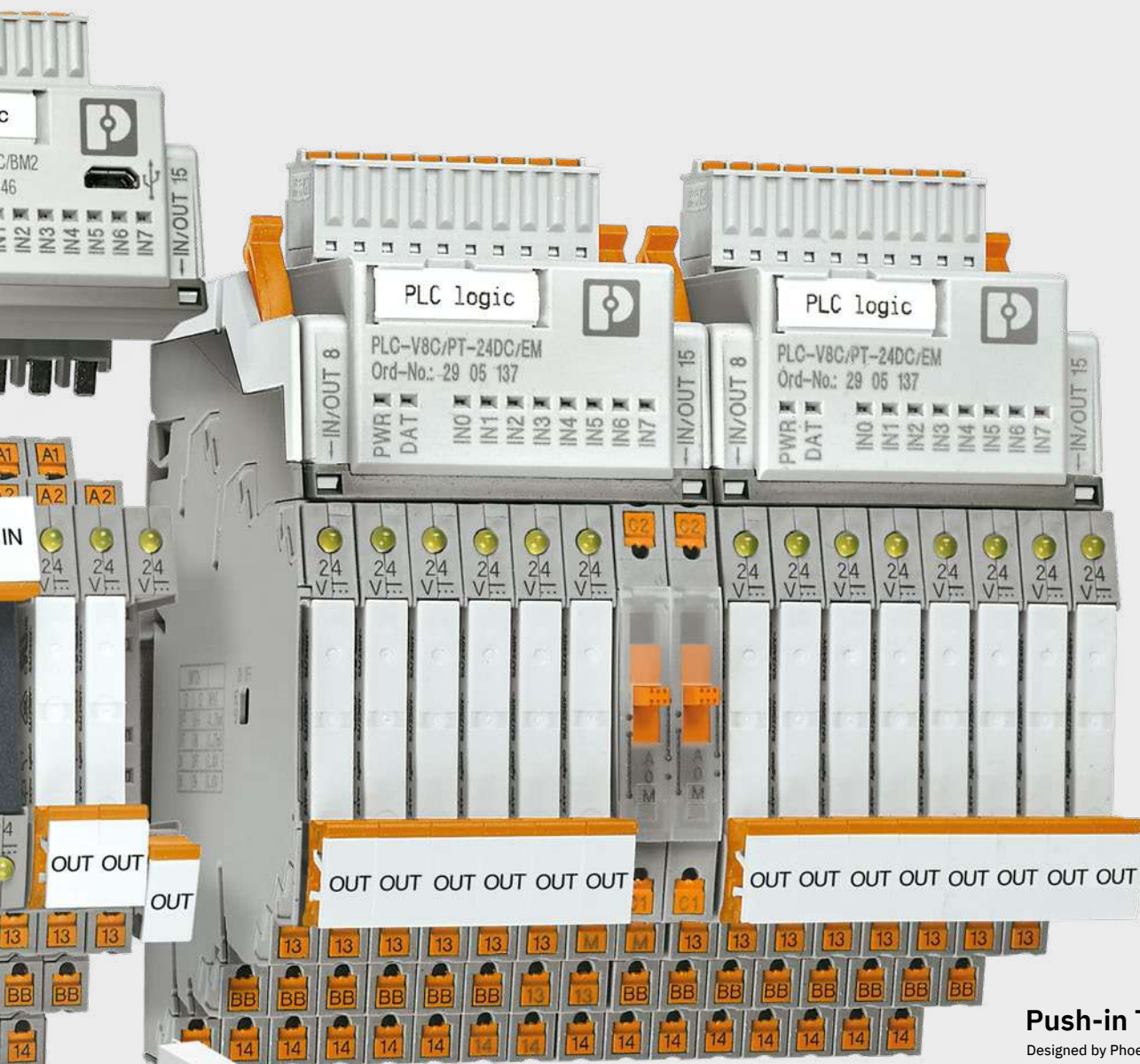
Benefit from high machine and system availability. The modular design of PLC logic with plug-in switching elements enables relays to be replaced swiftly in the event of servicing.



### Intuitive programming

LOGIC+ is the intuitive software which allows you to implement your projects quickly.





## Push-in Technology

Designed by Phoenix Contact

### Flexible combination

Use electromechanical and solid-state relays and analog input and output modules for your individual application.

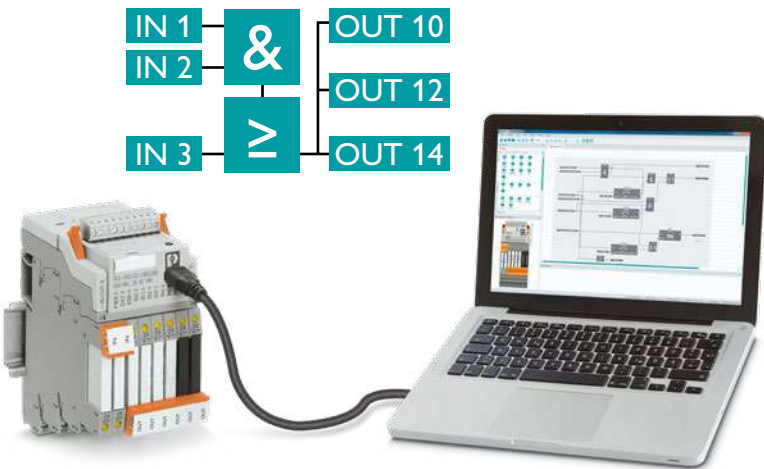
### Efficient wiring

Push-in connection technology and special versions for the sensor or actuator wiring.

# Easy handling

## Programmable logic modules

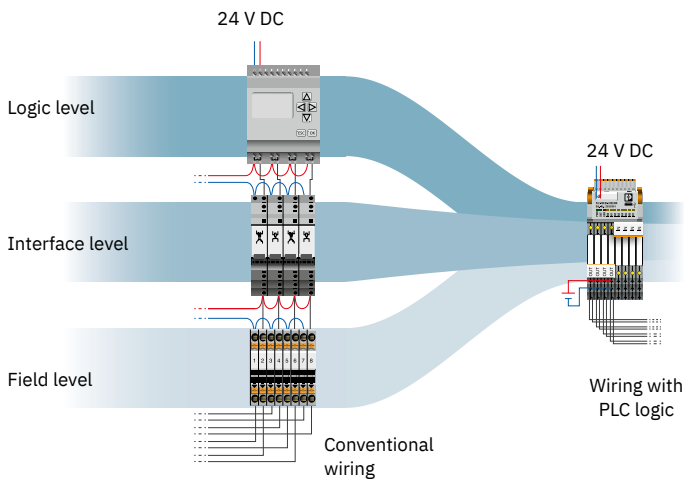
Combine the advantages of plug-in relays with logic functions and intuitive software, and implement small automation tasks with PLC logic.



## Reduce wiring costs

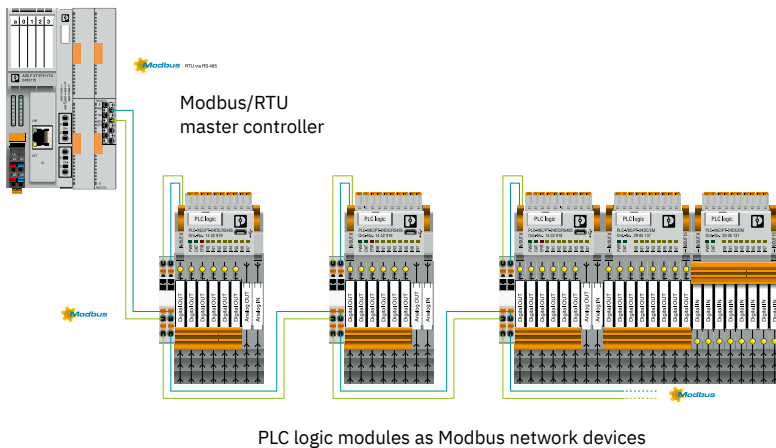
With conventional logic modules, module wiring is complex and time-consuming. To avoid the disadvantages of permanently soldered relays, additional relay modules are often used in front of the inputs and outputs.

PLC logic replaces conventional switching and control devices and reduces the wiring required.



## Easy networking via Modbus/RTU

The new logic modules with an integrated RS-485 interface enable easy integration into Modbus/RTU networks. As decentral basic modules with 16 I/Os or in a full configuration with two extension modules and 48 I/Os, the modules are connected as devices of higher-level automation systems. The independent control concept means that the functionality of the local application is ensured even if Modbus communication is lost.



## PLC logic modules and PLC-INTERFACE relays

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Programmable logic relay system

| Logic modules                                                                    |                                                                                                                                                                                                                                                                                                                      |                    |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
|                                                                                  | Description                                                                                                                                                                                                                                                                                                          | Push-in connection |
|  | PLC logic stand-alone module, Generation 2, with 16 I/Os, for plug-in connection to eight digital or analog PLC-INTERFACE terminal blocks, cannot be extended, real-time clock, micro USB female connector, accommodates memory module and Bluetooth adapter, Push-in connection                                     | 2907443            |
|                                                                                  | PLC logic basic module, Generation 2, with 16 I/Os, for plug-in connection to eight digital or analog PLC-INTERFACE terminal blocks, can be extended to 48 I/Os, real-time clock, micro USB female connector, accommodates memory module and Bluetooth adapter, Push-in connection                                   | 2907446            |
|                                                                                  | PLC logic basic module with RS-485 connection for Modbus/RTU communication, with 16 I/Os, for plug-in connection to 8 digital or analog PLC-INTERFACE terminal blocks, can be extended to 48 I/Os, real-time clock, micro USB female connector, accommodates memory module and Bluetooth adapter, Push-in connection | NEW<br>1452919     |
|                                                                                  | PLC logic extension module with 16 I/Os, for plug-in connection to eight PLC-INTERFACE terminal blocks for extending the basic module (a maximum of two extension modules can be connected to a basic module), Push-in connection                                                                                    | 2905137            |

| Relay output                                                                        |                                                                                                                                                                                                                                        |                    |                  |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------|
|                                                                                     | Description                                                                                                                                                                                                                            | Push-in connection | Screw connection |
|  | PLC-INTERFACE, consisting of PLC-BPT.../21 basic terminal block with Push-in connection and plug-in miniature relay with power contact, for mounting on NS 35/7,5 DIN rail, 1 changeover contact, input voltage 24 V DC                | 2900299            | 2966171          |
|                                                                                     | PLC-INTERFACE, consisting of PLC-BPT.../21 basic terminal block with Push-in connection and plug-in miniature relay with multi-layer gold contact, for mounting on DIN rail NS 35/7,5, 1 changeover contact, input voltage 24 V DC     | 2900306            | 2966265          |
|                                                                                     | PLC-INTERFACE for output functions, consisting of PLC-BPT.../ACT basic terminal block with Push-in connection and plug-in miniature relay with power contact, for mounting on DIN rail NS 35/7,5, 1 N/O contact, input voltage 24 V DC | 2900312            | 2966210          |
|                                                                                     | PLC-INTERFACE with switch (manual operation) for the "Manual, Zero and Automatic" functions, with Push-in connection and integrated power contact relay, for mounting on DIN rail NS 35/7,5, 1 N/O contact, input voltage 24 V AC/DC   | 2900328            | 2982236          |

| Solid-state relay output                                                            |                                                                                                                                                                                                                                                                               |                    |                  |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------|
|                                                                                     | Description                                                                                                                                                                                                                                                                   | Push-in connection | Screw connection |
|  | PLC-INTERFACE, consisting of PLC-BPT.../21 basic terminal block with Push-in connection and plug-in miniature solid-state relay, for mounting on DIN rail NS 35/7,5, 1 N/O contact, input: 24 V DC, output: 3 ... 48 V DC/100 mA                                              | 2900352            | 2966728          |
|                                                                                     | PLC-INTERFACE, consisting of PLC-BPT.../21 basic terminal block with Push-in connection and plug-in miniature solid-state relay, for mounting on DIN rail NS 35/7,5, 1 N/O contact, input: 24 V DC, output: 3 ... 33 V DC/3 A                                                 | 2900364            | 2966634          |
|                                                                                     | PLC-INTERFACE, consisting of PLC-BPT.../21 basic terminal block with Push-in connection and plug-in miniature solid-state relay, for mounting on DIN rail NS 35/7,5, 1 N/O contact, input: 24 V DC, output: 24 ... 253 V AC/0.75 A                                            | 2900369            | 2967840          |
|                                                                                     | PLC-INTERFACE for output functions, consisting of PLC-BPT.../ACT basic terminal block with Push-in connection and plug-in miniature solid-state relay, for mounting on DIN rail NS 35/7,5, 1 N/O contact, input: 24 V DC, output: 3 ... 33 V DC/3 A                           | 2900376            | 2966676          |
|                                                                                     | PLC-INTERFACE with electronic changeover contact, consisting of PLC-BPT.../21 basic terminal block with Push-in connection and integrated miniature solid-state relay, for mounting on DIN rail NS 35/7,5, 1 changeover contact, input: 24 V DC, output: 3 ... 48 V DC/500 mA | 2900378            | 2980636          |

# PLC-INTERFACE relays

| Relay input                                                                       |                                                                                                                                                                                                                                                            |                    |                  |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------|
|                                                                                   | Description                                                                                                                                                                                                                                                | Push-in connection | Screw connection |
|  | PLC-INTERFACE for input functions, consisting of PLC-BPT.../SEN basic terminal block with Push-in connection and plug-in miniature relay with multi-layer gold contact, for mounting on DIN rail NS 35/7,5, 1 N/O contact, input voltage 24 V DC           | 2900313            | 2966317          |
|                                                                                   | PLC-INTERFACE for input functions, consisting of PLC-BPT.../SEN basic terminal block with Push-in connection and plug-in miniature relay with multi-layer gold contact, for mounting on DIN rail NS 35/7,5, 1 N/O contact, input voltage 120 V AC/110 V DC | 2900314            | 2966320          |
|                                                                                   | PLC-INTERFACE for input functions, consisting of PLC-BPT.../SEN basic terminal block with Push-in connection and plug-in miniature relay with multi-layer gold contact, for mounting on DIN rail NS 35/7,5, 1 N/O contact, input voltage 230 V AC/220 V DC | 2900315            | 2966333          |
|  | Plug-in miniature power relay, with multi-layer gold contact, 1 changeover contact, input voltage 4.5 V DC                                                                                                                                                 | 2961370            |                  |

| Solid-state relay input                                                             |                                                                                                                                                                                        |                    |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
|                                                                                     | Description                                                                                                                                                                            | Push-in connection |
|  | PLC-INTERFACE for input functions with PLC logic, with Push-in connection and plug-in miniature solid-state relay, for mounting on a DIN rail, 1 N/O contact, input: 24 V DC           | 2908172            |
|                                                                                     | PLC-INTERFACE for input functions with PLC logic, with Push-in connection and plug-in miniature solid-state relay, for mounting on a DIN rail, 1 N/O contact, input: 120 V AC/110 V DC | 2908174            |
|                                                                                     | PLC-INTERFACE for input functions with PLC logic, with Push-in connection and plug-in miniature solid-state relay, for mounting on a DIN rail, 1 N/O contact, input: 230 V AC/220 V DC | 2908176            |

## PLC-INTERFACE relays and accessories

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Programmable logic relay system

### Analog input and output discs

|                                                                                   | Description                                                                                                                                                                                              | Push-in connection |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
|  | Analog input module for PLC logic modules (Generation 2 only), 1-channel, signal type (4 mA ... 20 mA, 0 mA ... 20 mA, 0 V ... 10 V, 2 V ... 10 V) can be configured via DIP switch, Push-in connection  | 2906917            |
|                                                                                   | Pt 100/Pt 1000 temperature measuring transducer for PLC logic modules (Generation 2 only), 1-channel, signal type (Pt 100, Pt 1000) can be configured via DIP switch, Push-in connection                 | 2906919            |
|                                                                                   | Analog output module for PLC logic modules (Generation 2 only), 1-channel, signal type (4 mA ... 20 mA, 0 mA ... 20 mA, 0 V ... 10 V, 2 V ... 10 V) can be configured via DIP switch, Push-in connection | 2906921            |

### Basic touch panel

|                                                                                    | Description                                                                                                                                                                                                                                                                                                                     | Type                   | Item no. |
|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------|
|    | Touch panel with 10.92 cm / 4.3" TFT display (analog-resistive), 480 x 272 pixels (WQVGA), 16.7 million colors, Arm® Cortex®-A7, 528 MHz i.MX6 UL, 2x COM (RS-232/422/485), 1x USB 2.0, type A, 1x USB 2.0, type B, 1x Ethernet (10/100 Mbps), RJ45, Windows® Embedded Compact 7 and user software: Visu+. (Bus system: none)   | BTP 2043W              | 1050387  |
|   | Touch panel with 17.8 cm / 7" TFT active display (analog-resistive) 800 x 480 pixels (WVGA), 16.7 million colors, Arm® Cortex®-A7, 528 MHz i.MX6 UL, 2x COM (RS-232/422/485), 1x USB 2.0, type A, 1x USB 2.0, type B, 1x Ethernet (10/100 Mbps), RJ45, Windows® Embedded Compact 7 and user software: Visu+. (Bus system: none) | BTP 2070W              | 1046666  |
|  | Touch panel with 25.7 cm / 10.1" TFT display (analog-resistive) 1024 x 600 pixels (WSVGA), 16.7 million colors, Arm® Cortex®-A7, 528 MHz i.MX6 UL, 2x COM (RS-232/422/485), 1x USB 2.0, type A, 1x USB 2.0, type B, 1x Ethernet (10/100 Mbps), RJ45, Windows® Embedded Compact 7 and user software: Visu+. (Bus system: none)   | BTP 2102W              | 1046667  |
|  | Data cable for RS-232 communication between the PLC logic modules and the BTP 2000 device series touch panels. Cable length: 2 m                                                                                                                                                                                                | IFS-V8C-RS232-DATCABLE | 1076342  |

## Timer relays

3

### Simple time control applications, narrow and precise

Timer relays are particularly suitable for controlling simple time sequences. The 6 mm timer relays with just one adjustable time and one fixed function are particularly space saving. Use the compact timer relays in installation housing for building installation and the series production of machines and systems. Our multifunctional relays offer selectable time ranges and functions.

#### Compact timer relays PLC-TR and ETD-BL

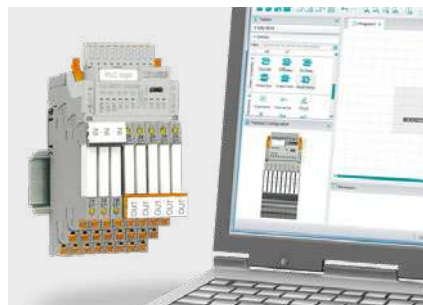
The 6 mm timer relays are the space-saving, cost-effective solution for simple time control applications. The compact timer relays in compact installation housing are particularly suitable for use in building installation and the series production of machines and systems.

➤ More information starting on page 50.



*The universal industrial relay system with multifunctional timer module.*

➤ More information starting on page 7



*The programmable logic relay system combines relay and analog modules with logic and time functions and intuitive software.*

➤ More information starting on page 42



### Smart timer relays MACX-TR

Smart and versatile: multifunctional timer relays with OLED display and optional NFC communication, plus a smartphone app.

➤ More information starting on page 52.

## Compact timer relays

### Space-saving for simple time control applications

When it comes to controlling simple time sequences, timer relays are the cost-effective alternative to a PLC. Our timer relays enable you to easily and inexpensively implement time control applications ranging from a few milliseconds to several days. Benefit from convenient device setup via the operating elements on the front of the housing. Floating PDT outputs ensure fast error indication and selective shutdown. Select the appropriate timer relay for your application from four product families.



## Your advantages



### Fast wiring

Wiring is quick, easy, and tool-free with Push-in connection technology.



### Easy handling

The time is set conveniently with an illuminated thumbwheel or with decoder switches on the front of the housing

### ETD-BL compact timer relays

The compact timer relays are particularly suitable for use in building installation applications and the series production of machines and systems.

#### Your advantages:

- ✓ Space savings with the compact installation design, even in mobile and distributed system components
- ✓ Quick and tool-free wiring with Push-in Technology
- ✓ Clear diagnostics with clearly visible status LEDs



### Ultra-narrow PLC-TR timer relays

The narrow timer relays are the space-saving solution for simple time control applications. Choose between versions with an adjustable time and a predefined function or multifunctional products with four adjustable time ranges and selectable functions.

#### Your advantages:

- ✓ Narrow overall width of just 6.2 mm saves space
- ✓ Precise and convenient time setting using the illuminated thumbwheel
- ✓ Convenient and flexible setting of the multifunctional timer relays via DIP switches on the side panel
- ✓ Clear diagnostics with clearly visible status LEDs
- ✓ Fast installation with the use of plug-in bridges and system cabling



## Smart timer relays

### Time functions at a glance

The new intelligent MACX-TR timer relays are multifunctional timer relays with an OLED display and pushbuttons. You will benefit from both the intuitive handling and the precise time function setting options. You can adjust the time parameters either via an app on your smartphone or directly on the device – the choice is yours.

#### OLED display

With countdown display for monitoring the module status

#### PIN coding

For protection against unauthorized changes

#### Guided configuration

Via the device buttons or via app

#### Rapid selection of the time functions

With function diagrams on the clearly readable OLED screen or via smartphone app

#### Precise time settings

Without checking or calculating potentiometer settings

#### Error-free configuration

Error-free and rapid transmission of existing and stored configurations via smartphone using NFC communication



# Easy handling in detail



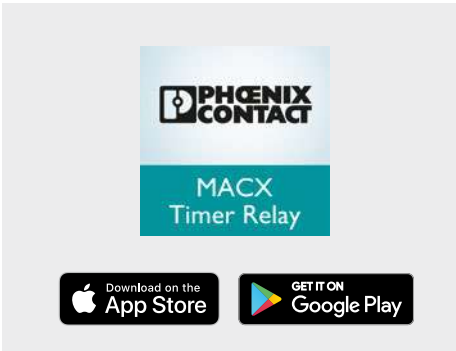
## Easy and precise setup

The combination of the easily readable OLED screen and pushbuttons enables easy handling directly on the device. Using the intuitive menu guide, you can select the necessary time functions and enter the precise time values at the touch of a button.



## Smart configuration

The smartphone app provides you with further options. Via NFC connection, you can read out and adjust the current settings, and even transfer them to other timer relays. An optional PIN code provides protection against unauthorized access.

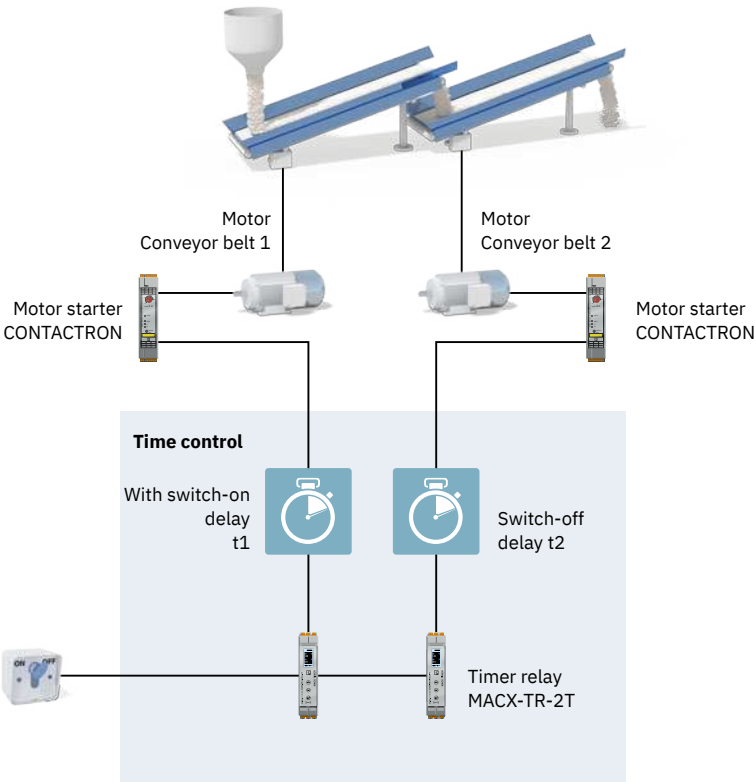


## Smartphone app

In addition to the intelligent configuration options, the MACX-TR app provides you with access to additional device information and timer relay data sheets at any time. The free app is available in the respective stores for iOS and Android users.

## Application example: Conveying technology

Timer relays are used to protect the supply network against overloads and to avoid peak loads. To achieve this, the drive motors are switched on with a time delay. When starting the system up, motor 2 is started first and then, after a short time interval, motor 1 is also started. This sequence also prevents conveyor belt 2 from being overfilled during the system start-up if conveyor belt 1 is already loaded. The stopping process is performed in the reverse time delay sequence. This also ensures that the conveyor belts are completely emptied.



# Product overview of timer relays

| Timer relays                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                                                          | Industrial housings                                                               |                                                                                   |                                                                                   | Compact housings                                                                    |                                                                                     | Narrow housings                                                                     |
|                                                                          |  |  |  |  |  |  |
| Width                                                                    | 22.5                                                                              |                                                                                   |                                                                                   | 17.5                                                                                |                                                                                     | 6.2                                                                                 |
| Functions                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| E: switch on delay                                                       | •                                                                                 |                                                                                   |                                                                                   | •                                                                                   |                                                                                     | •                                                                                   |
| Es: switch-on delay with control contact                                 | •                                                                                 |                                                                                   |                                                                                   | •                                                                                   |                                                                                     | •                                                                                   |
| Rs: response delay with control contact                                  | •                                                                                 |                                                                                   |                                                                                   | •                                                                                   |                                                                                     | •                                                                                   |
| Wu: passing make contact, voltage-controlled                             | •                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Ws: passing make contact with control contact                            | •                                                                                 |                                                                                   |                                                                                   | •                                                                                   |                                                                                     |                                                                                     |
| Bi: flashing beginning with pulse                                        | •                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     | •                                                                                   |
| Ip: switched-mode beginning with pause                                   | •                                                                                 | •                                                                                 |                                                                                   |                                                                                     | •                                                                                   |                                                                                     |
| Ii: switched-mode beginning with pulse                                   | •                                                                                 | •                                                                                 |                                                                                   |                                                                                     | •                                                                                   |                                                                                     |
| ER: with switch-on delay and off-delay, with control contact             |                                                                                   | •                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| EWu: with switch-on delay and passing make contact, voltage-controlled   |                                                                                   | •                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| EWs: with switch-on delay and passing make contact, with control contact |                                                                                   | •                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Wt: pulse sequence evaluation (retriggerable off-delay)                  |                                                                                   | •                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| YΔ: star-delta start                                                     |                                                                                   | •                                                                                 |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| POFF: switch-off delay                                                   |                                                                                   |                                                                                   | •                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Setting range time                                                       | 10 ms ... 59999 min.<br>10 ms ... 999 h 59 min.                                   |                                                                                   | 10 ms ... 10 min.                                                                 | 50 ms ... 1 h<br>5 time end ranges                                                  | 50 ms ... 100 h<br>7 time end ranges                                                | 0.1 s ... 300 min.<br>4 time end ranges                                             |
| Contact switching type                                                   | 2 floating changeover contacts                                                    |                                                                                   |                                                                                   | 1 floating changeover contact                                                       |                                                                                     |                                                                                     |
| Push-in connection                                                       | 1096431                                                                           | 1103355                                                                           | 1119399                                                                           | 2905814                                                                             | 2907714                                                                             | 2910141                                                                             |
| Screw connection                                                         | 1096429                                                                           | 1103345                                                                           | 1119403                                                                           | 2905813                                                                             | 2907713                                                                             | 2910140                                                                             |

# Timer relay application example

1

2

3

4

Timer relays

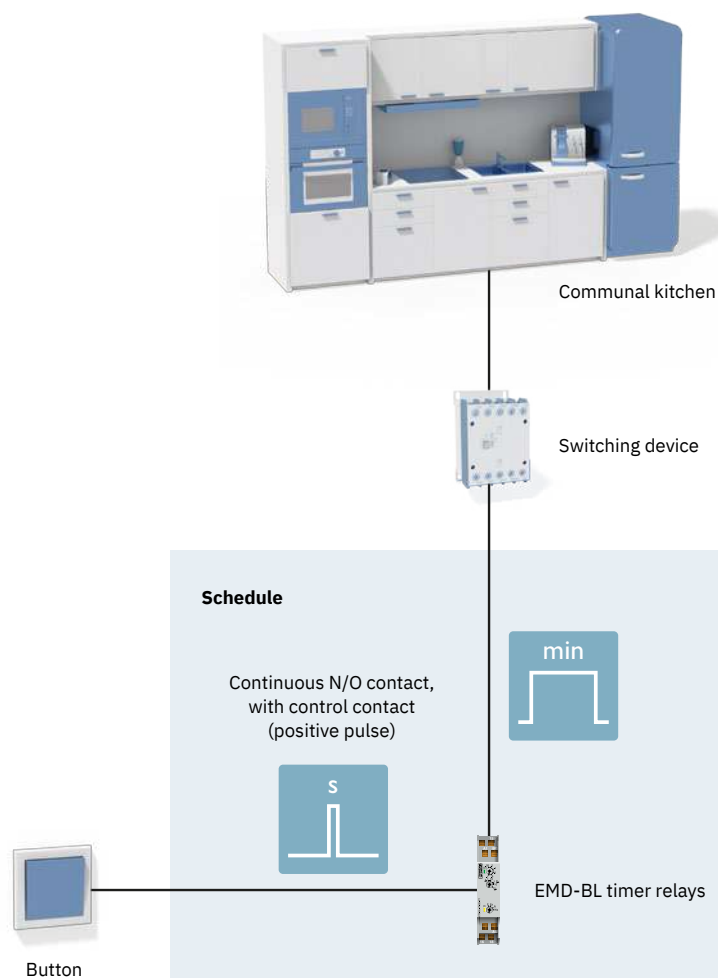
## Time function in a communal kitchen

### Time function

- With passing make contact, with control contact

### Application requirements

- Switching on the stovetop with a button
- Stovetop must be turned off after a defined period of time
- Automatic switch-off after the time elapses



## Monitoring relays

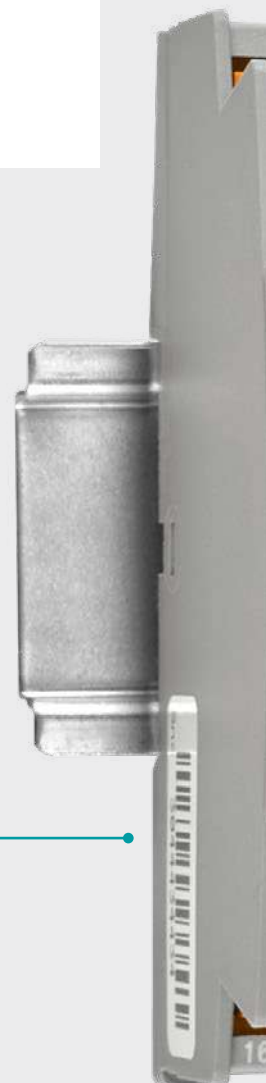
### Increase your system availability

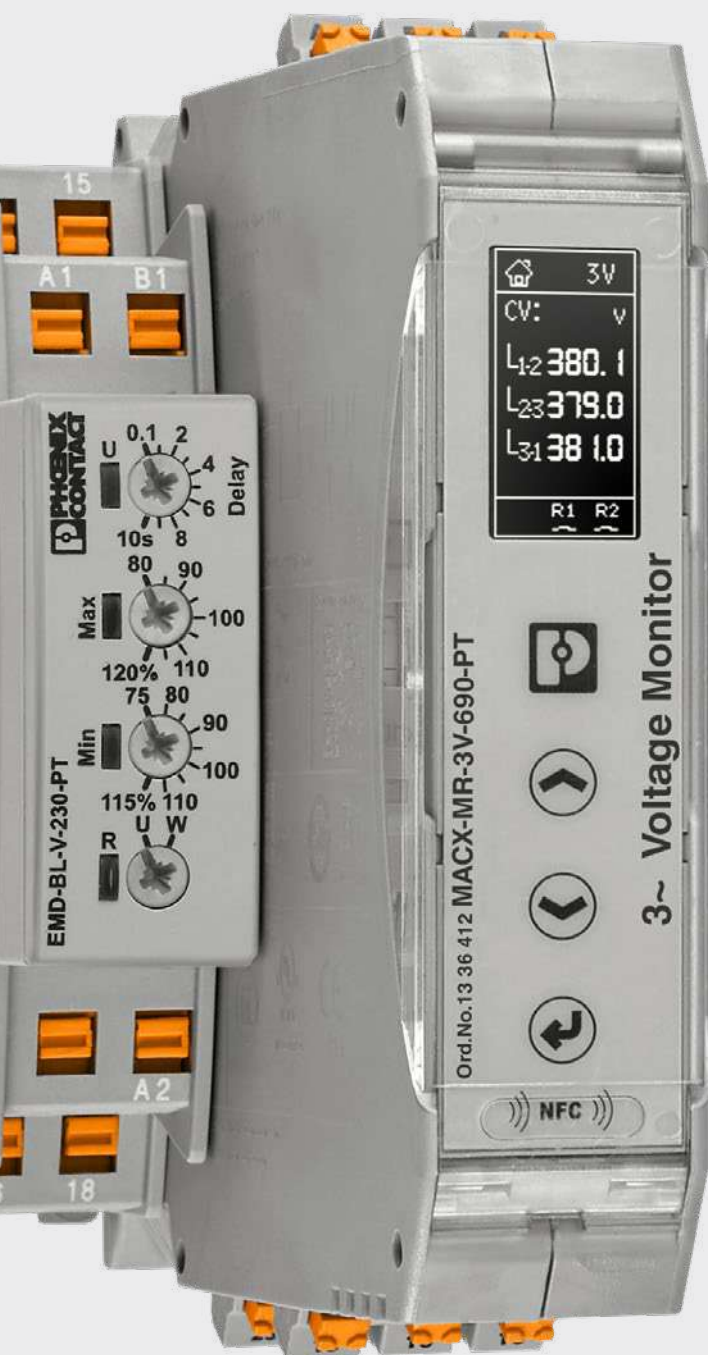
Using our monitoring relays, you can detect errors as soon as they occur. This increases your system availability and avoids expensive downtimes and repairs. Shut down system parts selectively or report an error to a controller as soon as the set limit value is exceeded or not reached. For the monitoring solution that's right for you, Phoenix Contact offers two device families.

#### Compact monitoring relays EMD-BL

The compact EMD-BL monitoring relays are ideal for simple monitoring tasks, especially in building installation and series production.

➤ More information starting on page 58.





### Smart monitoring relays

The smart MACX-MR monitoring relays provide you with many monitoring functions with extended setting options, large measuring ranges, and a broad supply voltage range.

➤ More information starting on page 60.

## Compact monitoring relays

### For simple monitoring tasks

The compact EMD-BL monitoring relays are ideal for simple monitoring tasks, and are suitable both for use in building installation and in the series production of machines and systems. The devices monitor current, voltage, and phase parameters efficiently and reliably. With Push-in Technology, they can be connected to the modules quickly, directly, and without tools.



### Your advantages

- ✓ Space saving with the compact installation housing
- ✓ Easy handling – parameters can be conveniently set using rotary switches on the front of the housing
- ✓ Clear diagnostics with status LED
- ✓ Ideal for series production – reasonably-priced solution for numerous monitoring functions
- ✓ Quick installation of the module versions with supply from the measuring circuit

## Your advantages in detail



### Compact and cost-effective

With the compact installation design, EMD-BL devices are ideal for building installation and series production.



### Quick and easy wiring

Benefit from the advantages of Push-in direct connection technology: insertion forces reduced by up to 50% and tool-free wiring.



### Easy handling

Desired parameters can be set conveniently via the rotary switch on the front of the housing.

1

2

3

4

Monitoring relays

## Application examples

### Current monitoring

With undercurrent monitoring, you can monitor electrical loads for functionality and wire breaks. Overcurrent monitoring enables you to prevent overload situations or blockages.

- Current consumption of motors
- Monitoring lighting systems, ventilation systems, and heating circuits
- Overload situations for lifting and transport equipment
- Monitoring electromechanical braking equipment

### Voltage monitoring

Protect machines and systems from harmful effects that could cause overvoltages or undervoltages.

- Undervoltage monitoring for batteries
- Speed monitoring for DC motors
- Limit value monitoring for machines and systems
- Power supply monitoring for machines and systems
- Protection against damage to loads due to unstable power supply networks

### Phase monitoring

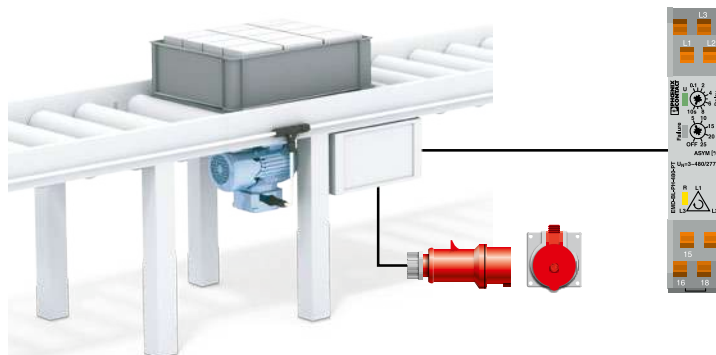
In three-phase mains supplies, all phase sequences such as phase failure, phase sequence, and asymmetry should be monitored.

- Phase failure monitoring: motor protection in 3-phase grids
- Phase sequence monitoring: direction of rotation detection for conveyor belt drives
- Protection against motor damage in the event of phase asymmetry or phase failure

### Temperature monitoring

When monitoring motor winding temperatures, temperature-dependent resistors detect motor heating and activate the relay to signal it.

- Monitoring the motor winding temperature of conveyor belt drives
- Protect motors from thermal and mechanical overloads, for example, through insufficient cooling, difficult start-up, and underdimensioning



Phase monitoring in conveyor drives

## Smart monitoring relays

### Precise measurement and reporting

With the smart MACX-MR monitoring relays, you can keep a constant eye on important electrical and physical plant parameters. Benefit from intuitive operation via the buttons and OLED display or via NFC with the smartphone app. The precise setting and display of the values as well as error recording help you to detect even small deviations at an early stage and to fix the causes of the errors.

#### Easy-to-read OLED display

For guided configuration for users and display of the current values on site

#### PIN code

For protection against unauthorized changes

#### Extended measuring ranges

And high measuring accuracy thanks to true-RMS measurement

#### Smart configuration

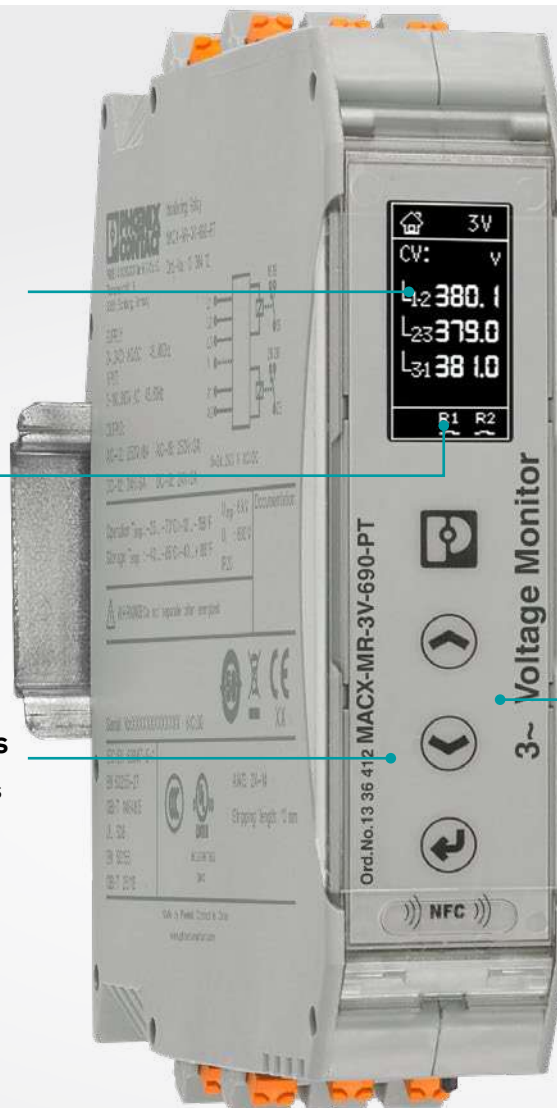
Guided settings for users and simple transmission of stored configurations via smartphone using NFC communication

#### Precise limit value setting

Without checking or calculating potentiometer settings

#### Broad supply voltage range

Electrically isolated from the measuring circuit



#### COMPLETE line

The new standard for the control cabinet.

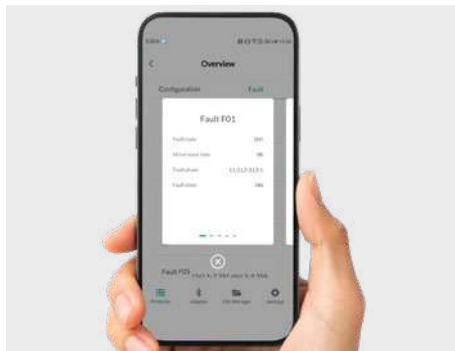
➤ More information starting on page 6

## Simple advantages in detail



### Intuitive operation

Perform exact device configuration via the intuitive menu navigation without having to perform long tests and calculations: either on the device via the easy-to-read OLED display and pushbuttons or via the smartphone app with extended functions.



### Troubleshooting

With the continuous and precise monitoring of the selected system parameters, you can keep an eye on even small deviations from normal operation and take countermeasures in good time.



### Versatile, safe, accurate

The extended setting options, large measuring ranges, and a broad supply voltage range make the MACX-MR monitoring relays particularly versatile. The electrical isolation of the measuring and supply circuit guarantees you high safety and accuracy.

## The MACX-MR smartphone app

Benefit from the numerous options of the smartphone app.

The MACX-MR app offers you additional options, such as reading out and transferring settings to other monitoring relays. At the same time, you always have access to additional device information, such as the data sheets.

The app provides a function diagram and a description, as well as a reminder in case of setting errors, which makes the setting even more intuitive.

The MACX-MR app is used to perform an accurate parameter configuration. Batch downloading of parameters to the device makes setting more efficient.

The recording of the error code, error value, value deviation, and error time helps you to quickly analyze and fix the cause. The error output contacts can be configured to distinguish between different errors.

Password protection provides protection against unauthorized changes to the device configuration.



# Product overview of monitoring relays

| Voltage monitoring, 3-phase |                                                                                     |                                                                                       |                                                                                     |
|-----------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                             | Industrial housings                                                                 |                                                                                       |                                                                                     |
|                             |    |     |  |
| Width                       | 22.5                                                                                |                                                                                       | 45                                                                                  |
| Functions                   |                                                                                     |                                                                                       |                                                                                     |
| Phase sequence              | •                                                                                   | •                                                                                     | •                                                                                   |
| Phase failure               | •                                                                                   | •                                                                                     | •                                                                                   |
| Asymmetry                   | •                                                                                   | •                                                                                     | •                                                                                   |
| Window                      | •                                                                                   |                                                                                       | •                                                                                   |
| Undervoltage                | •                                                                                   |                                                                                       | •                                                                                   |
| Overvoltage                 | •                                                                                   |                                                                                       | •                                                                                   |
| Input voltage range         | 160 V ... 690 V                                                                     |                                                                                       | 480 V ... 900 V                                                                     |
| Supply voltage              | 24 V AC ... 240 V AC -15% ... +10%<br>24 V DC ... 240 V DC -25% ... +30%            | 24 V DC ... 240 V DC -25% ... +30%                                                    | 24 V AC ... 240 V AC -15% ... +10%<br>24 V DC ... 240 V DC -25% ... +30%            |
| Contact switching type      | 2 floating changeover contacts                                                      |                                                                                       |                                                                                     |
| Push-in connection          | <a href="#">1336412</a>                                                             | <a href="#">1336408</a>                                                               | <a href="#">1336547</a>                                                             |
| Screw connection            | <a href="#">1336410</a>                                                             | <a href="#">1336404</a>                                                               |                                                                                     |
|                             | Compact housings                                                                    |                                                                                       |                                                                                     |
|                             |  |  |                                                                                     |
| Width                       | 17.5                                                                                |                                                                                       |                                                                                     |
| Functions                   |                                                                                     |                                                                                       |                                                                                     |
| Phase sequence              | •                                                                                   | •                                                                                     |                                                                                     |
| Phase failure               | •                                                                                   |                                                                                       |                                                                                     |
| Asymmetry                   | •                                                                                   |                                                                                       |                                                                                     |
| Window                      |                                                                                     | •                                                                                     |                                                                                     |
| Input voltage range         | 187 V AC ... 519 V AC                                                               |                                                                                       | 280 V AC ... 519 V AC                                                               |
| Supply voltage              | ±10% (= measuring voltage)                                                          |                                                                                       | ±30% (= measuring voltage)                                                          |
| Contact switching type      | 1 floating changeover contact                                                       |                                                                                       |                                                                                     |
| Push-in connection          | <a href="#">2903528</a>                                                             |                                                                                       | <a href="#">2903526</a>                                                             |
| Screw connection            | <a href="#">2903527</a>                                                             |                                                                                       | <a href="#">2903525</a>                                                             |

# Product overview of monitoring relays

| Voltage monitoring, 1-phase |                                                                                   |                                                                                     |
|-----------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                             | Industrial housings                                                               | Compact housings                                                                    |
|                             |  |  |
| Width                       | 22.5                                                                              | 17.5                                                                                |
| <b>Functions</b>            |                                                                                   |                                                                                     |
| Window                      | •                                                                                 | •                                                                                   |
| Undervoltage                | •                                                                                 | •                                                                                   |
| Overvoltage                 | •                                                                                 |                                                                                     |
| Input voltage range         | 0 V AC/DC ... 600 V AC/DC                                                         | 0 V DC ... 24 V DC<br>0 V AC ... 24 V AC<br>0 V AC ... 230 V AC                     |
| Supply voltage              | 24 V AC ... 240 V AC -15% ... +10%<br>24 V DC ... 240 V DC -25% ... +30%          | -25% ... +20% (= measuring voltage)                                                 |
| Contact switching type      | 2 floating changeover contacts                                                    | 1 floating changeover contact                                                       |
| Push-in connection          | <a href="#">1336507</a>                                                           | <a href="#">2903524</a>                                                             |
| Screw connection            | <a href="#">1336426</a>                                                           | <a href="#">2903523</a>                                                             |

# Product overview of monitoring relays

| Current monitoring     |                                                                                   |                                                                                     |
|------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                        | Industrial housings                                                               | Compact housings                                                                    |
|                        |  |  |
| Width                  | 22.5                                                                              | 17.5                                                                                |
| Functions              |                                                                                   |                                                                                     |
| Window                 | •                                                                                 | •                                                                                   |
| Undercurrent           | •                                                                                 | •                                                                                   |
| Overcurrent            | •                                                                                 | •                                                                                   |
| Input current range    | 0 A AC/DC ... 10 A AC/DC                                                          | 0 A ... 5 A<br>0 A ... 10 A                                                         |
| Supply voltage         | 24 V ... 240 V AC -15% ... +10%<br>24 V ... 240 V DC -25% ... +30%                | 195.5 V AC ... 264.5 V AC                                                           |
| Contact switching type | 2 floating changeover contacts                                                    | 1 floating changeover contact                                                       |
| Push-in connection     | <a href="#">1336512</a>                                                           | <a href="#">2903522</a>                                                             |
| Screw connection       | <a href="#">1336510</a>                                                           | <a href="#">2903521</a>                                                             |

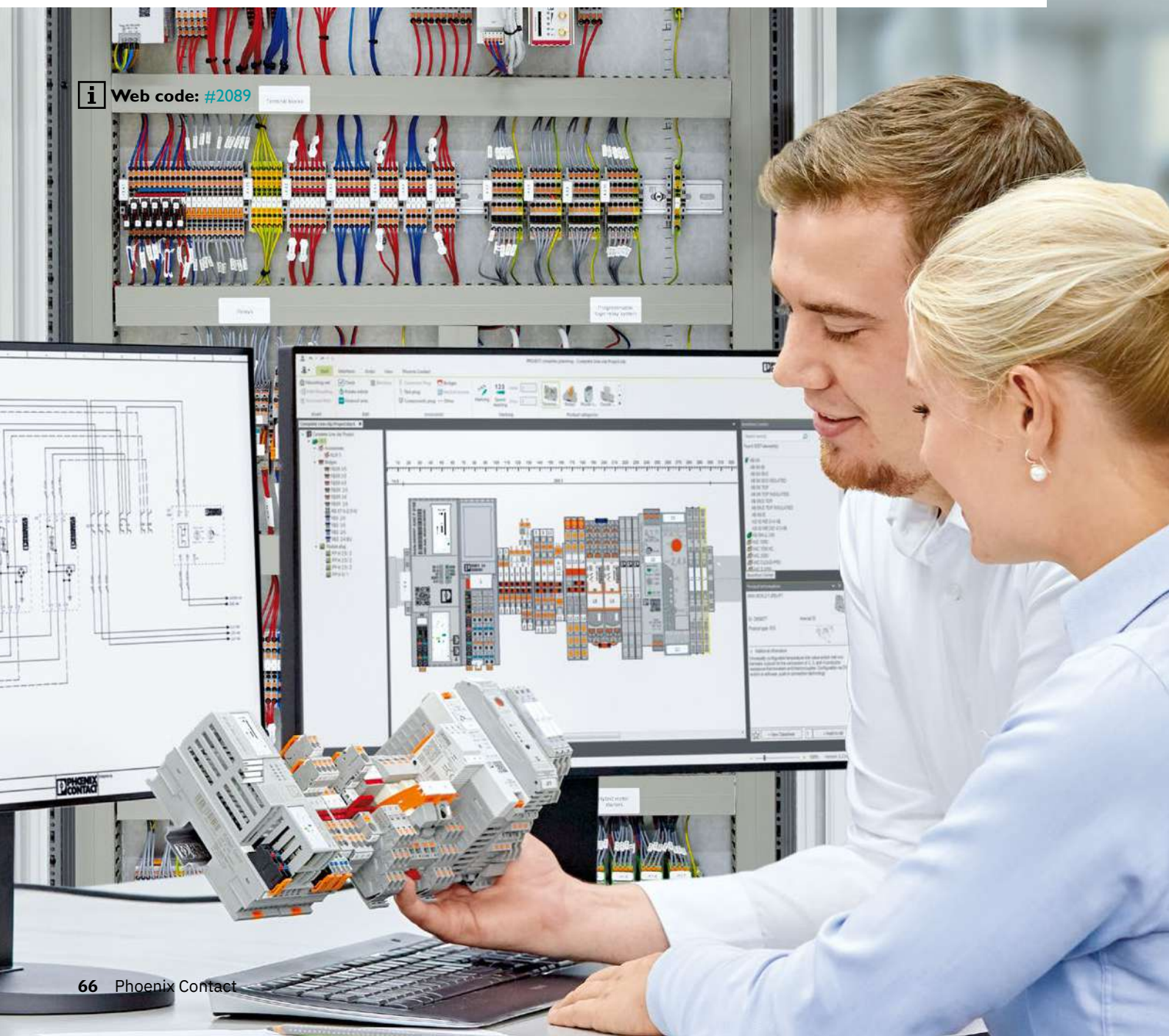
Product overview of monitoring relays

| Temperature monitoring of the motor windings |                                                                                   |                                                                                     |
|----------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                              | Industrial housings                                                               | Compact housings                                                                    |
|                                              |  |  |
| Width                                        | 22.5                                                                              | 17.5                                                                                |
| Functions                                    | Winding temperature monitoring                                                    | Winding temperature monitoring                                                      |
| Number of PTC sensors                        | 6 (2 x 3 PTCs)                                                                    | 6 (1 x 6 PTCs)                                                                      |
| Reset mode                                   |                                                                                   |                                                                                     |
| – Manual                                     | •                                                                                 |                                                                                     |
| – Remote                                     | •                                                                                 |                                                                                     |
| – Automatic                                  | •                                                                                 | •                                                                                   |
| Test button                                  | Yes                                                                               | No                                                                                  |
| Supply voltage                               | 24 V AC ... 240 V AC -15% ... +10%<br>24 V DC ... 240 V DC -25% ... +30%          | 195.5 V AC ... 253 V AC                                                             |
| Contact switching type                       | 2 floating changeover contacts                                                    | 1 floating changeover contact                                                       |
| Push-in connection                           | <a href="#">1336527</a>                                                           | <a href="#">2906253</a>                                                             |
| Screw connection                             | <a href="#">1336523</a>                                                           | <a href="#">2906252</a>                                                             |

# COMPLETE line

## The comprehensive solution for the control cabinet

COMPLETE line is a system comprising technologically leading and coordinated hardware and software products, consulting services, and system solutions that help you optimize your processes in control cabinet building. Engineering, purchasing, installation, and operation become significantly easier for you.



## Your advantages in detail:



### Comprehensive product portfolio

With COMPLETE line, we offer a complete product portfolio of technologically leading products. This includes the following:

- Controllers and I/O modules
- Power supplies and device circuit breakers
- Terminal blocks and distribution blocks
- Relay modules and motor starters
- Signal conditioners
- Safety technology
- Surge protection
- Heavy-duty connectors



### Intuitive handling

Thanks to the simple, intuitive handling of the coordinated hardware products you will save time regarding assembly, startup, and maintenance. Push-in connection technology enables you to wire applications quickly – completely tool-free. The broad, technologically leading product portfolio will always provide you with the right product for standard or special applications.



### Save time throughout the entire engineering process

PROJECT complete planning and marking software supports the entire process of control cabinet building. The program features an intuitive user interface that enables the individual planning, automatic checking, and direct ordering of terminal strips.



### Reduced logistics costs

Reduced variety of parts with standardized marking, bridging, and testing accessories. The COMPLETE line system coordinates products, design, and accessories so that you benefit from maximum reusability and thus reduce your logistics costs.



### Optimized processes in control cabinet building

COMPLETE line supports you, from engineering through to manufacturing, in designing your control cabinet production as efficient as possible. Thus, your customized concept for optimizing your processes in control cabinet building is created. Our terminal strip production helps you to flexibly manage order peaks or to supply your control cabinet production with fully assembled DIN rails just in time.

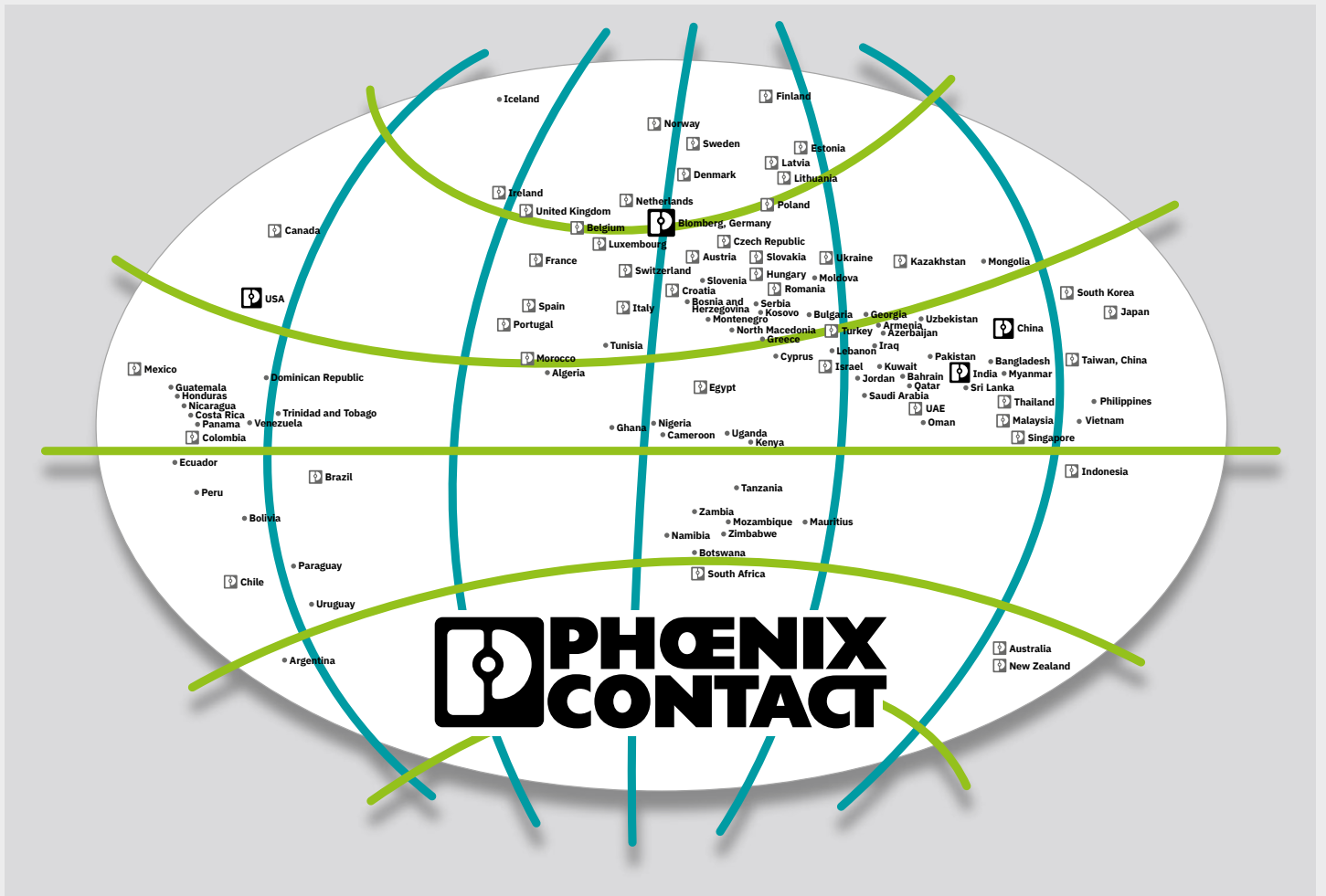


### The new standard for the control cabinet

Discover the extensive COMPLETE line product portfolio and find out more about COMPLETE line and your comprehensive solutions for the control cabinet.

Visit our website:

**[phoenixcontact.com/completeline](https://phoenixcontact.com/completeline)**



## Open communication with customers and partners worldwide

Phoenix Contact is a global market leader based in Germany. We are known for producing future-oriented products and solutions for the electrification, networking, and automation of all sectors of the economy and infrastructure. With a global network reaching across more than 100 countries with over 21,000 employees, we maintain close relationships with our customers, something we believe is essential for our common success.

Our wide range of innovative products makes it easy for our customers to implement the latest technology in a variety of applications and industries. This especially applies to the target markets of energy, infrastructure, industry, and mobility.

You can find your local partner at  
[phoenixcontact.com](https://phoenixcontact.com)

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