

# RAD-DOR4-IFS - I/O extension module



2901536  
<https://www.phoenixcontact.com/au/products/2901536>

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Radioline - I/O extension module, 4 digital relay outputs (5 A, 250 V AC/DC)

## Your advantages

- Easy startup via thumbwheel
- Channel-to-channel electrical isolation
- Extended temperature range of -40 °C ... +70 °C
- Easy module replacement even during operation (hot swap)
- Digital wide range outputs (0 ... 250 V AC/DC)
- Approved for use in zone 2

## Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 2901536             |
| Packing unit                         | 1 pc                |
| Minimum order quantity               | 1 pc                |
| Sales key                            | DNC61D              |
| Product key                          | DNC61D              |
| Catalog page                         | Page 381 (C-6-2019) |
| GTIN                                 | 4046356610483       |
| Weight per piece (including packing) | 180 g               |
| Weight per piece (excluding packing) | 123.91 g            |
| Customs tariff number                | 85177900            |
| Country of origin                    | DE                  |

# RAD-DOR4-IFS - I/O extension module



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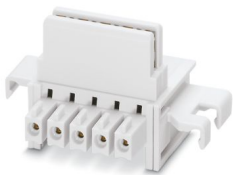
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## Set consists of

ME 17,5 TBUS 1,5/ 5-ST-3,81 KMGY - DIN rail bus connector

2713645

<https://www.phoenixcontact.com/au/products/2713645>



DIN rail bus connector, color: light gray, nominal current: 8 A (parallel contacts), rated voltage (III/2): 125 V, number of positions: 5, product range: TBUS5-17,5..., pitch: 3.81 mm, mounting: DIN rail mounting, locking: without, mounting method: without, type of packaging: packed in cardboard, Item with gold-plated contacts, bus connectors for connecting with electronics housings, 5 parallel contacts

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## Technical data

### Notes

#### Note on application

|                     |                         |
|---------------------|-------------------------|
| Note on application | Only for industrial use |
|---------------------|-------------------------|

### Product properties

|              |                                                                         |
|--------------|-------------------------------------------------------------------------|
| Product type | Extension module                                                        |
| MTTF         | 1087 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)   |
|              | 523 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%) |
|              | 204 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)   |

#### Insulation characteristics

|                      |    |
|----------------------|----|
| Overvoltage category | II |
| Degree of pollution  | 2  |

### Electrical properties

|                                                 |                                                                                                                                                   |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Electrical isolation                            | 300 V (Rated insulation voltage (in each case between the digital outputs // TBUS supply, reinforced insulation in accordance with EN/IEC 61010)) |
|                                                 | 300 V (Rated insulation voltage (to adjacent devices, basic insulation in accordance with EN/IEC 61010))                                          |
| Test voltage for digital I/Os                   | 2.5 kV AC (50 Hz, 1 min.)                                                                                                                         |
| Maximum power dissipation for nominal condition | 1.32 W                                                                                                                                            |
| Transient surge protection                      | yes                                                                                                                                               |

#### Supply

|                          |                                                  |
|--------------------------|--------------------------------------------------|
| Supply voltage range     | 19.2 V DC ... 30.5 V DC (DIN rail bus connector) |
| Max. current consumption | ≤ 55 mA (At 24 V DC, at 25°C)                    |

### Output data

#### Digital

|                           |                           |
|---------------------------|---------------------------|
| Output name               | Relay output              |
| Number of outputs         | 4                         |
| Contact switching type    | Changeover contact        |
| Contact material          | AgSnO <sub>2</sub>        |
| Maximum switching voltage | 250 V AC/DC               |
| Min. switching current    | ≥ 10 mA                   |
| Max. switching current    | 5 A (250 V AC)            |
|                           | 0.168 A (250 V DC)        |
|                           | 5 A (24 V DC)             |
| Mechanical service life   | 1x 10 <sup>7</sup> cycles |

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|                                                     |                                                          |
|-----------------------------------------------------|----------------------------------------------------------|
| Electrical service life                             | 1x 10 <sup>5</sup> cycles (At 5 A, 250 V AC, ohmic)      |
|                                                     | 2x 10 <sup>5</sup> cycles (At 2 A, 250 V AC, cosφ 0.4)   |
|                                                     | 2x 10 <sup>5</sup> cycles (At 1 A, 24 V DC, L/R = 48 ms) |
| Maximum switching frequency                         | 2 Hz                                                     |
| Switching capacity                                  | 120 W (24 V DC)                                          |
|                                                     | 120 W (30 V DC)                                          |
|                                                     | 20 W (48 V DC)                                           |
|                                                     | 18 W (60 V DC)                                           |
|                                                     | 22 W (110 V DC)                                          |
|                                                     | 40 W (220 V DC)                                          |
|                                                     | 42 W (250 V DC)                                          |
|                                                     | 1250 VA                                                  |
| Behavior of the outputs (adjustable via DIP switch) | Hold / Reset                                             |

## Connection data

|                                       |                                                   |
|---------------------------------------|---------------------------------------------------|
| Tightening torque                     | 0.5 Nm ... 0.6 Nm                                 |
|                                       | 5 lb <sub>F</sub> -in. ... 7 lb <sub>F</sub> -in. |
| Connection method                     | Screw connection                                  |
| Stripping length                      | 7 mm                                              |
| Conductor cross section, rigid min.   | 0.2 mm <sup>2</sup>                               |
| Conductor cross section, rigid max.   | 2.5 mm <sup>2</sup>                               |
| Conductor cross section flexible min. | 0.2 mm <sup>2</sup>                               |
| Conductor cross section flexible max. | 2.5 mm <sup>2</sup>                               |
| Conductor cross section AWG min.      | 24                                                |
| Conductor cross section AWG max.      | 14                                                |

## Signaling

|                |                                    |
|----------------|------------------------------------|
| Status display | LED supply voltage, PWR (green)    |
|                | Green LED (bus communication, DAT) |
|                | LED periphery error, ERR (red)     |
|                | Yellow LED (digital output, DO1)   |
|                | Yellow LED (digital output, DO2)   |
|                | Yellow LED (digital output, DO3)   |
|                | Yellow LED (digital output, DO4)   |

## Dimensions

|                     |  |
|---------------------|--|
| Dimensional drawing |  |
|---------------------|--|

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|        |          |
|--------|----------|
| Width  | 17.5 mm  |
| Height | 113 mm   |
| Depth  | 114.5 mm |

## Material specifications

|                                        |                 |
|----------------------------------------|-----------------|
| Color (Housing)                        | gray (RAL 7042) |
| Material (Housing)                     | PA 6.6-FR       |
| Flammability rating according to UL 94 | V0              |

## Environmental and real-life conditions

### Ambient conditions

|                                          |                                                                                                                                    |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Degree of protection                     | IP20                                                                                                                               |
| Ambient temperature (operation)          | -40 °C ... 70 °C (>55°C derating, see technical documentation)<br>-40 °F ... 158 °F (>131°F derating, see technical documentation) |
| Ambient temperature (storage/transport)  | -40 °C ... 85 °C<br>-40 °F ... 185 °F                                                                                              |
| Altitude                                 | 2000 m                                                                                                                             |
| Permissible humidity (operation)         | 20 % ... 85 %                                                                                                                      |
| Permissible humidity (storage/transport) | 20 % ... 85 %                                                                                                                      |
| Shock                                    | 16g, 11 ms                                                                                                                         |
| Vibration (operation)                    | in accordance with IEC 60068-2-6: 5g, 10 Hz ... 150 Hz                                                                             |

## Approvals

### CE

|             |              |
|-------------|--------------|
| Certificate | CE-compliant |
|-------------|--------------|

### ATEX

|                |                                                                           |
|----------------|---------------------------------------------------------------------------|
| Identification | Ⓔ II 3 G Ex ec nC IIC T4 Gc                                               |
| Certificate    | IBExU 15 ATEX B008 X                                                      |
| Note           | Please follow the special installation instructions in the documentation! |

### IECEX

|                |                    |
|----------------|--------------------|
| Identification | Ex ec nC IIC T4 Gc |
| Certificate    | IECEX IBE 13.0019X |

### EAC Ex

|                |                         |
|----------------|-------------------------|
| Identification | 2Ex nA nC IIC T4 Gc X   |
| Certificate    | RU C-DE.HB49.B.00033/20 |

### UL, USA/Canada

|                |                                                                                 |
|----------------|---------------------------------------------------------------------------------|
| Identification | 508 Listed<br>Class I, Div. 2, Groups A, B, C, D T4A<br>Class I, Zone 2, IIC T4 |
|----------------|---------------------------------------------------------------------------------|

### CCC / China-Ex

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|                |                    |
|----------------|--------------------|
| Identification | Ex ec nC IIC T4 Gc |
| Certificate    | 2022122310115625   |

## KC approval for South Korea

|             |                 |
|-------------|-----------------|
| Certificate | R-R-PCK-2901536 |
|-------------|-----------------|

## Corrosive gas test

|                |                                  |
|----------------|----------------------------------|
| Identification | ISA-S71.04-1985 G3 Harsh Group A |
|----------------|----------------------------------|

## EMC data

|                               |                                           |
|-------------------------------|-------------------------------------------|
| Electromagnetic compatibility | Conformance with EMC Directive 2014/30/EU |
| Noise immunity                | EN 61000-6-2                              |

## Noise emission

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-6-4 |
|-----------------------|--------------|

## Standards and regulations

|                          |                          |
|--------------------------|--------------------------|
| Standard designation     | EMC Directive 2014/30/EU |
| Standards/specifications | EN 61000-6-2             |
| Standard designation     | EMC Directive 2014/30/EU |
| Standards/specifications | EN 61000-6-4             |
| Standard designation     | Ex Directive (ATEX)      |
| Standards/specifications | EN 60079-0               |
| Standard designation     | Ex Directive (ATEX)      |
| Standards/specifications | EN 60079-15              |

## Mounting

|                   |                                                        |
|-------------------|--------------------------------------------------------|
| Mounting type     | DIN rail mounting                                      |
| Assembly note     | on standard DIN rail NS 35 in accordance with EN 60715 |
| Mounting position | any                                                    |

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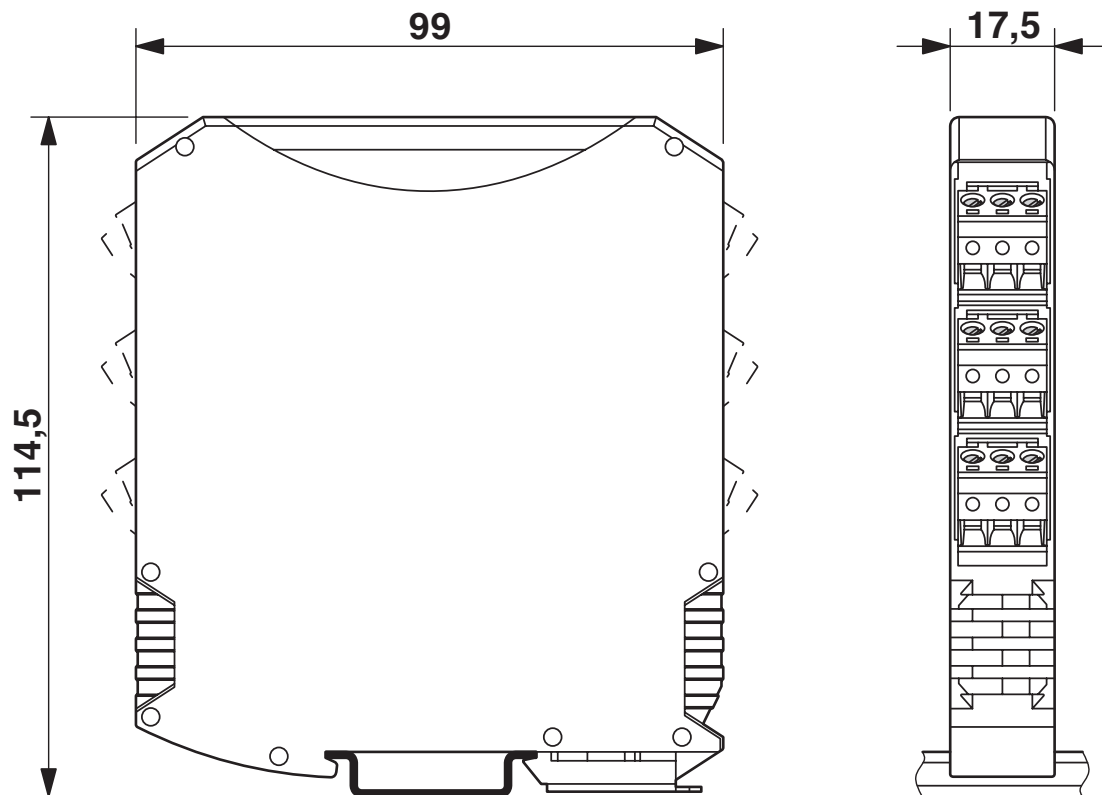
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## Drawings

Dimensional drawing



Slim design

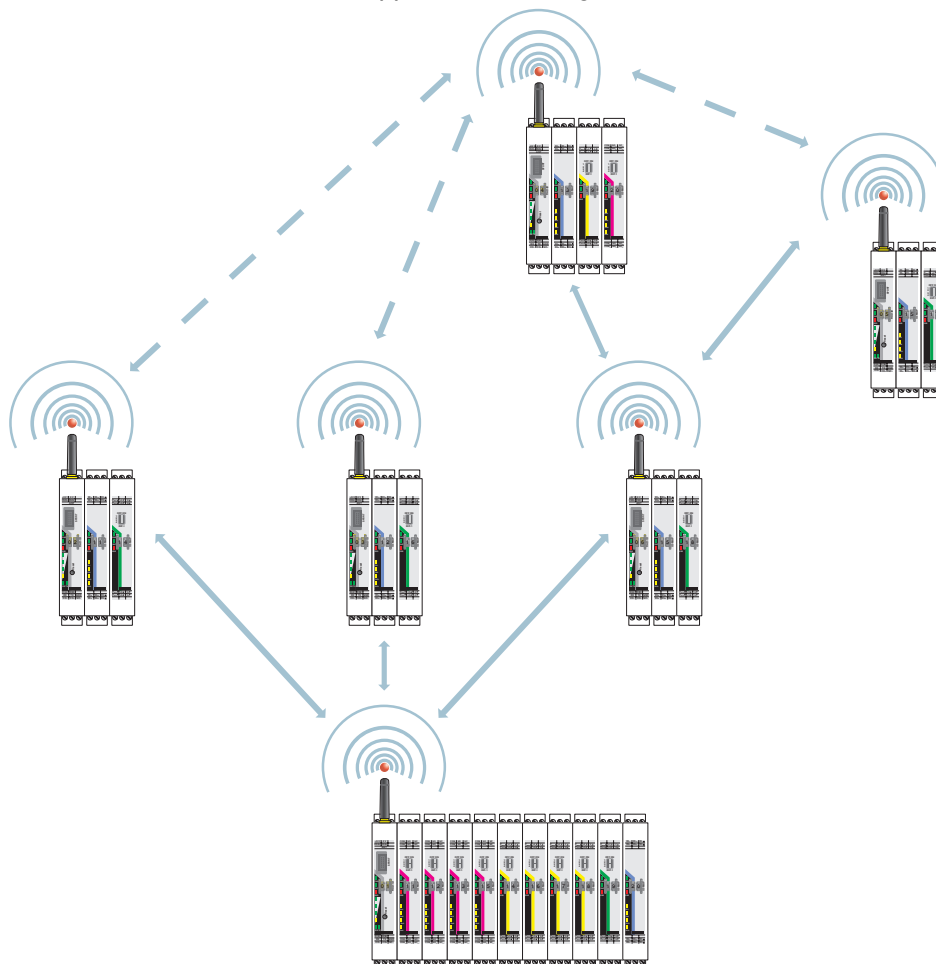
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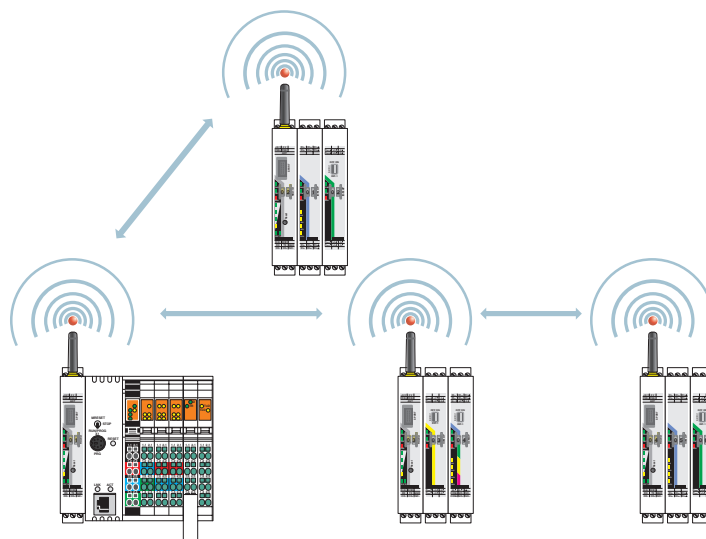


Application drawing



Wireless module in I/O data mode

Application drawing



Wireless module in PLC/Modbus RTU mode



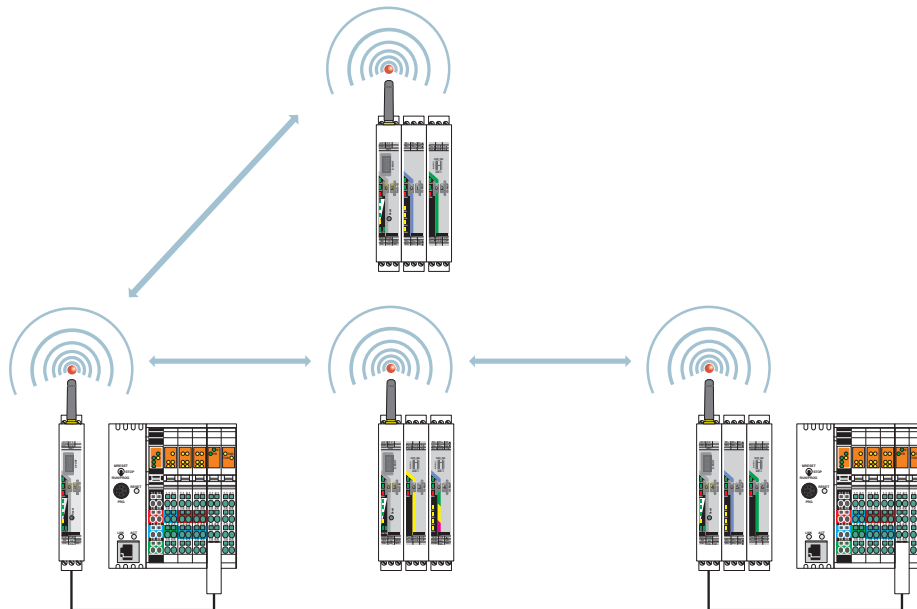
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Application drawing



Wireless module in PLC/Modbus RTU dual mode

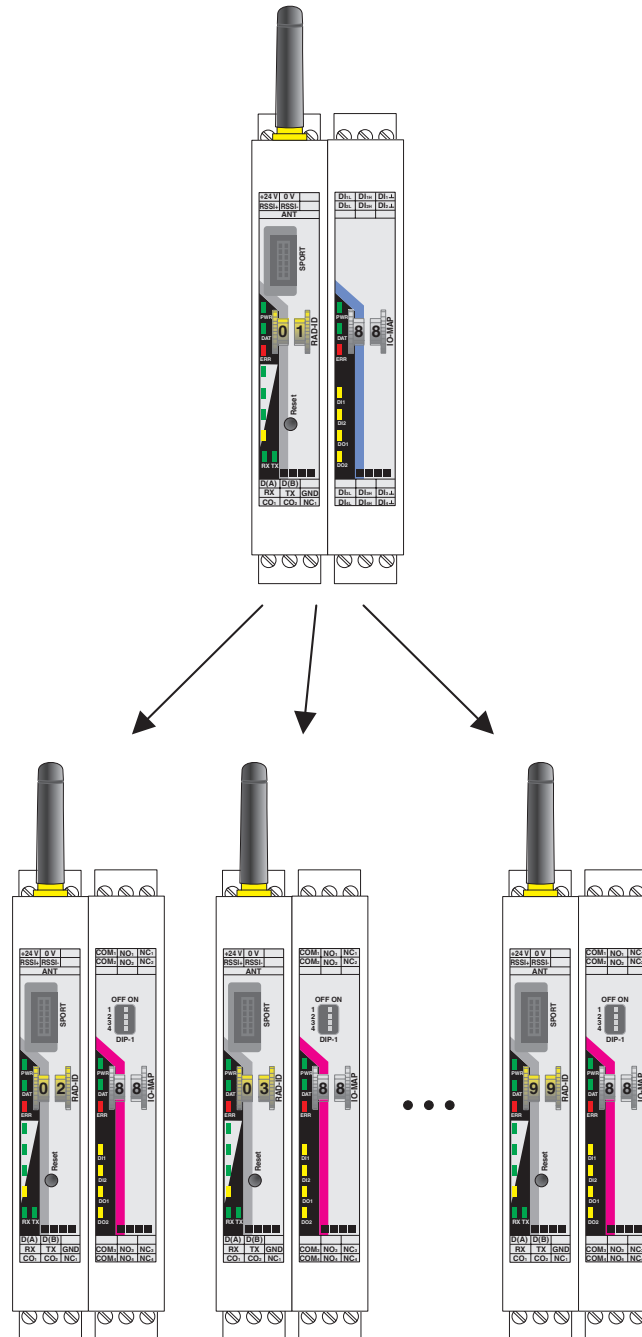
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## Functional drawing



### Assignment of digital inputs and digital outputs

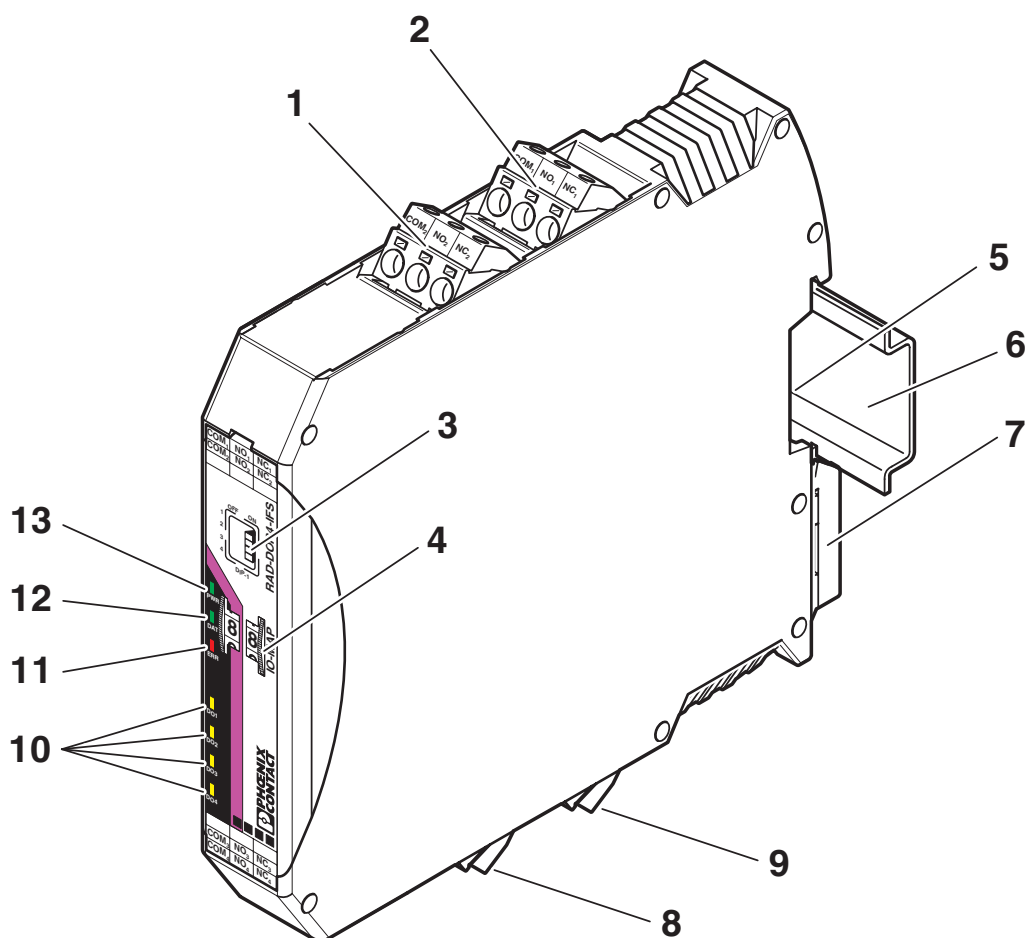
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Schematic diagram



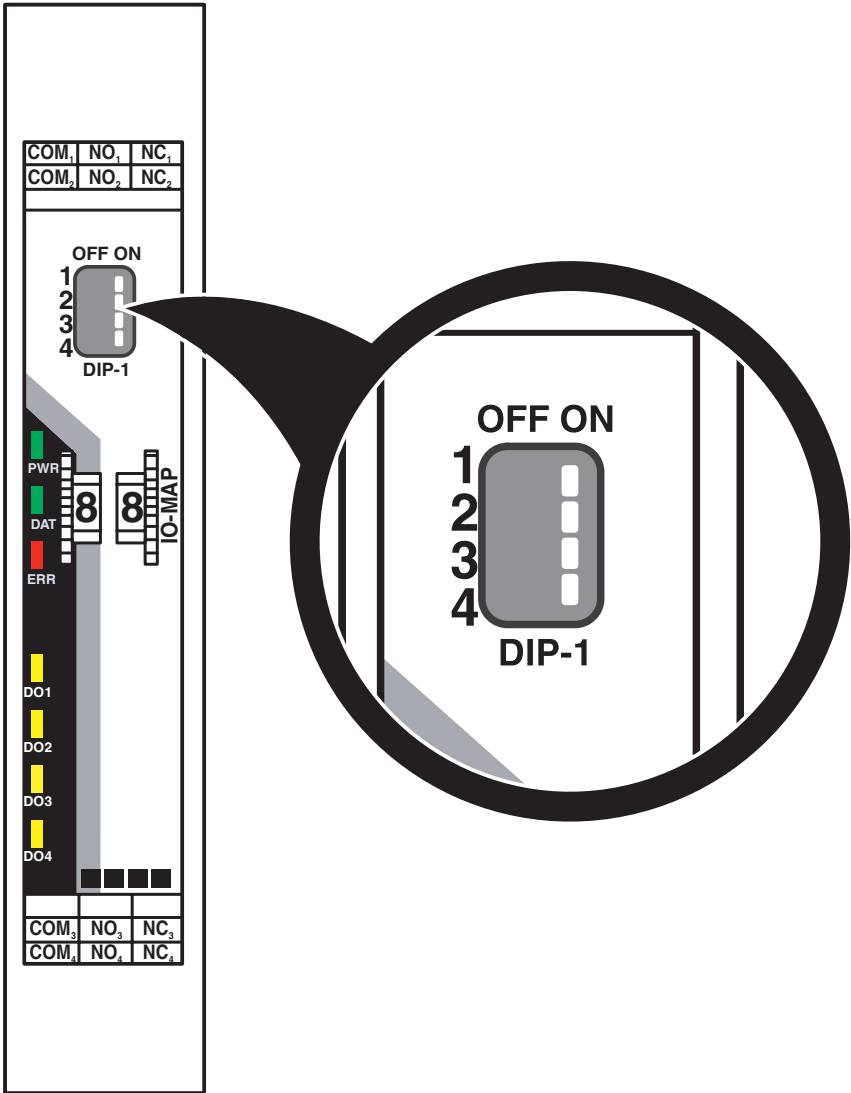
Function elements

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Schematic diagram



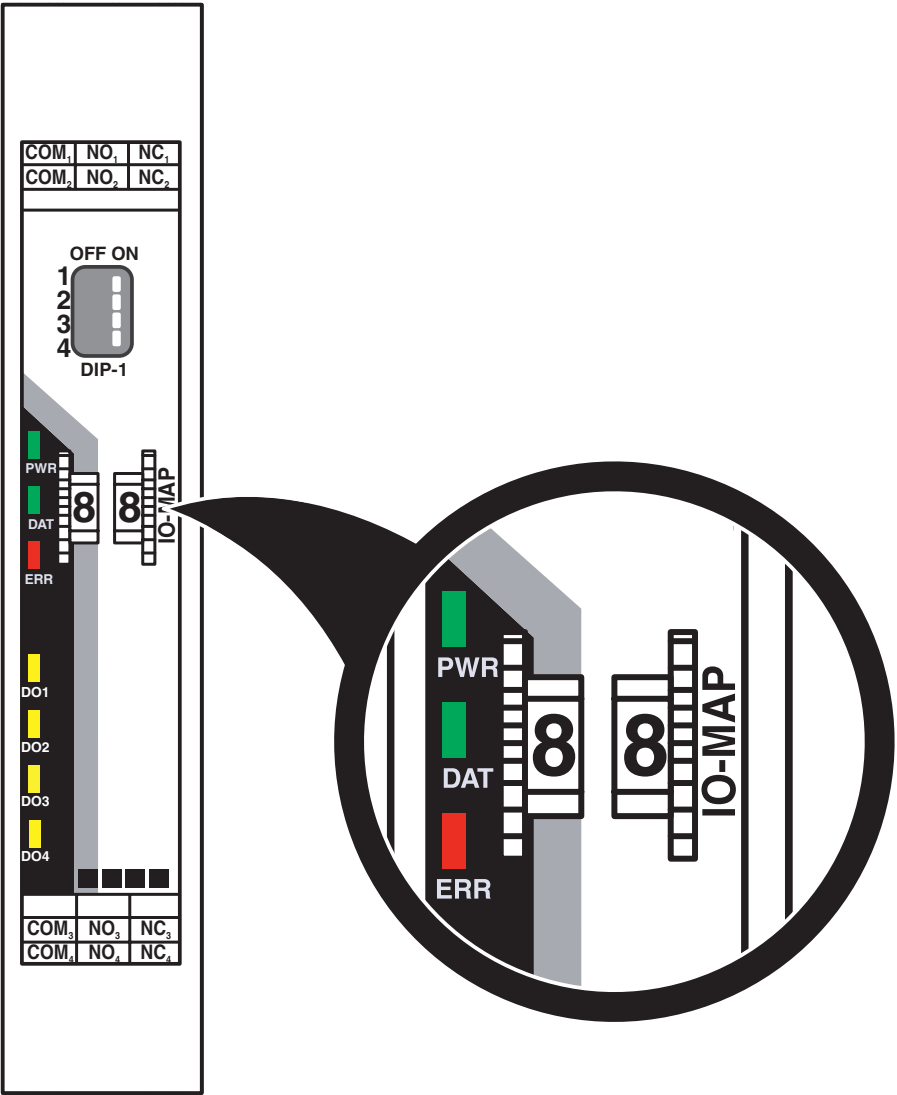
DIP switches

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Schematic diagram



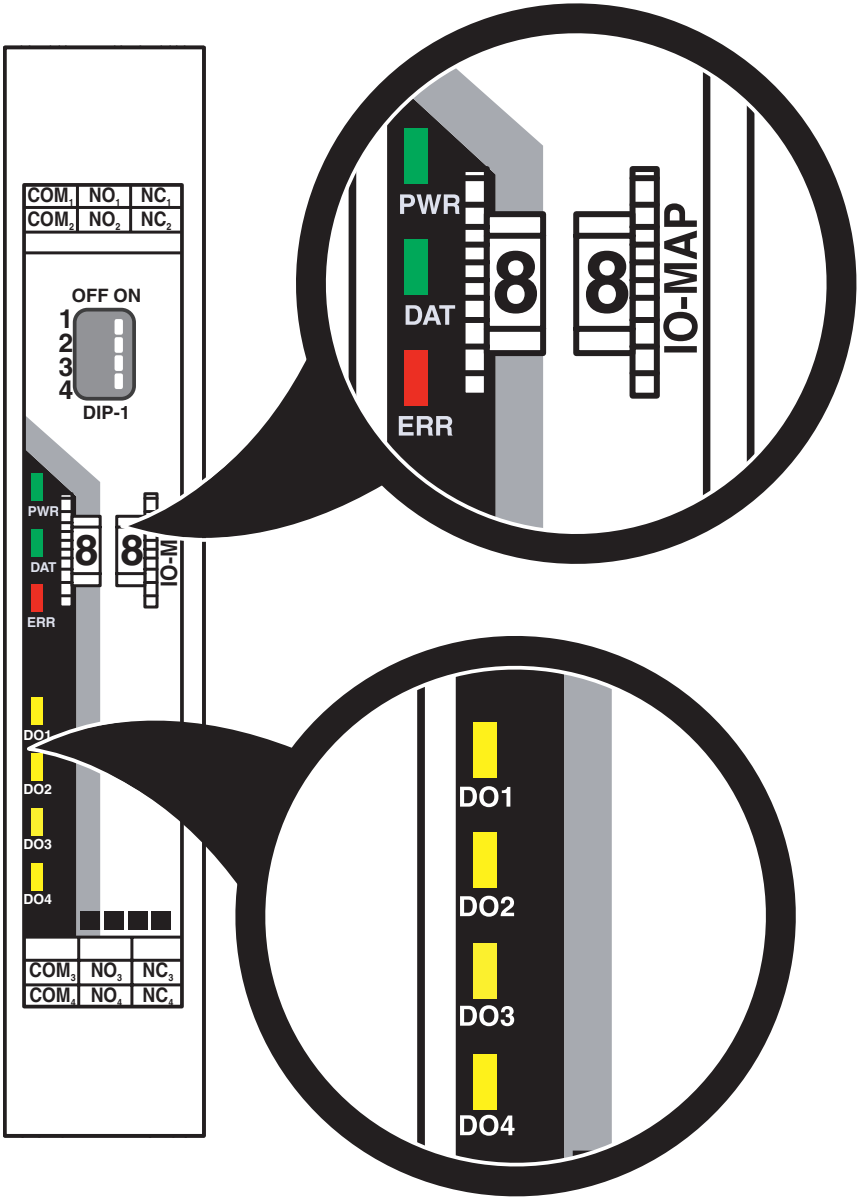
Thumbwheel

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Schematic diagram



LED indicators

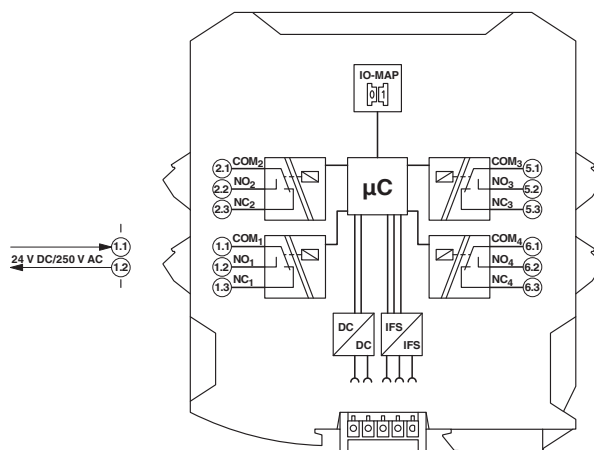
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Circuit diagram



Basic circuit diagram

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/au/products/2901536>



**UL Listed**

Approval ID: E238705



**cUL Listed**

Approval ID: E238705



**KC**

Approval ID: R-R-PCK-2901536



**EAC Ex**

Approval ID: RU\*HB49.B00033/20



**IECEx**

Approval ID: IECEx IBE 13.0019X



**cUL Listed**

Approval ID: E196811



**UL Listed**

Approval ID: E196811



**ATEX**

Approval ID: IBExU 15 ATEX B008 X



**CCC**

Approval ID: 2022122310115625



**ATEX**

Approval ID: IBExU15ATEXB008 X



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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27242604 |
|-------------|----------|

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC001599 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 32151602 |
|-------------|----------|

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## Environmental product compliance

### EU RoHS

|                                         |              |
|-----------------------------------------|--------------|
| Fulfills EU RoHS substance requirements | Yes          |
| Exemption                               | 7(a), 7(c)-I |

### China RoHS

|                                        |                                                                                                                                                                                                                                   |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environment friendly use period (EFUP) | EFUP-50                                                                                                                                                                                                                           |
|                                        | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

### EU REACH SVHC

|                                     |                                      |
|-------------------------------------|--------------------------------------|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1)                 |
| SCIP                                | 5be948c7-bfdf-40a9-b368-e14214c3fb9f |

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