# RAD-RS485-IFS - Communication module

2702184

https://www.phoenixcontact.com/us/products/2702184

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CRA-READY



Radioline - RS-485 multipoint multiplexer, can be extended with I/O modules, can be used as Modbus/RTU bus coupler or can be combined with Radioline wireless system, up to 99 stations, range of up to 1.2 km on in-house copper cables. Product is being prepared for compliance with the Cyber Resilience Act (CRA).

## Product description

The popular, straightforward method of distributing I/O information using white thumbwheels on the front of the equipment is now also available for RS-485 networks. Addressing the RS-485 front module is quick and easy too – all it takes is a turn of the yellow thumbwheel. This enhances the Radioline system's flexibility, allowing it to be used for solutions in even more applications. To increase the range, it is of course possible to replace the RS-485 line with alternative transmission media. Phoenix Contact offers a range of converters for fiber-optic cables, SHDSL, wireless or Ethernet technology.

## Your advantages

- Multipoint multiplexer for I/O signals
- Up to 99 bus stations in the network
- Quick and easy startup without programming
- Can be combined with Radioline wireless modules
- Modular extension with up to 32 I/O extension modules supported
- Extended temperature range of -40 °C … +70 °C
- Approved for use in zone 2

ELEKTROGERÄTE RÜCKNAHME

## Commercial data

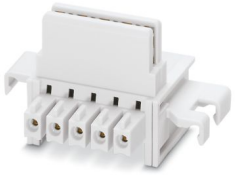
| | |
|---|---|
| Item number | 2702184 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DN26 |
| Product key | DNC61G |
| GTIN | 4055626007373 |
| Weight per piece (including packing) | 170.92 g |
| Weight per piece (excluding packing) | 110 g |
| Customs tariff number | 85176200 |
| Country of origin | DE |

## Set consists of

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

2713645

https://www.phoenixcontact.com/us/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

# Technical data

## Notes

| | |
|---|---|
| Note on application | Only for industrial use |
| Note on application | As things stand now, we are preparing the product so that, as of December 11, 2027, it will comply with the requirements of the EU Cyber Resilience Act (CRA) based on the information currently available regarding the CRA. |

Utilization restriction

| | |
|---|---|
| CCCex note | Use in potentially explosive areas is not permitted in China. |

## Product properties

| | |
|---|---|
| Product type | Communication module |
| Application | RS-485 |
| Operating mode | I/O data (Default setting, configuration via thumbwheel) |
| | Modbus/RTU server (Default setting, configuration via thumbwheel) |
| MTTF | 1233 Years (SN 29500 standard, temperature 25°C, operating cycle 21%) |
| | 514 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%) |
| | 212 Years (SN 29500 standard, temperature 40°C, operating cycle 100%) |
| Special properties | The product is being prepared for compliance with the Cyber Resilience Act (CRA) |

Insulation characteristics

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

## Electrical properties

| | |
|---|---|
| Rated insulation voltage | 60 V (In accordance with EN/IEC 60079-7) |
| Maximum power dissipation for nominal condition | 1.56 W |
| Transient surge protection | yes |

System limits

| | |
|---|---|
| Number of supported devices | ≤ 99 (Addressing via thumbwheel) |
| Number of possible extension modules | ≤ 32 (Per module) |

Supply

| | |
|---|---|
| Supply voltage range | 19.2 V DC ... 30.5 V DC |
| Max. current consumption | ≤ 65 mA (at 24 V DC, at 25 °C, stand-alone) |
| | ≤ 6 A (at 24 V DC, with DIN rail connector at full capacity) |

## Output data

Digital

| | |
|---|---|
| Output name | Link relay output |
| Number of outputs | 1 |
| Contact switching type | Changeover contact |
| Contact material | PdRu, gold-plated |
| Maximum switching voltage | 30 V AC/DC |
| | 60 V DC |
| Max. switching current | 500 mA (30 V AC/DC) |
| | 300 mA (60 V DC) |
| Electrical service life | 5x $10^5$ switching cycles with 0.5 A at 30 V DC |

## Connection data

| | |
|---|---|
| Tightening torque | 0.5 Nm ... 0.6 Nm |
| | 5 $lb_f$-in. ... 7 $lb_f$-in. |
| Connection method | Screw connection |
| Stripping length | 7 mm |
| Conductor cross-section, rigid min. | 0.2 mm² |
| Conductor cross-section, rigid max. | 2.5 mm² |
| Conductor cross-section flexible min. | 0.2 mm² |
| Conductor cross-section flexible max. | 2.5 mm² |
| Conductor cross-section AWG min. | 24 |
| Conductor cross-section AWG max. | 14 |
| Tightening torque | 0.5 Nm ... 0.6 Nm |
| | 5 $lb_f$-in. ... 7 $lb_f$-in. |

## Interfaces

Serial: RS-485

| | |
|---|---|
| Data rate | 300 bps / 600 bps / 1.2 kbps / 2.4 kbps / 4.8 kbps / 9.6 kbps / 19.2 kbps / 38.4 kbps / 57.6 kbps / 93.75 kbps / 115.2 kbps (Default setting: 19.2/8/E/1) |
| Connection method | COMBICON plug-in screw terminal block |
| Connection technology | 2-conductor |
| Transmission length | ≤ 1200 m |
| Termination resistor | 390 Ω (switchable via DIP switches) |
| | 150 Ω (switchable via DIP switches) |
| | 390 Ω (switchable via DIP switches) |

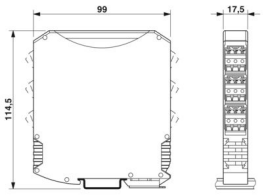
Serial: Configuration interface

| | |
|---|---|
| Connection method | S-PORT (socket) |

## Signaling

| | |
|---|---|
| Status display | LED supply voltage, PWR (green) |
| | Green LED (bus communication, DAT) |
| | LED periphery error, ERR (red) |
| | Green LED (receive data, RX) |
| | Green LED (transmit data, TX) |

## Dimensions

| | |
|---|---|
| Dimensional drawing |   |
| 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) |
| | -40 °F ... 158 °F (>131°F derating, see technical documentation) |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| | -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 | Ⓔx 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 |

UL, USA/Canada

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

Corrosive gas test

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

## EMC data

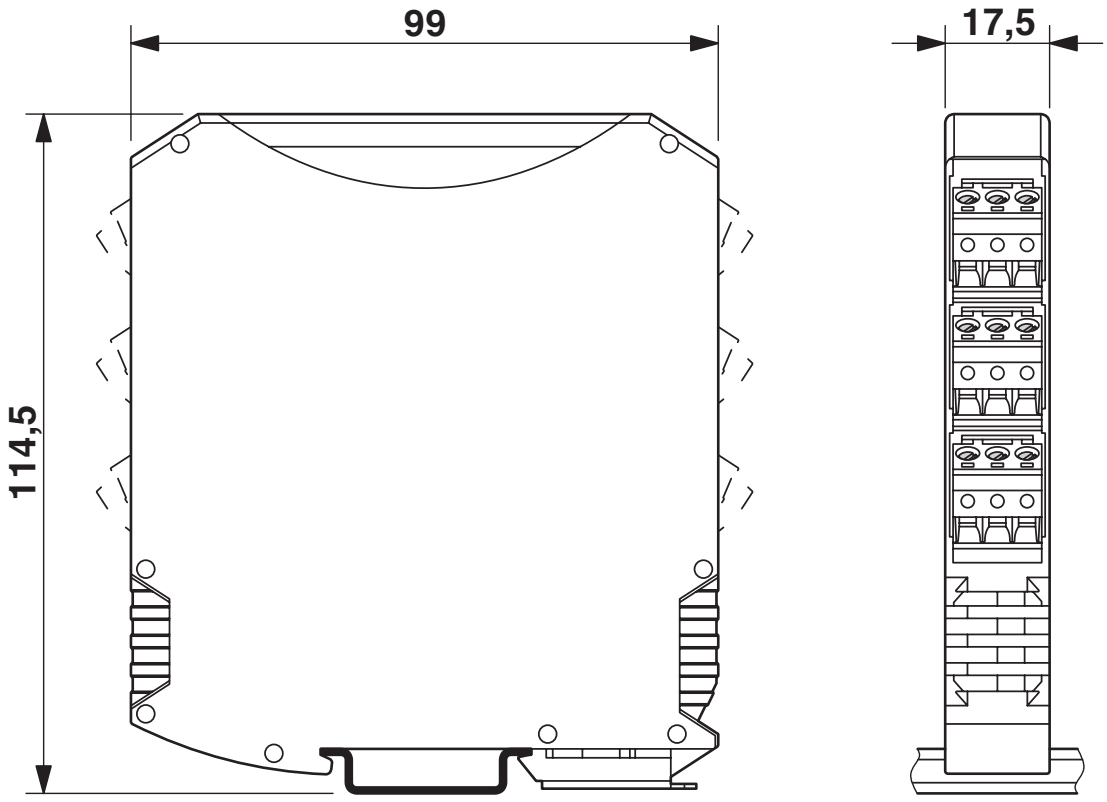
| | |
|---|---|
| Electromagnetic compatibility | Conformance with EMC Directive 2014/30/EU |

## Mounting

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

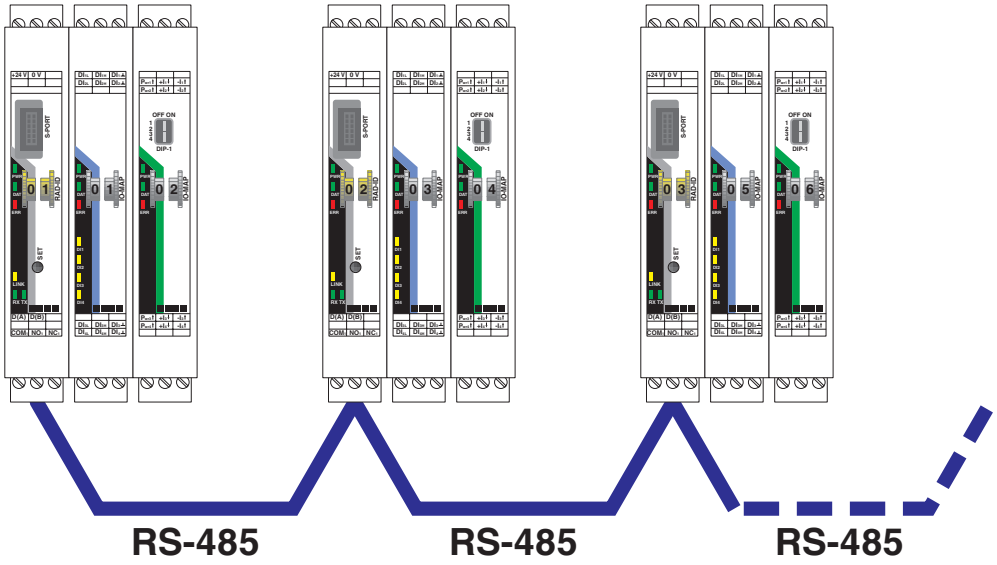
## Drawings

Dimensional drawing



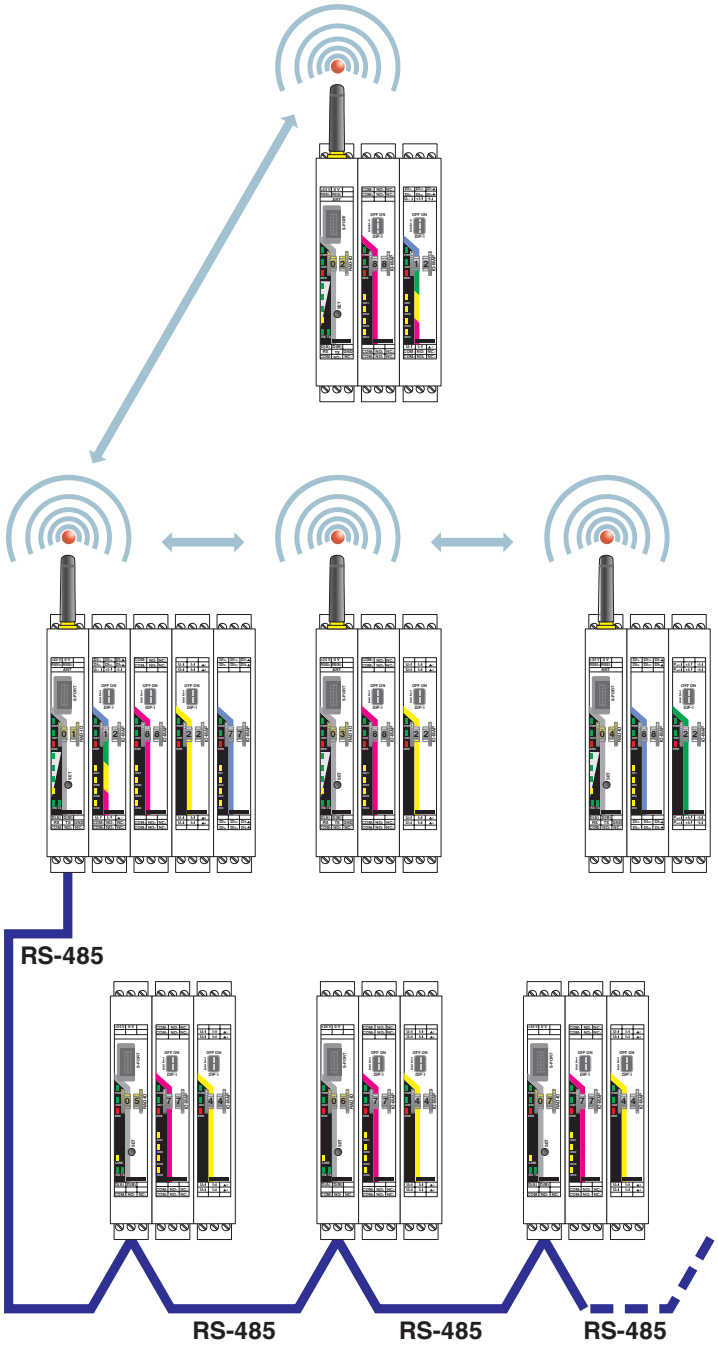

Slim design

Functional drawing



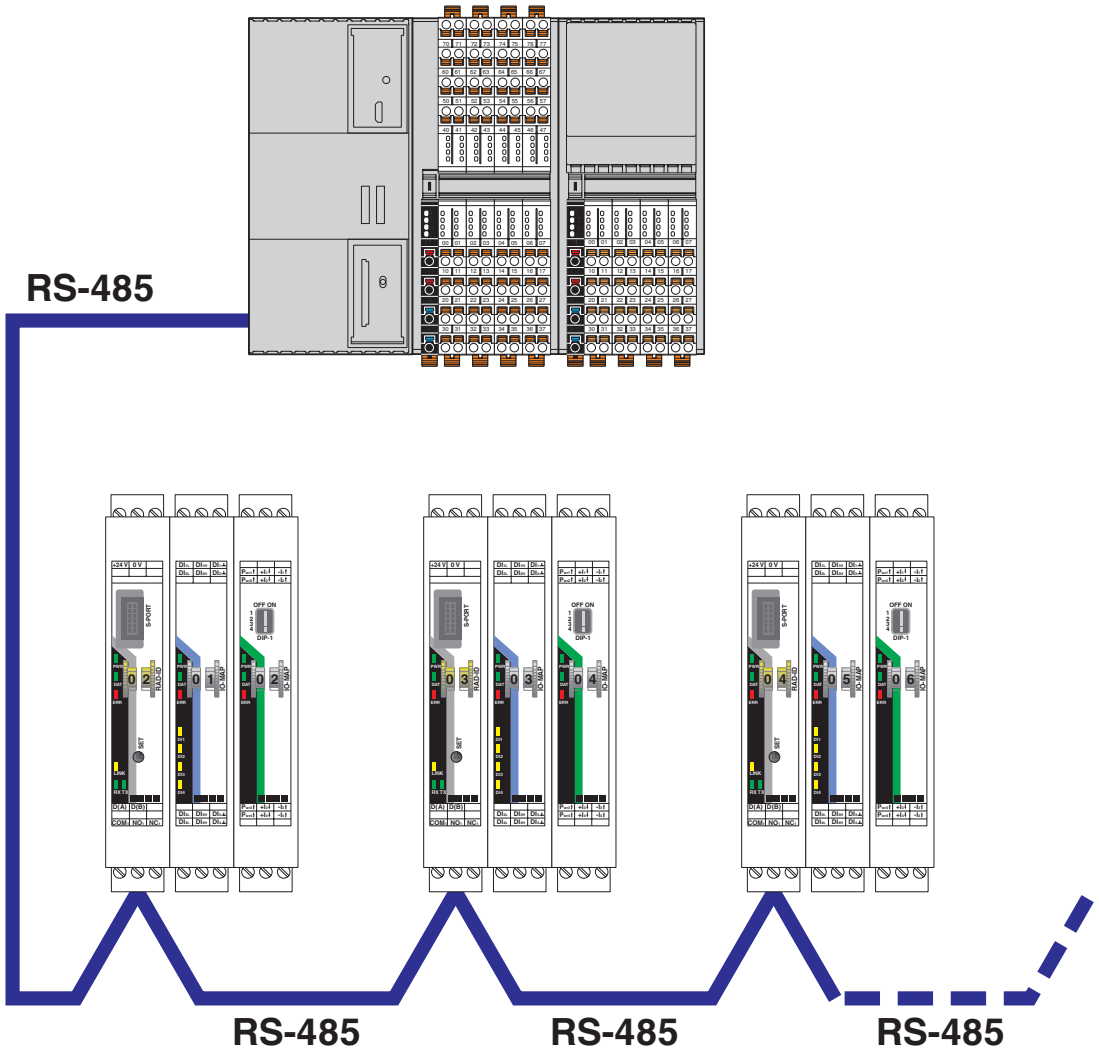

I/O-to-I/O, only RS-485

Functional drawing



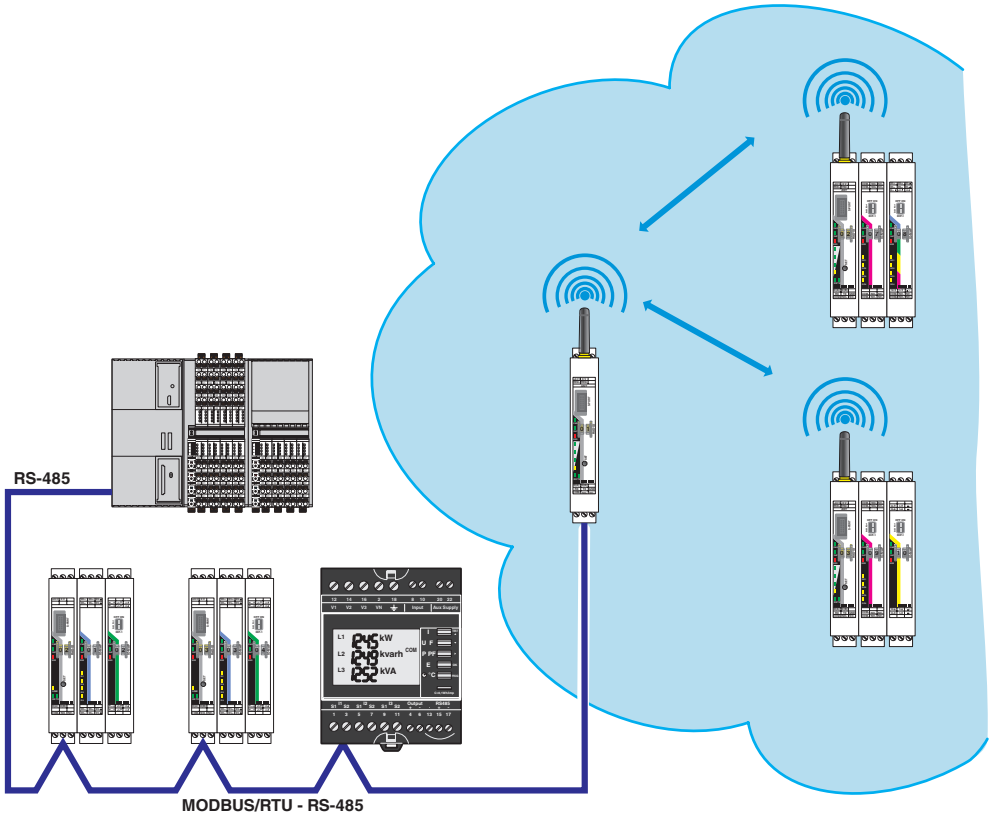

I/O-to-I/O, wireless, and RS-485

Functional drawing



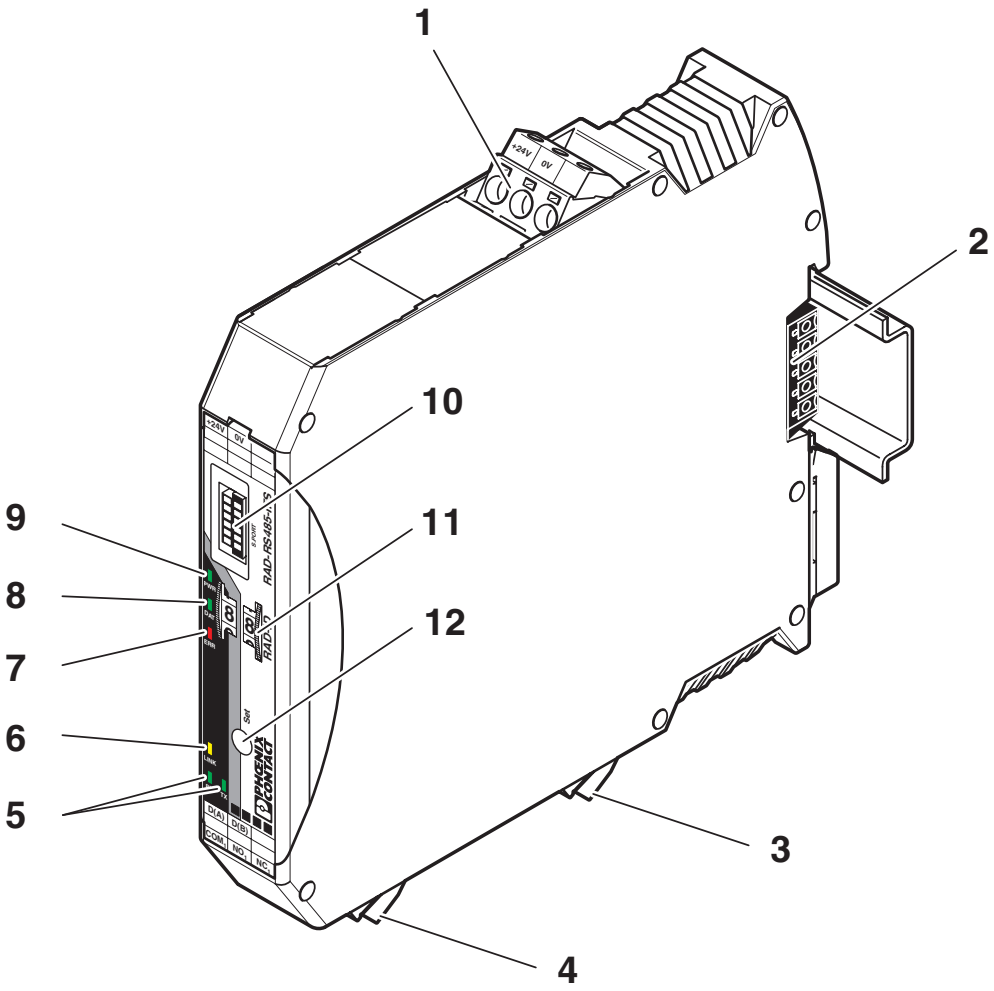

Modbus/RTU server

Functional drawing



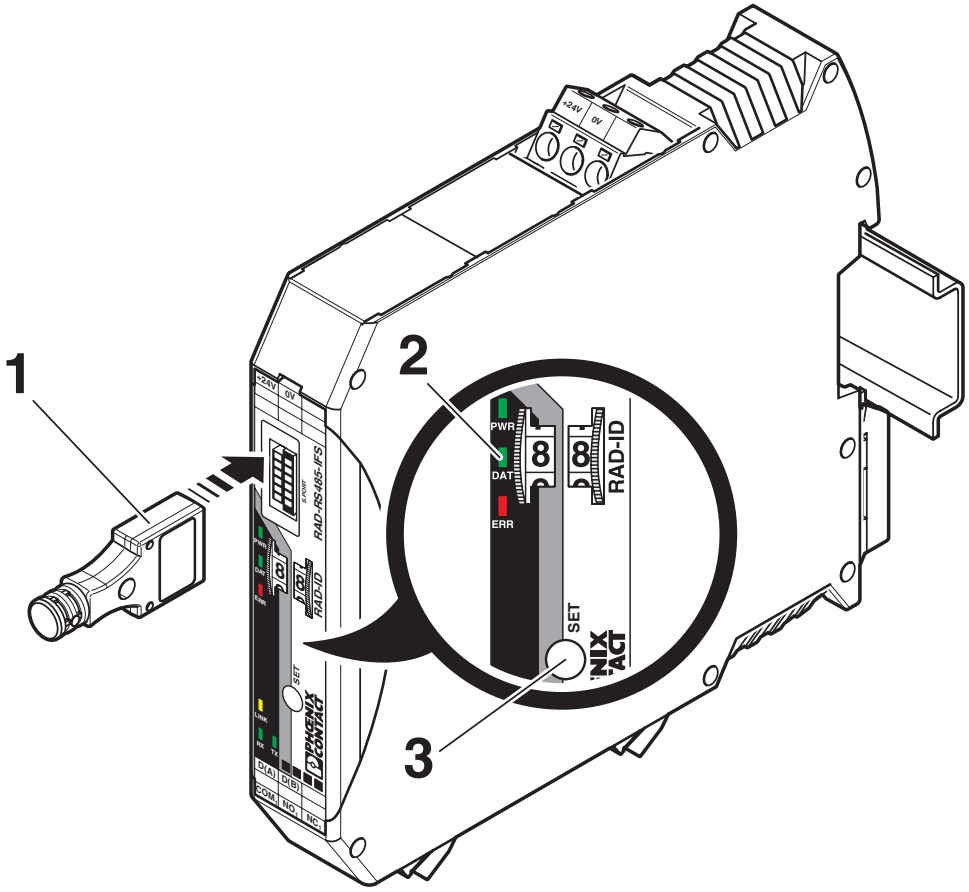

Radioline wireless system and RS-485 stations on a Modbus client (I/O-to-serial)

Schematic diagram



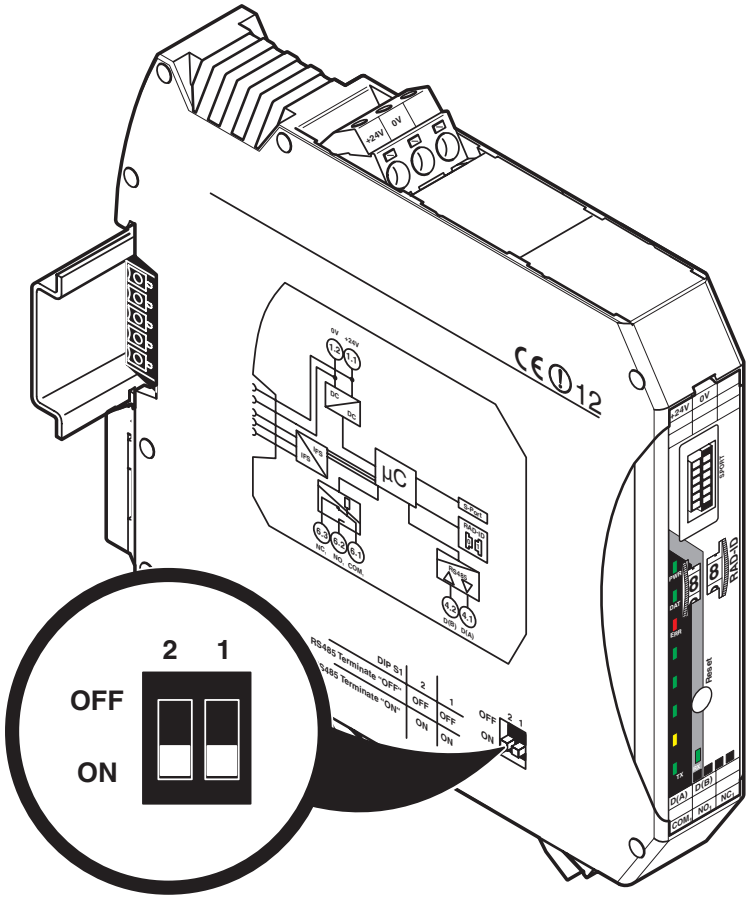

Function elements

Schematic diagram



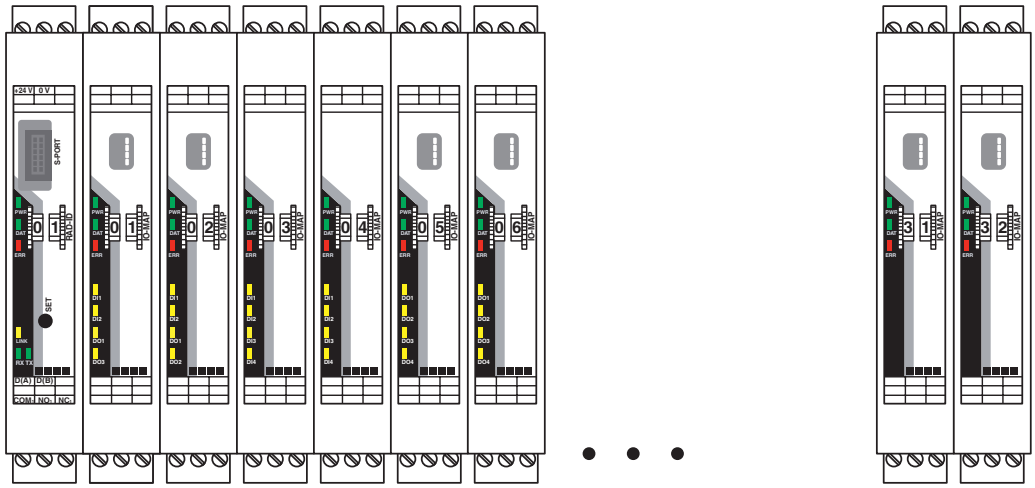

Configuration with memory stick

Schematic diagram



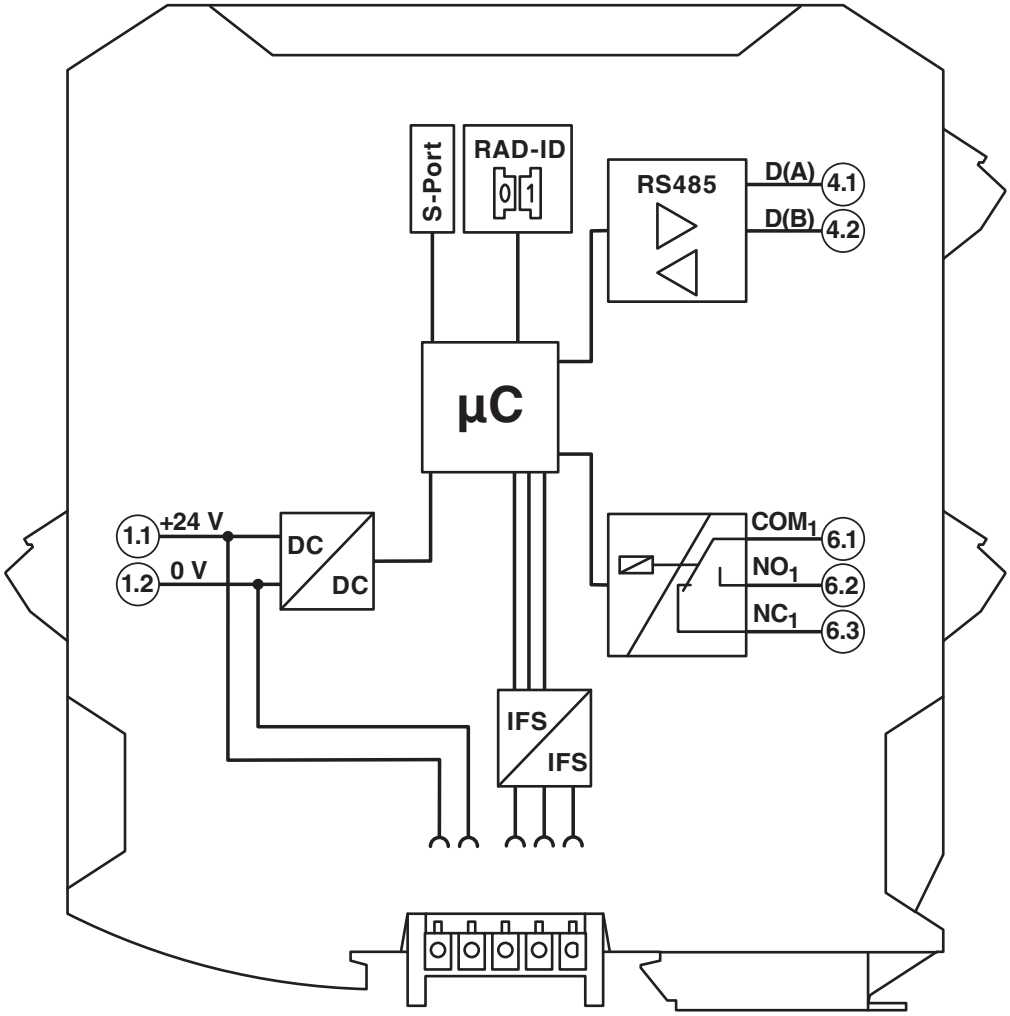

DIP switches

Schematic diagram



Radioline joining station with up to 32 I/O extension modules

Circuit diagram




Basic circuit diagram

## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2702184

**UL Listed**
Approval ID: E238705

**cUL Listed**
Approval ID: E238705

**IECEx**
Approval ID: IECEx IBE 13.0019X

**cUL Listed**
Approval ID: FILE E 196811

**UL Listed**
Approval ID: FILE E 196811

**ATEX**
Approval ID: IBExU15ATEXB008 X

## Classifications

### ECLASS

| | |
|---|---|
| ECLASS-13.0 | 27242608 |
| ECLASS-15.0 | 27242608 |

### ETIM

| | |
|---|---|
| ETIM 10.0 | EC001604 |

### UNSPSC

| | |
|---|---|
| UNSPSC 21.0 | 43222600 |

## 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 | 0202f068-7217-4afb-92be-81a61687907e |


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