RAD-RS485-IFS - Communication module

2702184

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

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

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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

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

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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

Note on application	Only for industrial use

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%)

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

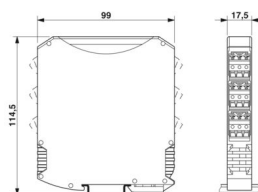|	
Status display	LED supply voltage, PWR (green)
	Green LED (bus communication, DAT)
	LED periphery error, ERR (red)
	Green LED (receive data, RX)
	Green LED (transmit data, TX)

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

UKCA

Certificate	UKCA-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

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
Mounting position	any
Useable DIN rail type	DIN rail: 35 mm

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Drawings

Dimensional drawing

99

17,5

114,5
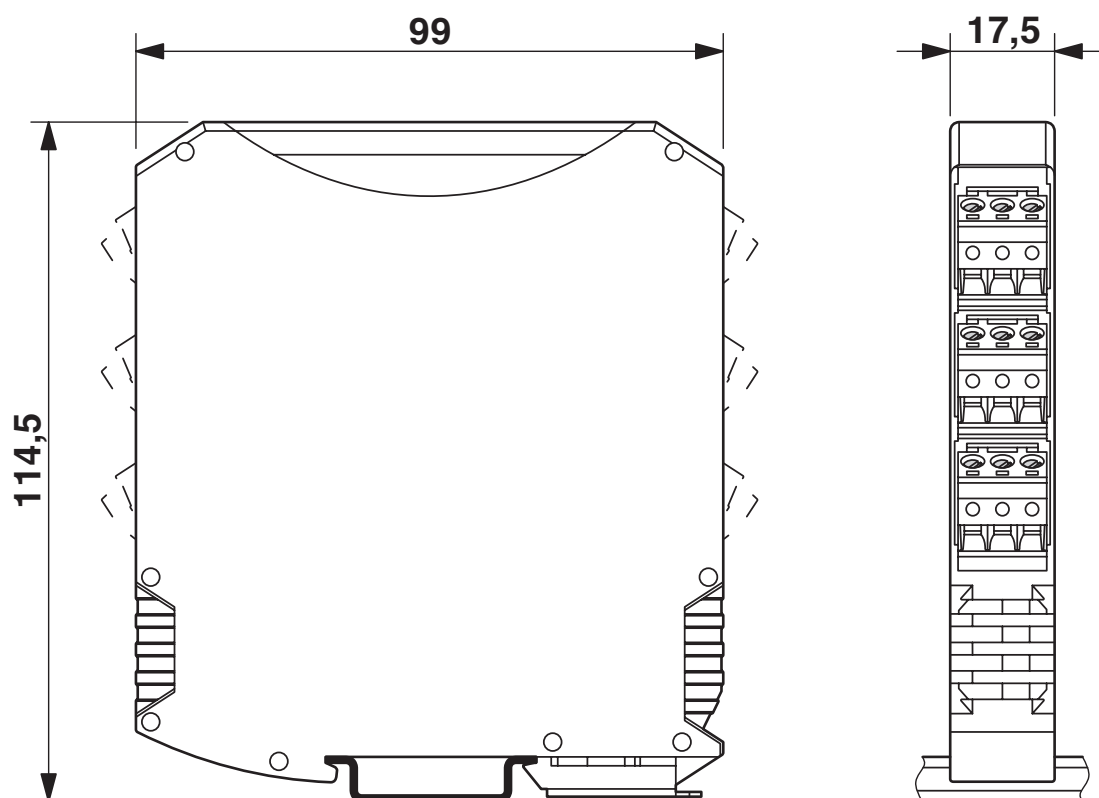
Slim design
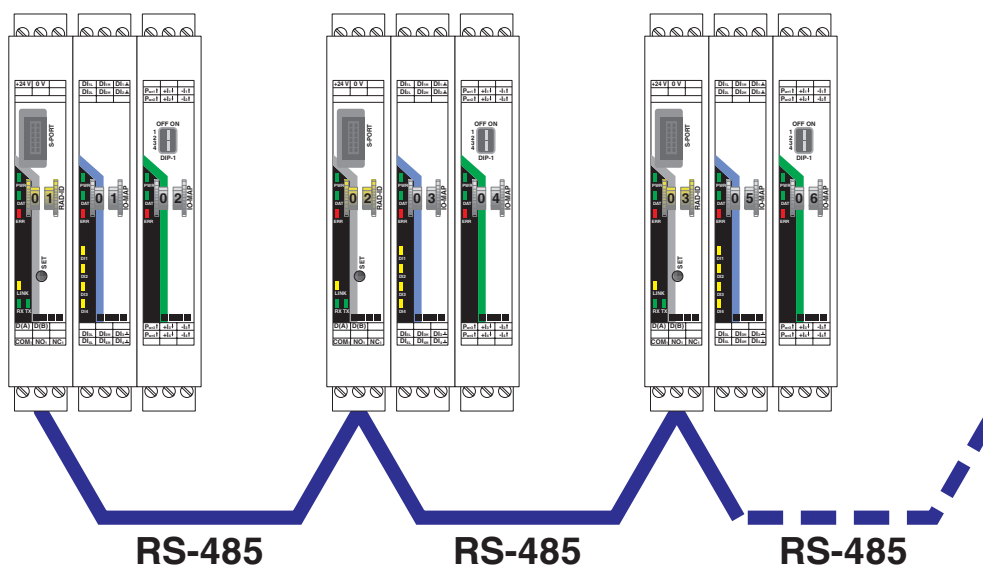
Functional drawing

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

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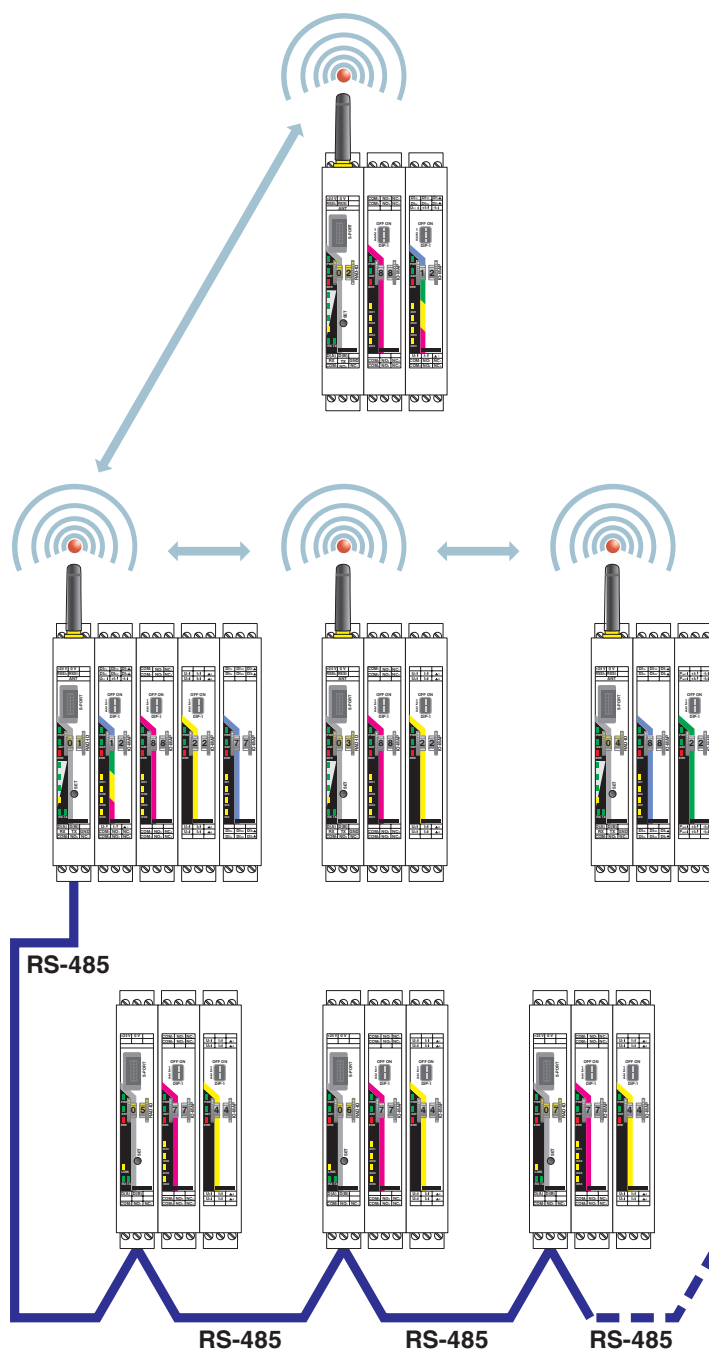
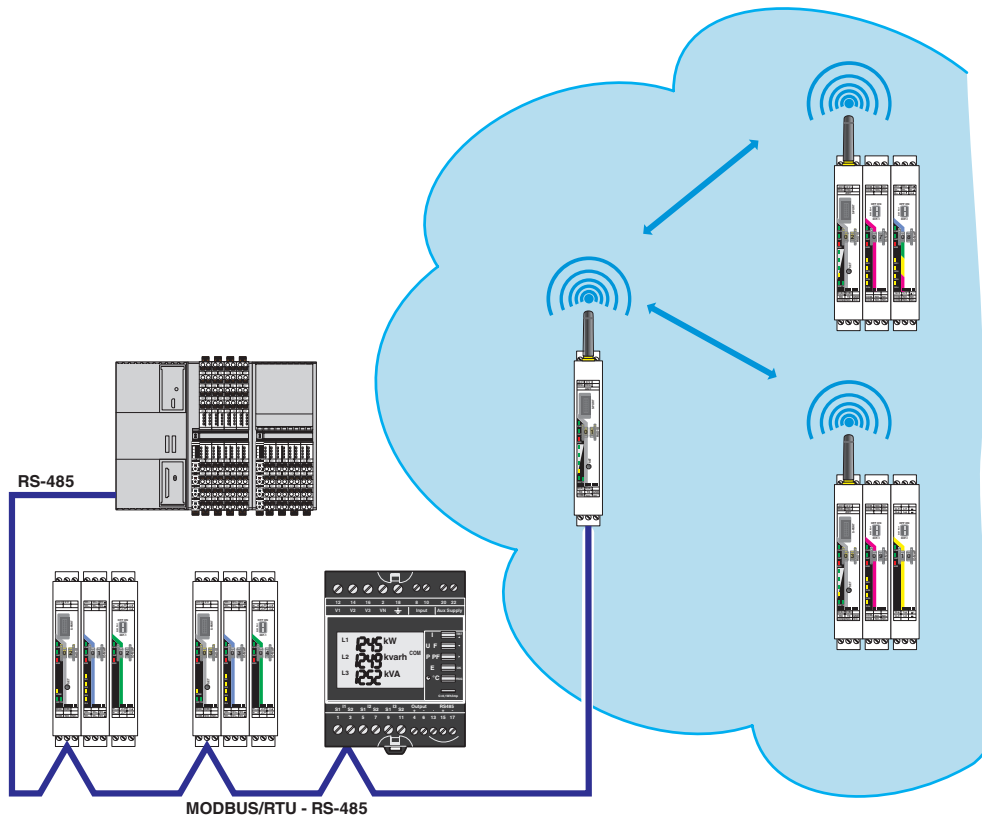I/O-to-I/O, wireless, and RS-485

Functional drawing
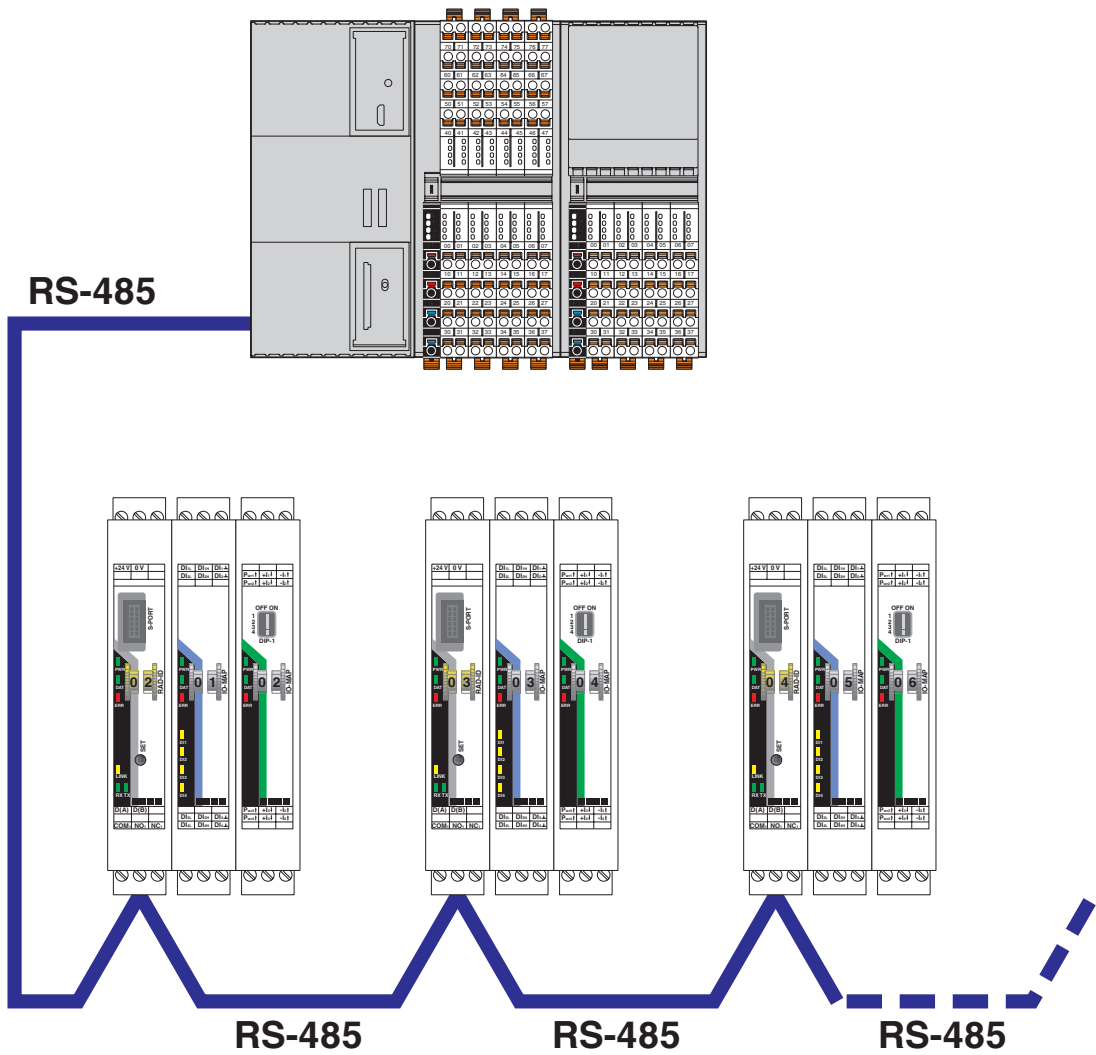
Modbus/RTU server

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Functional drawing

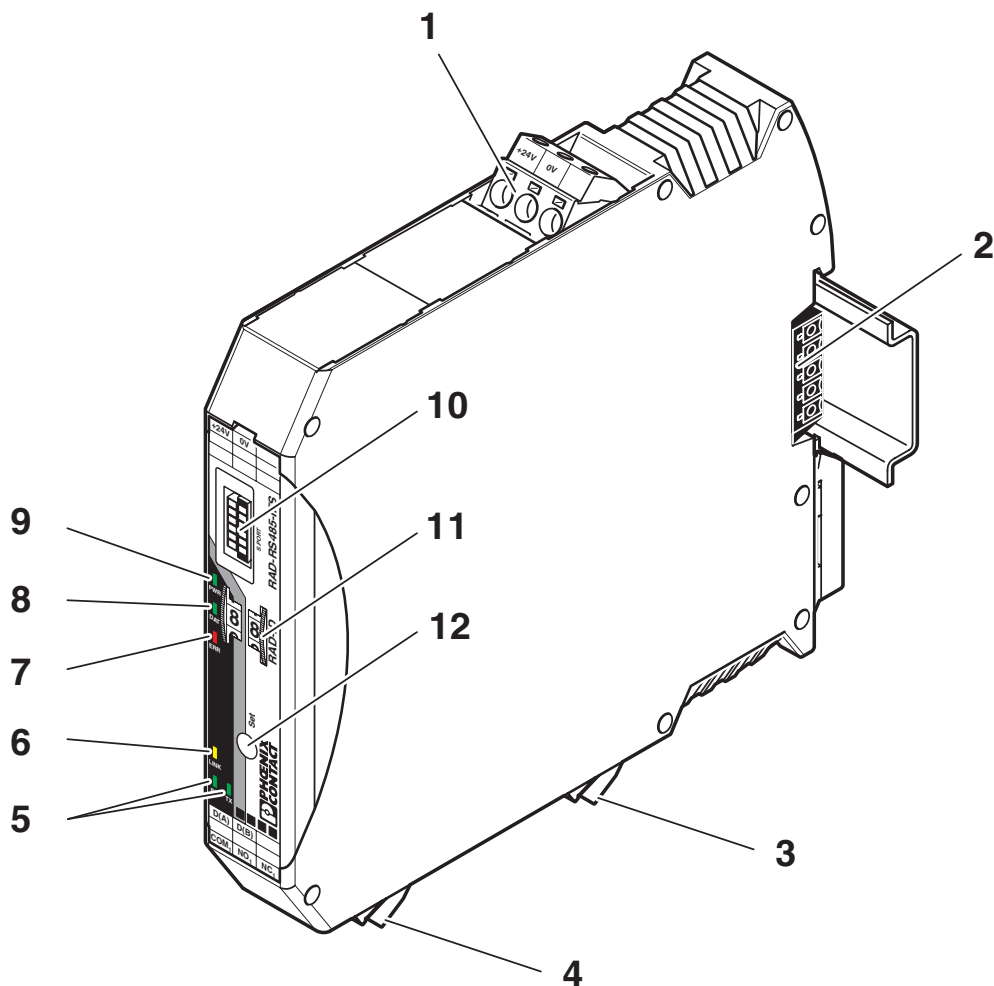Radioline wireless system and RS-485 stations on a Modbus client (I/O-to-serial)

Schematic diagram

Function elements
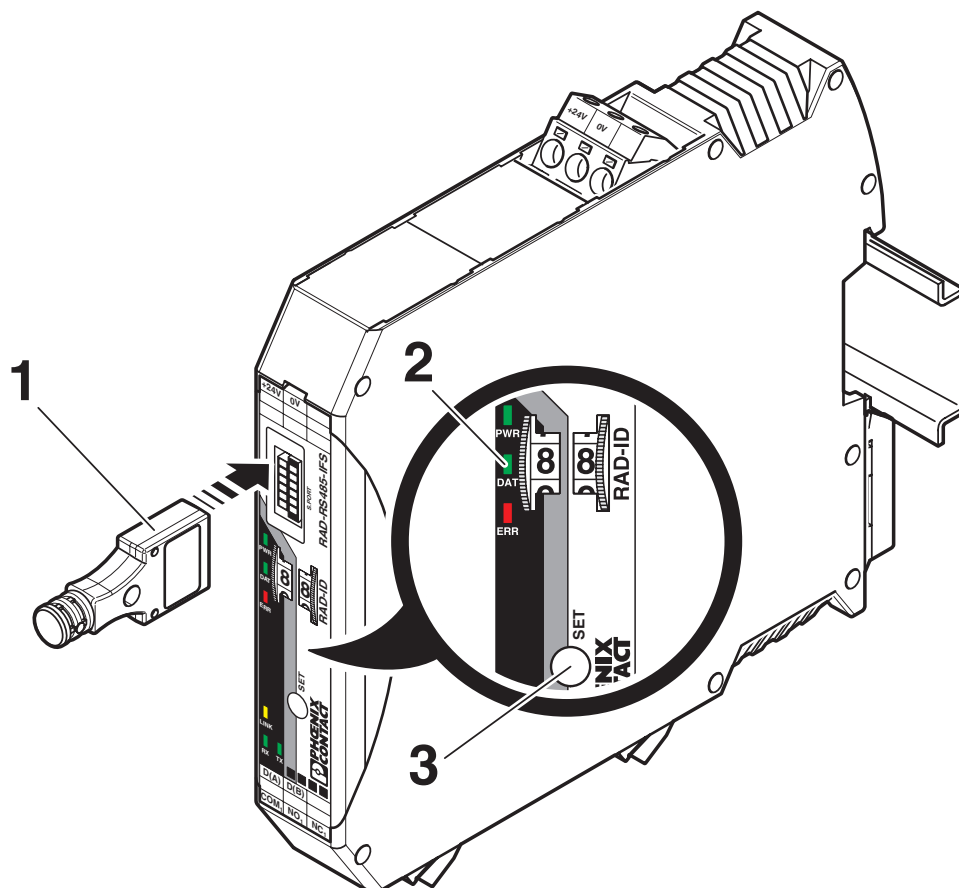
Schematic diagram
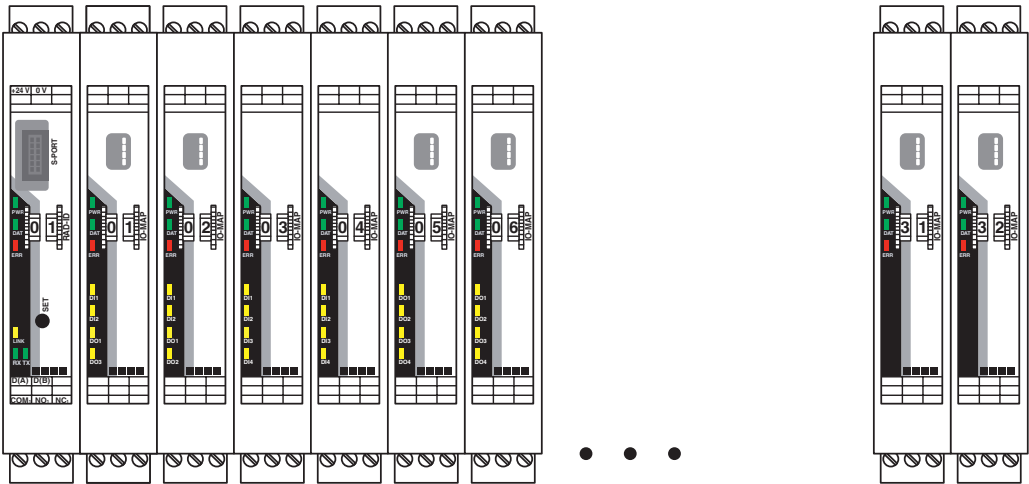

Configuration with memory stick
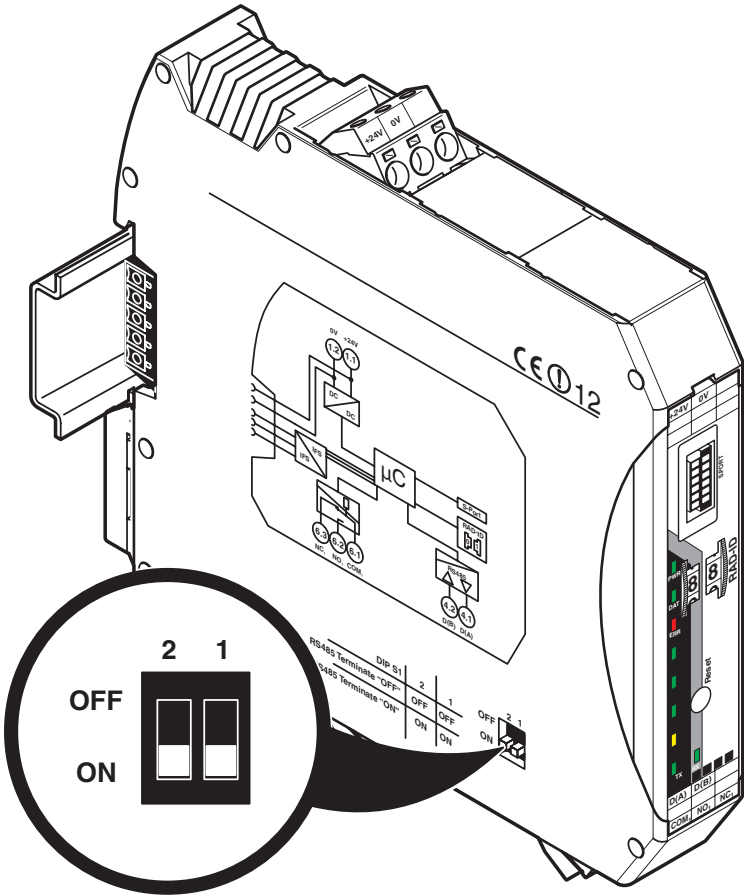
Schematic diagram
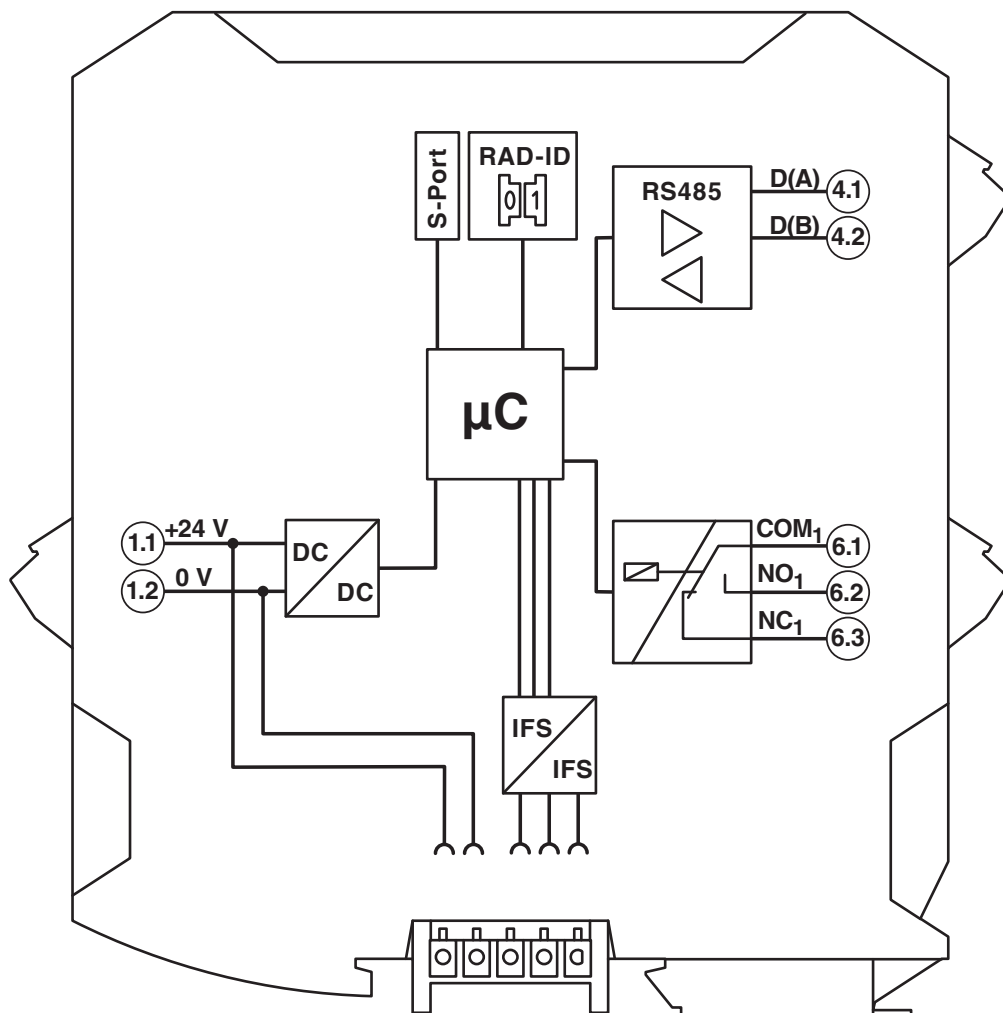

DIP switches

Schematic diagram

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

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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/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

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Classifications

ECLASS

ECLASS-13.0	27242608
ECLASS-15.0	27242608

ETIM

ETIM 9.0	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