

Communication module - RAD-RS485-IFS - 2702184

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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 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, -40 °C ... +70 °C
- ✓ Approved for use in zone 2



Key Commercial Data

Packing unit	1 pc
GTIN	 4 055626 007373
GTIN	4055626007373
Weight per Piece (excluding packing)	200.000 g
Custom tariff number	85176200
Country of origin	Germany

Communication module - RAD-RS485-IFS - 2702184

Technical data

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
	Use in potentially explosive areas is not permitted in China.

Dimensions

Width	17.5 mm
Height	113 mm
Depth	114.5 mm

Ambient conditions

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

General

Set consists of	2709561 ME 17,5 TBUS 1,5/ 5-ST-3,81 GN
Operating mode	I/O data (Default setting, configuration via thumbwheel)
	Modbus/RTU server (Default setting, configuration via thumbwheel)
Overvoltage category	II
Assembly instructions	on standard DIN rail NS 35 in accordance with EN 60715
Degree of pollution	2
Housing material	PA 6.6-FR
Flammability rating according to UL 94	V0
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%)
Weight	200 g

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)

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Technical data

Supply

	≤ 6 A (at 24 V DC, with DIN rail connector at full capacity)
Transient surge protection	Yes

Serial interface

Interface 1	RS-485
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)
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)
Interface 2	Configuration interface
Connection method	S-PORT (socket)

RF link relay output

Number of outputs	1
Contact 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)
Electrical service life	5x 10 ⁵ switching cycles with 0.5 A at 30 V DC

Connection data

Connection method	Screw connection
Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	2.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	2.5 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	14
Stripping length	7 mm
Tightening torque	0.6 Nm
Screw thread	M3

Status indicator

Status display	Green LED (supply voltage, PWR)
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Technical data

Status indicator

	Green LED (bus communication, DAT)
	Red LED (periphery error, ERR)
	Green LED (receive data, RX)
	Green LED (transmit data, TX)

Conformance/approvals

Designation	CE
Certificate	CE-compliant
Designation	ATEX
Identification	# II 3 G Ex nA nC IIC T4 Gc
Certificate	IBExU 15 ATEX B008 X
Additional text	Please follow the special installation instructions in the documentation!
Designation	IECEX
Identification	Ex nA nC IIC T4 Gc
Certificate	IECEX IBE 13.0019X
Designation	EAC Ex
Identification	2Ex nA nC IIC T4 Gc X
Certificate	RU C-DE.HB49.B.00033/20
Designation	UL, USA/Canada
Identification	508 Listed
	Class I, Div. 2, Groups A, B, C, D T4A
	Class I, Zone 2, IIC T4
Designation	Corrosive gas test
Identification	ISA-S71.04-1985 G3 Harsh Group A

Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Flammability rating according to UL 94	V0
Shock	16g, 11 ms
Vibration (operation)	in accordance with IEC 60068-2-6: 5g, 10 Hz ... 150 Hz

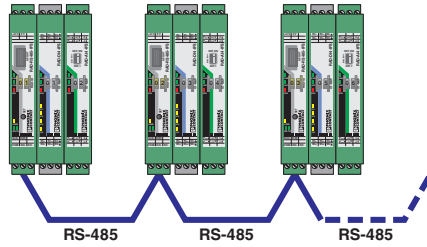
Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Drawings

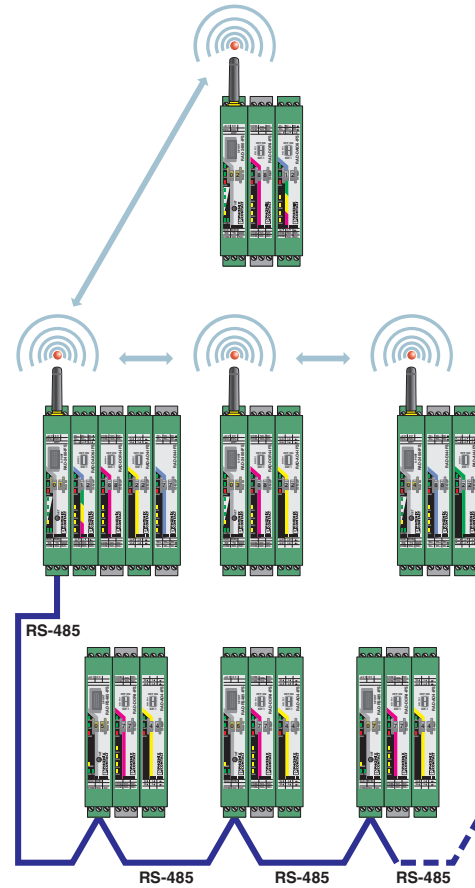
Communication module - RAD-RS485-IFS - 2702184

Functional drawing



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

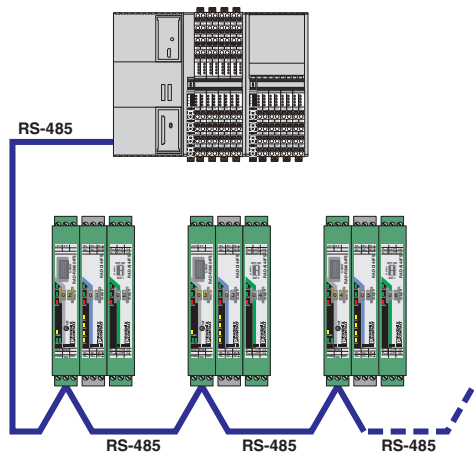
Functional drawing



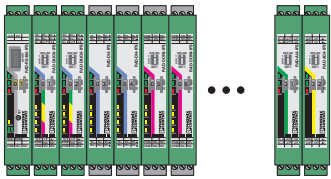
I/O-to-I/O, wireless, and RS-485

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Functional drawing



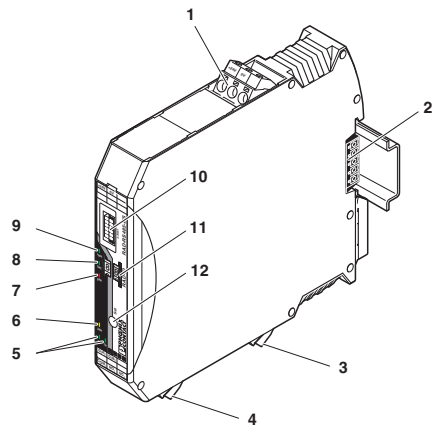
Functional drawing



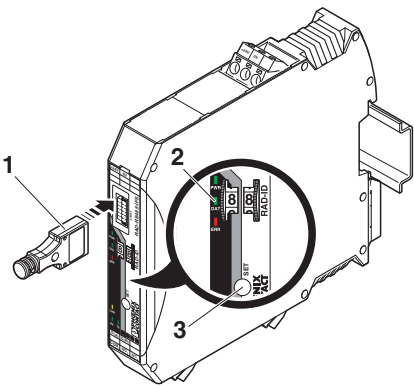
Radioline connection station with up to 32 I/O extension modules

Modbus/RTU server

Schematic diagram



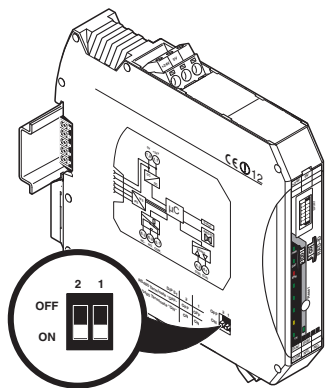
Schematic diagram



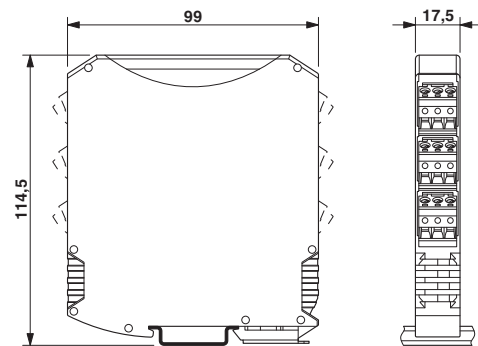
Configuration with memory stick

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Schematic diagram



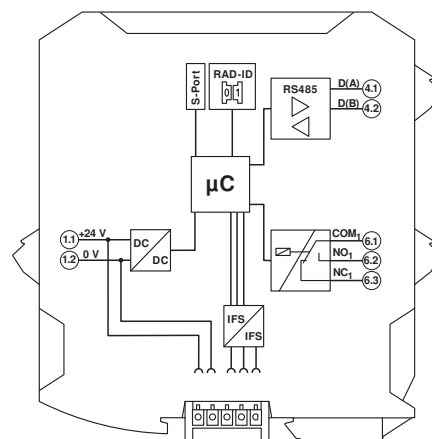
Dimensional drawing



DIP switches

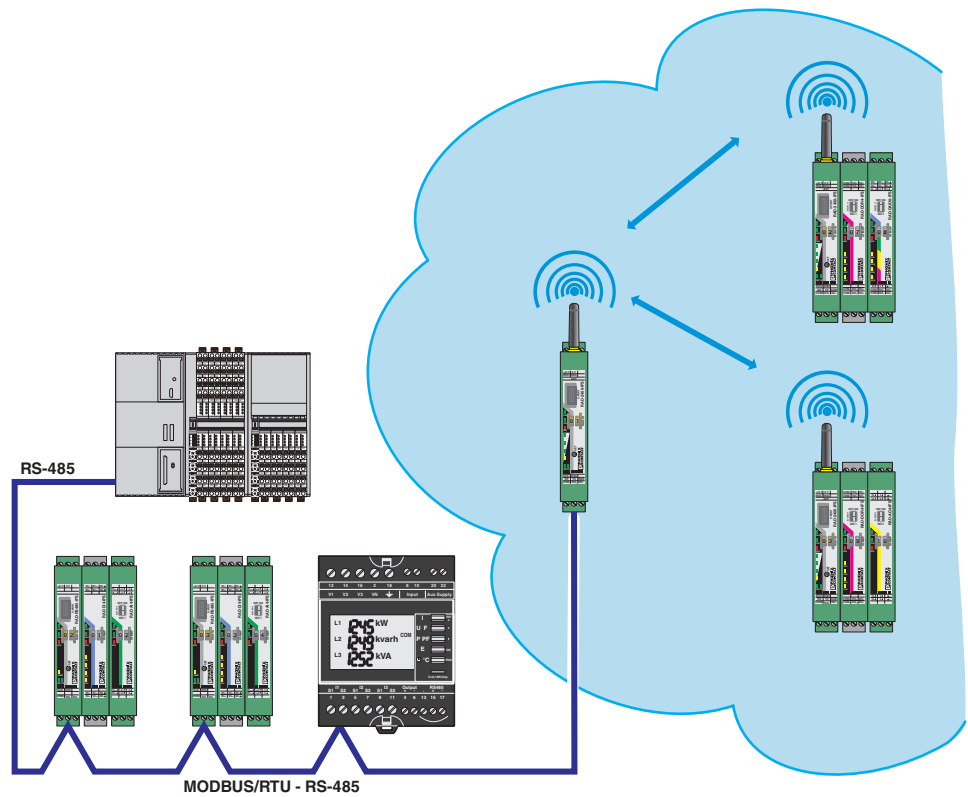
Slim design

Circuit diagram



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Functional drawing



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

Articles in set

DIN rail bus connectors - ME 17,5 TBUS 1,5/ 5-ST-3,81 GN - 2709561



DIN rail connector for DIN rail mounting. Universal for TBUS housing. Gold-plated contacts, 5-pos.

Classifications

eCl@ss

eCl@ss 10.0.1	19179290
eCl@ss 11.0	19179090
eCl@ss 5.0	27242200

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Classifications

eCl@ss

eCl@ss 5.1	27242200
eCl@ss 6.0	19179200
eCl@ss 7.0	19179290
eCl@ss 9.0	19179290

ETIM

ETIM 6.0	EC000310
ETIM 7.0	EC000310

UNSPSC

UNSPSC 13.2	43222604
UNSPSC 18.0	43222604
UNSPSC 19.0	43222604
UNSPSC 20.0	43222604
UNSPSC 21.0	43222604

Approvals

Approvals

Approvals

UL Listed / cUL Listed / UL Listed / cUL Listed

Ex Approvals

IECEX / UL Listed / cUL Listed / ATEX / EAC Ex / IECEX / UL Listed / cUL Listed / EAC Ex / ATEX

Approval details

UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
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cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
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Approvals

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<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

FILE E 238705

cUL Listed



<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

FILE E 238705

Accessories

Accessories

Configuration memory

Configuration memory - RAD-MEMORY - 2902828



Radioline - memory stick for saving custom configuration data

Extension module

I/O extension module - RAD-DAIO6-IFS - 2901533



Radioline - I/O extension module, 2 digital inputs and outputs (0 ... 250 V AC/DC) and 1 analog input (0/4 ... 20 mA) and output (0/4 ... 20 mA, 0 ... 10 V)

I/O extension module - RAD-DI4-IFS - 2901535



Radioline - I/O extension module, 4 digital inputs (0 ... 250 V AC/DC)

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Accessories

I/O extension module - RAD-DOR4-IFS - 2901536



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

I/O extension module - RAD-DI8-IFS - 2901539



Radioline - I/O extension module, 8 digital inputs (0 ... 30.5 V DC) or 2 pulse inputs up to 100 Hz

I/O extension module - RAD-NAM4-IFS - 2316275



Radioline - I/O extension module, 4 NAMUR digital input module used in Radioline and PROFIBUS PA MUX I/O systems. Fulfills the NAMUR proximity sensor standard EN 60947-5-6, and communication to the head stations for Radioline systems and the FB-MUX/HS...PA via the T-BUS connector installed on the DIN rail. This module has channel-to-channel isolation.

I/O extension module - RAD-DO8-IFS - 2902811



Radioline - I/O extension module, 8 digital transistor outputs (30.5 V DC/200 mA)

I/O extension module - RAD-AI4-IFS - 2901537



Radioline - I/O extension module, 4 analog current inputs (0/4 mA ... 20 mA)

Communication module - RAD-RS485-IFS - 2702184

Accessories

I/O extension module - RAD-AI4-U-IFS - 2702290



Radioline - I/O extension module, 4 analog voltage inputs (0 ... 5 V, 0 ... 10 V)

I/O extension module - RAD-AO4-IFS - 2901538



Radioline - I/O extension module, 4 analog current or voltage outputs (0/4 mA ... 20 mA, 0 V ... 10 V)

I/O extension module - RAD-PT100-4-IFS - 2904035



Radioline - I/O extension module, 4 Pt 100 inputs (-50°C ... +250°C / -58 °F ... 482 °F)

PCB plug

Printed-circuit board connector - TVFKC 1,5/ 3-ST - 1713842



PCB connector, nominal cross section: 1.5 mm², color: green, nominal current: 10 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, number of potentials: 3, Number of rows: 1, Number of positions per row: 3, number of connections: 6, product range: TVFKC 1,5/-ST, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, Locking clip: - Locking clip, plug-in system: CLASSIC COMBICON, Locking: without, mounting: without, type of packaging: packed in cardboard

Power supply

Power supply unit - MINI-SYS-PS-100-240AC/24DC/1.5 - 2866983



Primary-switched MINI POWER supply for DIN rail mounting, input: 1-phase, output: 24 V DC/1.5 A

Communication module - RAD-RS485-IFS - 2702184

Accessories

Programming cable

Cable for programming - RAD-CABLE-USB - 2903447



Radioline - USB data cable for communication between the PC and Radioline devices, energy supply for diagnostics and configuration via the USB port of the PC, cable length: 2 m / 6.5 ft

Shield connection clamp

Shield connection clamp - SKS 8-SNS35 - 3062786



Shield connection terminal block, for applying the shield to busbars

Surge protection for information technology

Surge protection device - TTC-6P-3-HF-F-M-12DC-PT-I - 2906796



Surge protection, consisting of protective plug and base element, with integrated status indicator and knife disconnection for three signal wires with common reference potential. For HF applications and telecommunications interfaces without supply voltage. Indirect grounding via gas-filled surge arrester.

Wireless module

Wireless module - RAD-2400-IFS - 2901541



Radioline - 2.4 GHz wireless transceiver with RS-232/RS-485 interface, can be extended with I/O modules, RSMA (female) antenna connection, point-to-point, star, and mesh networks up to 250 stations, range of up to 5 km (with a clear line of sight), for worldwide use

Communication module - RAD-RS485-IFS - 2702184

Accessories

Wireless module - RAD-868-IFS - 2904909



Radioline - 868 MHz wireless transceiver with RS-232/RS-485 interface, can be extended with I/O modules, RSMA (female) antenna connection, point-to-point, star, and mesh networks up to 99 stations, range of up to 20 km (with a clear line of sight), for use in Europe

Wireless module - RAD-900-IFS - 2901540



Radioline - 900 MHz wireless transceiver with RS-232/485 interface, can be extended with I/O modules, RSMA (female) antenna connection, point-to-point, star, and mesh networks up to 250 stations, range of up to 32 km (line of sight), use in North America

Additional products

I/O extension module - RAD-DAIO6-IFS - 2901533



Radioline - I/O extension module, 2 digital inputs and outputs (0 ... 250 V AC/DC) and 1 analog input (0/4 ... 20 mA) and output (0/4 ... 20 mA, 0 ... 10 V)

I/O extension module - RAD-DI4-IFS - 2901535



Radioline - I/O extension module, 4 digital inputs (0 ... 250 V AC/DC)

I/O extension module - RAD-DOR4-IFS - 2901536



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

Communication module - RAD-RS485-IFS - 2702184

Accessories

I/O extension module - RAD-DI8-IFS - 2901539



Radioline - I/O extension module, 8 digital inputs (0 ... 30.5 V DC) or 2 pulse inputs up to 100 Hz

I/O extension module - RAD-DO8-IFS - 2902811



Radioline - I/O extension module, 8 digital transistor outputs (30.5 V DC/200 mA)

I/O extension module - RAD-AI4-IFS - 2901537



Radioline - I/O extension module, 4 analog current inputs (0/4 mA ... 20 mA)

I/O extension module - RAD-AO4-IFS - 2901538



Radioline - I/O extension module, 4 analog current or voltage outputs (0/4 mA ... 20 mA, 0 V ... 10 V)

I/O extension module - RAD-PT100-4-IFS - 2904035



Radioline - I/O extension module, 4 Pt 100 inputs (-50°C ... +250°C / -58 °F ... 482 °F)
