

## Wireless module - RAD-ISM-2400-REP-SET-BD-BUS - 2885650

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Bidirectional, wireless, 2400 MHz transmission system, for overcoming large obstacles and distances, comprises three transceivers (transmitters and receivers)

### Product Description

To overcome large obstacles (e.g. mountain peaks), or to increase the range, so-called repeaters can be used. Repeaters are simple transceivers with a special hopkey.

### Your advantages

- ✓ No parameterization or programming required
- ✓ Up to eight I/O extension modules can be connected via bus foot
- ✓ License-free 2.4 GHz ISM band
- ✓ Trusted Wireless technology with frequency hopping method



### Key Commercial Data

Packing unit	1 pc
Weight per Piece (excluding packing)	615.100 g
Custom tariff number	85176200
Country of origin	Canada

### Technical data

#### Dimensions

Width	22.5 mm
Height	99 mm
Depth	114.5 mm

#### Ambient conditions

Ambient temperature (operation)	-20 °C ... 65 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C

#### Wireless set

Set contents	3 transceivers
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## Technical data

### Wireless path

Direction	Bi-directional
Frequency range	2.4032 GHz ... 2.4799 GHz
Transmission power	10 mW
Channel distance	500 kHz
Number of channel groups	7
Number of channels per group	22

### Analog input

Description of the input	Current input (analog input)
Current input signal	4 mA ... 20 mA
Input resistance current input	< 170 $\Omega$

### Digital input

Switching threshold "0" signal, voltage	max. 1.5 V DC
Switching threshold "1" signal voltage	min. 5 V DC

### Analog output

Output name	Current output
Current output signal	4 mA ... 20 mA
Load/output load current output	700 $\Omega$ (at $U_B = 24$ V, $R_B = [U_B - 10$ V] / 20 mA)

### Digital output

Output name	2 x relay output + 1 x RF link
Contact type	3 floating N/O contacts
Contact material	Ag, gold-plated
Maximum switching voltage	30 V DC
	30 V AC
Limiting continuous current	0.5 A

### Supply

Supply voltage	24 V DC -50 % / +25 %
Supply voltage range	12 V DC ... 30 V DC
Typical current consumption	75 mA
Max. current consumption	150 mA

### General

Mounting position	any
Assembly instructions	on standard DIN rail NS 35 in accordance with EN 60715
Housing material	Polyamide PA non-reinforced

### Connection data

## Wireless module - RAD-ISM-2400-REP-SET-BD-BUS - 2885650

### Technical data

#### Connection data

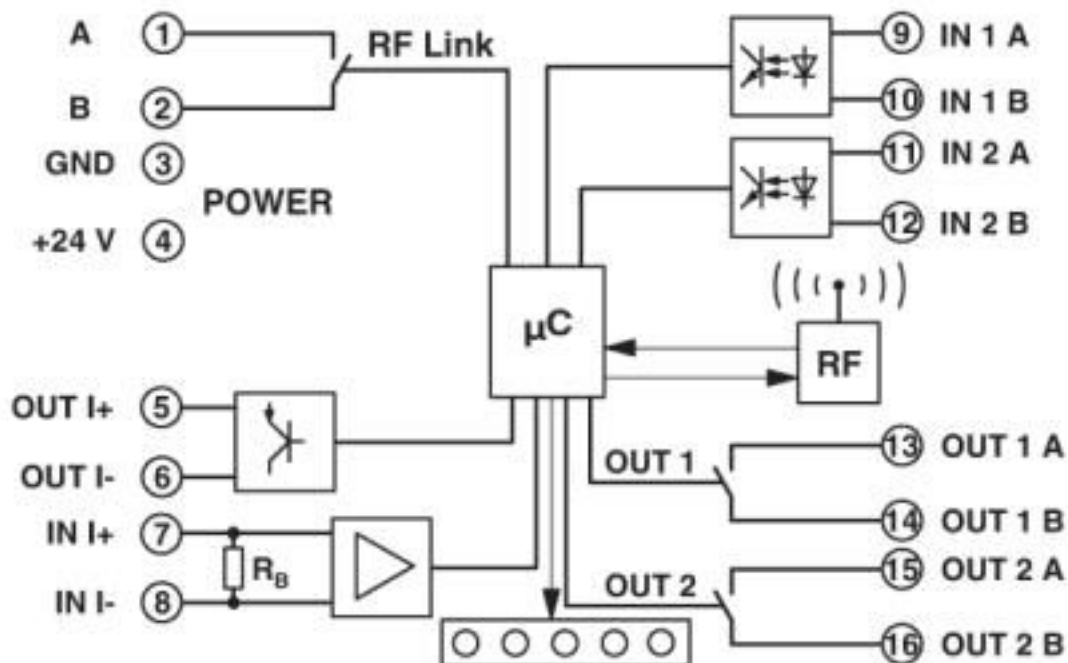
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	4 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	14
Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3

#### Standards and Regulations

Electromagnetic compatibility	Conformance with R&TTE directive 1999/5/EC
Channel distance	500 kHz

### Drawings

Block diagram



## Wireless module - RAD-ISM-2400-REP-SET-BD-BUS - 2885650

### Classifications

#### eCl@ss

eCl@ss 4.0	27250312
eCl@ss 4.1	27250312
eCl@ss 5.0	27242208
eCl@ss 5.1	27242208
eCl@ss 6.0	27242208
eCl@ss 7.0	27242208
eCl@ss 8.0	19179290
eCl@ss 9.0	19179290

#### ETIM

ETIM 2.0	EC000310
ETIM 3.0	EC000310
ETIM 4.0	EC000310
ETIM 5.0	EC000310

#### UNSPSC

UNSPSC 6.01	30211506
UNSPSC 7.0901	43223108
UNSPSC 11	39121008
UNSPSC 12.01	43223108
UNSPSC 13.2	43223108

### Accessories

#### Accessories

#### Antenna

Antenna - RAD-ISM-2400-ANT-OMNI-2-1 - 2867461



Omnidirectional antenna, 2.4 GHz, gain: 2 dBi, polarization: linear, opening angle: h/v 360°/75°, degree of protection: IP65, connection: MCX (male), incl. 1.5 m / 5 ft. connecting cable and mounting bracket for wall mounting

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### Accessories

#### Antenna - RAD-ISM-2400-ANT-VAN- 3-1-MCX - 2885702



Omnidirectional antenna with protection against vandalism, 2.4 GHz, gain: 3 dBi, polarization: linear, opening angle: h/v 360°/85°, degree of protection: IP55, connection: MCX (male), for control cabinet mounting (optional wall mounting), incl. 1.5 m / 5 ft. connecting cable

#### Antenna - RAD-ISM-2400-ANT-OMNI-6-0 - 2885919



Omnidirectional antenna, 2.4 GHz, gain: 6 dBi, polarization: linear, opening angle: h/v 360°/30°, degree of protection: IP67, seawater-resistant, connection: N (female), incl. mounting bracket and mast clamps, ATEX and IECEx approval

#### Antenna - RAD-ISM-2400-ANT-PAN- 8-0 - 2867610



Directional antenna, 2.4 GHz, gain: 8 dBi, polarization: linear, opening angle: h/v 75°/70°, degree of protection: IP55, connection: SMA (female), incl. mounting bracket and mast clips

#### Antenna - RAD-ISM-2400-ANT-PAR-19-0 - 2867885



Directional antenna, 2.4 GHz, gain: 19 dBi, polarization: linear, opening angle: h/v 17°/11°, degree of protection: IP65, connection: N (female), incl. mounting bracket and mast clips

### Coaxial adapter

#### Adapter - RAD-ADP-N/F-N/F - 2867843



Antenna adapter for control cabinet feed-through, frequency range: 0.3 GHz ... 6 GHz, degree of protection: IP65, connection: 2 x N (female)

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### Accessories

#### Antenna splitter - RAD-ISM-2400-SPL-4-SMA - 2867856



4-way distributor for antenna signals (antenna splitter), connection SMA (female) on the 4 upper ends and SMA (male) on the lower end

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#### Antenna splitter - RAD-ISM-2400-SPL-2-SMA - 2885595



2-way distributor for antenna signals (antenna splitter), connection SMA (female) on the two upper ends and SMA (male) on the lower end

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#### Adapter - RAD-ADP-N/M-SMA/F - 2917036



Antenna adapter, frequency range: 0.3 GHz ... 6 GHz, connection: N (male) -> SMA (female)

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### Coaxial cable

#### Antenna cable - RAD-CAB-EF393- 3M - 2867649



Antenna cable, outside diameter: 10 mm (0.4 in.), inner conductor: stranded, attenuation: 1.0 / 1.8 / 3.1 dB at 0.9 / 2.4 / 5.8 GHz, connection: 2 x N (male), cable length: 3 m (10 ft.)

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#### Antenna cable - RAD-CAB-EF393- 5M - 2867652



Antenna cable, outside diameter: 10 mm (0.4 in.), inner conductor: stranded, attenuation: 1.6 / 2.9 / 5.0 dB at 0.9 / 2.4 / 5.8 GHz, connection: 2 x N (male), cable length: 5 m (16 ft.)

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### Accessories

#### Antenna cable - RAD-CAB-EF393-10M - 2867665



Antenna cable, outside diameter: 10 mm (0.4 in.), inner conductor: stranded, attenuation: 2.9 / 5.6 / 9.9 dB at 0.9 / 2.4 / 5.8 GHz, connection: 2 x N (male), cable length: 10 m (32 ft.)

#### Antenna cable - RAD-CAB-EF393-15M - 2885634



Antenna cable, outside diameter: 10 mm (0.4 in.), inner conductor: stranded, attenuation: 4.3 / 8.3 / 14.8 dB at 0.9 / 2.4 / 5.8 GHz, connection: 2 x N (male), cable length: 15 m (50 ft.)

#### Antenna cable - RAD-PIG-EF316-MCX-SMA - 2867678



Antenna cable, external diameter: 3.2 mm (0.126 in.), inner conductor: flexible, attenuation: 1.0 / 1.7 / 2.7 dB at 0.9 / 2.4 / 5.8 GHz, connection: MCX (male) -> SMA (male), cable length: 1 m (4 ft.)

#### Antenna cable - RAD-PIG-EF316-MCX-N - 2867681



Antenna cable, outside diameter: 3.2 mm (0.126 in.), inner conductor: stranded, attenuation: 0.6 / 1.0 / 1.4 dB at 0.9 / 2.4 / 5.8 GHz, connection: MCX (male) -> N (male), cable length: 0.5 m (1.6 ft.)

#### Antenna cable - RAD-PIG-EF316-N-SMA - 2867694



Antenna cable, outside diameter: 3.2 mm (0.126 in.), inner conductor: stranded, attenuation: 0.5 / 0.7 / 0.9 dB at 0.9 / 2.4 / 5.8 GHz, connection: SMA (male) -> N (female), cable length: 0.3 m (1 ft.)

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### Accessories

Antenna cable - RAD-PIG-EF316-N-N - 2867704



Adapter cable, 50 cm pigtail, N (male) -> N (female), 50  $\Omega$  impedance

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Antenna cable - RAD-PIG-EF316-SMA-SMA - 2885618



Adapter cable, 50 cm pigtail, SMA (male) -> SMA (male), 50  $\Omega$  impedance

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### Configuration memory

Hopkey - RAD-ISM-2400-HOP-EU-10 - 2867898



The HOPKEY contains information such as the transmission frequencies used and the hop sequence. This information is required when installing an additional transceiver/repeater in an existing bidirectional RAD Line IO system, for example.

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### Extension module

Extension module - RAD-IN-4A-I - 2867115



Analog extension module with 4 analog current inputs 4 mA ... 20 mA

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Extension module - RAD-OUT-4A-I - 2867128



Analog extension module with 4 analog current outputs 4 mA ... 20mA



## Wireless module - RAD-ISM-2400-REP-SET-BD-BUS - 2885650

### Accessories

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#### Extension module - RAD-IN-8D - 2867144



Digital extension module with 8 digital inputs

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#### Extension module - RAD-OUT-8D-REL - 2867157



Digital extension module with 8 digital outputs

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#### Extension module - RAD-IN+OUT-2D-1A-I - 2867322



Analog /digital module for 2 digital inputs/outputs and 1 analog input/output

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#### Extension module - RAD-IN-2D-CNT - 2885223



Digital extension module with 2 digital inputs for measuring pulses and frequencies

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#### Extension module - RAD-OUT-2D-CNT - 2885236



Digital extension module with 2 digital outputs for output of pulses and frequencies

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### Mounting material

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### Accessories

Weather protection tape - RAD-TAPE-SV-25-10 - 2885812



Vulcanizing sealing tape for external protection of adapters, antenna splitters, cable connections, etc. against the effects of weather, roll length: 10 m

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### Solar set

Solar system - RAD-SOL-SET-24-100 - 2885472



24 V / 100 Wp solar system for worldwide use. Consisting of a solar panel, prewired control cabinet with charge controller, solar batteries, fuses, surge protection and assembly material (including mast clips).

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Solar system - RAD-SOL-SET-24-200 - 2917722



24 V / 200 Wp solar system for worldwide use. Consisting of a solar panel, prewired control cabinet with charge controller, solar battery, fuses, surge protection and assembly material (including mast clips).

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### Surge protection for transceiver systems

Surge protection device - CN-LAMBDA/4-5.9-BB - 2838490



Attachment plug with Lambda/4 technology as surge protection for coaxial signal interfaces. Connection: N connectors socket-socket

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Surge protection device - CN-LAMBDA/4-5.9-SB - 2800023



Attachment plug with Lambda/4 technology as surge protection for coaxial signal interfaces. Connection: N connectors plug/socket

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### Accessories

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Surge protection device - CN-LAMBDA/4-2.0-BB - 2818863



Attachment plug with Lambda/4 technology as surge protection for coaxial signal interfaces. Connection: N connectors socket-socket

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Surge protection device - CN-LAMBDA/4-2.0-SB - 2818876



Attachment plug with Lambda/4 technology as surge protection for coaxial signal interfaces. Connection: N connectors plug/socket