

# RAD-900-IFS - Wireless module

2901540

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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

## Product description

Radioline is the new wireless system for large systems. Special features include extremely easy assignment of inputs and outputs by simply turning the thumbwheel - without any programming. Radioline transmits I/O signals (I/O mode) or serial data (serial mode) and is therefore very versatile. Alternatively, I/O signals can now also be connected to controllers directly using the Modbus protocol (PLC/Modbus RTU mode). In addition, you can implement various network structures: from a simple point-to-point connection to complex mesh networks. Thanks to the latest Trusted Wireless technology, Radioline is the ideal choice for industrial use.

## Your advantages

- Quick and easy startup without programming
- High degree of reliability due to Trusted Wireless 2.0 technology (AES encryption, frequency hopping method, and coexistence management)
- Mesh networks of up to 250 devices
- Extended temperature range of -40 °C ... +70 °C
- Range of several kilometers thanks to adjustable data rates for the wireless interface
- Integrated RS-232/RS-485 interface

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## Technical data

### Notes

#### Trade restriction

CE note	The products are offered exclusively for export outside the EU and the European Economic Area.
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### Product properties

Product type	Wireless module
Operating mode	PLC / Modbus RTU dual mode (Activation and configuration via PSI-CONF software)
MTTF	20.4 Years

#### Insulation characteristics

Overvoltage category	II
Degree of pollution	2

### Electrical properties

Transient surge protection	Yes
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#### Supply

Supply voltage	24 V DC
Supply voltage range	10.8 V DC ... 30.5 V DC
Max. current consumption	328 mA (@24 V DC)
Nominal power consumption	1.7 W (30 dBm)
Power consumption	8.4 W (peak; 30 dBm)

### Output data

#### Digital

Output name	RF link relay output
Number of outputs	1
Contact switching type	Changeover contact
Contact material	PdRu, gold-plated
Maximum switching voltage	30 V AC/DC
Max. switching current	500 mA
Electrical service life	5x 10 <sup>5</sup> switching cycles with 0.5 A at 30 V DC

#### Analog

Output name	RSSI voltage output
Number of outputs	1
Voltage output signal	0 V ... 3 V

### Connection data

Connection method	Screw connection
Stripping length	7 mm

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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

## Interfaces

### Wireless

Range	± 32 km (The range may be considerably above or below that stated, and depends on the environment, antenna technology, and the product used)
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### Serial: RS-232

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
Connection method	COMBICON plug-in screw terminal block D-SUB-9 female connector
Connection technology	3-conductor

### 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 / 187.5 kbps
Connection method	COMBICON plug-in screw terminal block
Connection technology	2-conductor
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)
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### Wireless

Interface description	Trusted Wireless
Direction	Bi-directional
Frequency	900 MHz
Frequency range	902 MHz ... 928 MHz
Transmission power	max. 1 W (adjustable)
Data rate	16 kbps (adjustable) 125 kbps (adjustable) 250 kbps (adjustable) 500 kbps (adjustable)
Minimum receiver sensitivity	-112 dBm (16 kbps) -105 dBm (125 kbps) -102 dBm (250 kbps) -95 dBm (500 kbps)

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Antenna connection method	RSMA (female)
Security	128-bit data encryption

## Functions

Wireless licenses	Americas, more countries in E-shop
Country support	USA (FCC, Part 15.247, ID: SGV-SHR-900)
	Canada (IC, RSS210, ID: 4720C-SHR900)
	Mexico (IFT, ID: RCPHRA17-1113)
	Chile
	Argentina

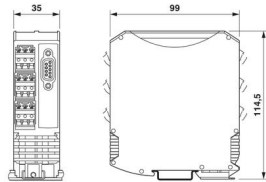
## Wireless

Frequency band	900 MHz
Wireless standard	Trusted Wireless

## Signaling

Status display	Green LED (supply voltage, PWR)
	Green LED (bus communication, DAT)
	Red LED (periphery error, ERR)
	3x green, 1x yellow LED (LED bar graph receive quality, RSSI)
	Green LED (receive data, RX)
	Green LED (transmit data, TX)

## Dimensions

Dimensional drawing	
Width	35 mm
Height	116 mm
Depth	114.5 mm

## Material specifications

Color	green
Flammability rating according to UL 94	V0
Housing material	PA 6.6-FR

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 70 °C
	-40 °F ... 158 °F
Ambient temperature (storage/transport)	-40 °C ... 85 °C

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	-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

### Conformity/Approvals

Conformance	FCC Directive, Part 15.247
	ISC Directive RSS 210
UL, USA	Class I, Zone 2, AEx nA nC IIC T4
UL, USA / Canada	Class I, Div. 2, Groups A, B, C, D
UL, Canada	Class I, Zone 2, Ex nA nC nL IIC T4 Gc X
CSA	CSA C22.2

## EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2004/108/EC
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## Standards and regulations

Standard designation	NOM
Note	IFT RCPHRA17-1113

## Mounting

Mounting type	DIN rail mounting
Assembly instructions	on standard DIN rail NS 35 in accordance with EN 60715

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