

## Wireless module - RAD-900-IFS - 2901540

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Bidirectional, Radioline 900 MHz transceiver for wireless transmission of serial and I/O data

### 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.

### Product Features

- ✓ Extended temperature range, -40°C ... +70°C
- ✓ Range of several kilometers thanks to adjustable data rates for the wireless interface (16 ... 500 kbps)
- ✓ Integrated RS-232/RS-485 interface
- ✓ 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



### Key Commercial Data

Packing unit	1 pc
Weight per Piece (excluding packing)	350.0 g
Custom tariff number	85176200
Country of origin	United States

### Technical data

#### Note

Trade restriction	The products are offered exclusively for export outside the EU and the European Economic Area.
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### Dimensions

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## Technical data

### Dimensions

Width	35 mm
Height	99 mm
Depth	114.5 mm

### 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
	-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

Overvoltage category	II
Assembly instructions	on standard DIN rail NS 35 in accordance with EN 60715
Pollution degree	2
Housing material	PA 6.6-FR
Flammability rating according to UL 94	V0
Export note	The products are offered exclusively for export outside the European Economic Area (EEA).

### Supply

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)
Transient surge protection	Yes

### Wireless interface

Antenna connection	RSMA (female)
Direction	Bi-directional
Frequency	900 MHz
Frequency range	902 MHz ... 928 MHz
Data rate	16 kbps (adjustable)
	125 kbps (adjustable)
	250 kbps (adjustable)

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### Technical data

#### Wireless interface

	500 kbps (adjustable)
Receiver sensitivity	-112 dBm (16 kbps)
	-105 dBm (125 kbps)
	-102 dBm (250 kbps)
	-95 dBm (500 kbps)
Transmission power	max. 1 W (adjustable)
Range	± 32 km (The range may be considerably above or below that stated, and depends on the environment, antenna technology, and the product used)
Security	128-bit data encryption

#### Serial interface

Interface 1	RS-232
Connection method	COMBICON plug-in screw terminal block
	D-SUB 9 (socket)
	3-conductor
Transmission speed	0.3 ... 115.2 kbps
Interface 2	RS-485
Connection method	COMBICON plug-in screw terminal block
	2-wire
Termination resistor	390 Ω (switchable via DIP switches)
	150 Ω (switchable via DIP switches)
	390 Ω (switchable via DIP switches)
Transmission speed	0.3 ... 115.2 kbps

#### RSSI output

Number of outputs	1
Voltage output signal	0 V ... 3 V

#### RF link relay output

Number of outputs	1
Contact type	PDT
Contact material	PdRu, gold-plated
Maximum switching voltage	30 V AC/DC
Max. switching current	500 mA
Electrical service life	5 x 10 <sup>5</sup> cycles with 0.5 A @ 30 V DC

#### Connection data

Connection method	Screw connection
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>

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### Technical data

#### Connection data

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
Stripping length	7 mm
Tightening torque	0.6 Nm
Screw thread	M3

#### Status indicator

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

#### Approvals and conformance

Conformance	FCC Directive, Part 15.247
UL, USA / Canada	Class I, Div. 2, Groups A, B, C, D
Standards/regulations	EN 300328
	EN 61000-6-2
	EN 61000-6-4
	EN 50371
	EN 60950-1

#### Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2004/108/EC
Standards/regulations	EN 300328
	EN 61000-6-2
	EN 61000-6-4
	EN 50371
	EN 60950-1
Shock	16g, 11 ms
Flammability rating according to UL 94	V0
Interface description	Trusted Wireless
Security	128-bit data encryption
Vibration (operation)	in accordance with IEC 60068-2-6: 5g, 10 Hz ... 150 Hz
Conformance	FCC Directive, Part 15.247
	ISC Directive RSS 210

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## Technical data

### Standards and Regulations

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

## Classifications

### eCl@ss

eCl@ss 4.0	27230207
eCl@ss 4.1	27230207
eCl@ss 5.0	27230207
eCl@ss 5.1	27242208
eCl@ss 6.0	27242208
eCl@ss 7.0	27242208
eCl@ss 8.0	19179290

### ETIM

ETIM 3.0	EC001423
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

## Approvals

### Approvals

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#### Approvals

UL Listed / cUL Listed / cULus Listed

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#### Ex Approvals

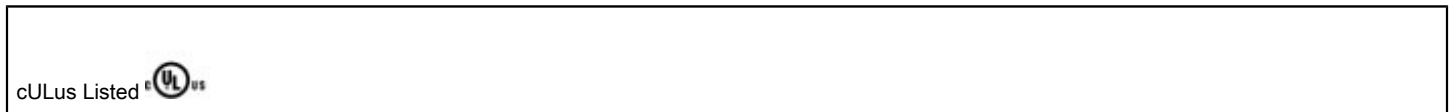
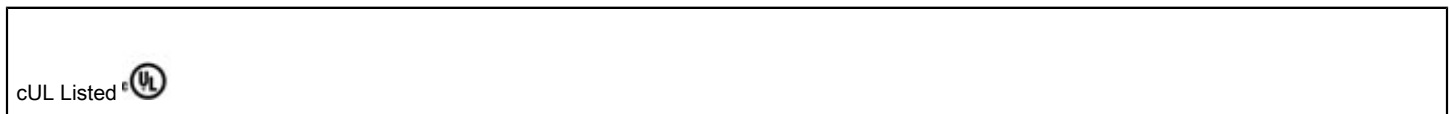
UL Listed / cUL Listed / cULus Listed

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## Approvals

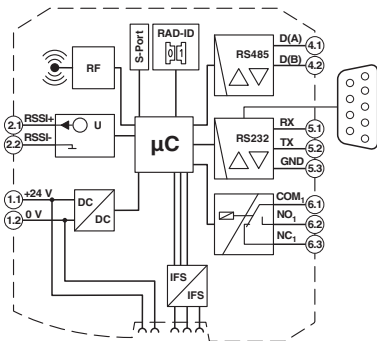
Approvals submitted

## Approval details



## Drawings

Block diagram



Dimensional drawing

