

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

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Digital I/O extension module with 8 digital inputs (0 ... 30.5 V DC) or 2 pulse inputs (0 ... 100 Hz), with screw connection, including DIN rail connector

### Product Features

- ✓ Extended temperature range, -40°C ... +70°C
- ✓ Easy module replacement even during operation (hot swap)
- ✓ 8 digital inputs (0 ... 30.5 V DC)
- ✓ 2 pulse inputs (0 ... 100 Hz)
- ✓ Suitable for ATEX zone 2
- ✓ Easy startup via thumbwheel



### Key Commercial Data

Packing unit	1 pc
Weight per Piece (excluding packing)	200.0 g
Custom tariff number	85389091
Country of origin	Germany

### Technical data

#### Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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#### Dimensions

Width	17.5 mm
Height	99 mm
Depth	114.5 mm

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## Technical data

### 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
Mounting position	any
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
MTTF	1624 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))
	612 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day))
	233 Years (Telcordia standard, temperature 40 °C, operating cycle 100 % (7 days a week, 24 hours a day))

### Supply

Supply voltage range	19.2 V DC ... 30.5 V DC (TBUS)
Max. current consumption	≤ 18 mA (At 24 V DC, at 25°C)
Transient surge protection	Yes

### Digital inputs

Description of the input	Digital input
Number of inputs	8
Switching level "1" signal	10 V DC ... 30.5 V DC
Switching level "0" signal	0 V DC ... 4 V DC
Input frequency	≤ 10 Hz (Static mode)
Min. voltage input signal	0 V DC
Max. voltage input signal	30.5 V DC

### Counter inputs

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### Technical data

#### Counter inputs

Number of channels	2
Switching level "1" signal	10 V DC ... 30.5 V DC
Switching level "0" signal	0 V DC ... 4 V DC
Input frequency	< 100 Hz (Pulse counter mode)
Pulse length	≥ 5 ms (Pulse/pause ratio 1:1)
Process data channel	32 Bit (per channel)

#### Electrical isolation

Digital I/O	50 V (Rated insulation voltage (between the channel groups 1...4 and 5...8/TBUS supply, reinforced insulation according to EN 61010))
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#### Test voltage

Digital I/O	1.5 kV AC (50 Hz, 1 min.)
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#### 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>
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)
	Green LED (counter mode, CNT)
	Yellow LED (digital input, DI1)
	Yellow LED (digital input, DI2)
	Yellow LED (digital input, DI3)
	Yellow LED (digital input, DI4)
	Yellow LED (digital input, DI5)
	Yellow LED (digital input, DI6)
	Yellow LED (digital input, DI7)
	Yellow LED (digital input, DI8)

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## Technical data

### Approvals and conformance

Conformance	CE-compliant
IECEX	Ex nA IIC T4 Gc
UL, USA / Canada	UL 508 Listed
Standard designation	EMC Directive 2004/108/EC
Standards/regulations	EN 61000-6-2
Standard designation	EMC Directive 2004/108/EC
Standards/regulations	EN 61000-6-4
Standard designation	Ex Directive (ATEX)
Standards/regulations	EN 60079-0
Standard designation	Ex Directive (ATEX)
Standards/regulations	EN-60079-15

### Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2004/108/EC (valid until 19.04.2016) / 2014/30/EU (valid from 20.04.2016)
Standard designation	EMC Directive 2004/108/EC
Standards/regulations	EN 61000-6-2
Standard designation	EMC Directive 2004/108/EC
Standards/regulations	EN 61000-6-4
Standard designation	Ex Directive (ATEX)
Standards/regulations	EN 60079-0
Standard designation	Ex Directive (ATEX)
Standards/regulations	EN-60079-15
Shock	16g, 11 ms
Noise emission	EN 61000-6-4
Noise immunity	EN 61000-6-2
Flammability rating according to UL 94	V0
Vibration (operation)	in accordance with IEC 60068-2-6: 5g, 10 Hz ... 150 Hz
Conformance	CE-compliant
ATEX	# II 3 G Ex nA IIC T4 Gc X
IECEX	Ex nA IIC T4 Gc
UL, USA / Canada	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T4A
	Class I, Zone 2, IIC T4

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## 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	27242604

### ETIM

ETIM 3.0	EC001423
ETIM 4.0	EC000310
ETIM 5.0	EC001599

### 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 / EAC / cULus Listed

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#### Ex Approvals

ATEX / IECEx / UL Listed / cUL Listed / cULus Listed

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#### Approvals submitted

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#### Approval details

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## Approvals

UL Listed

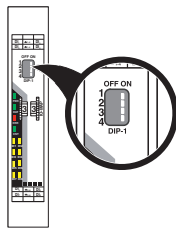
cUL Listed

EAC

cULus Listed

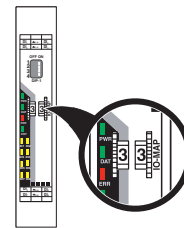
## Drawings

Schematic diagram



DIP switches

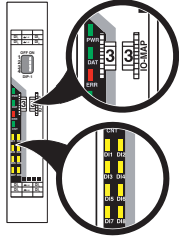
Schematic diagram



Thumb wheel

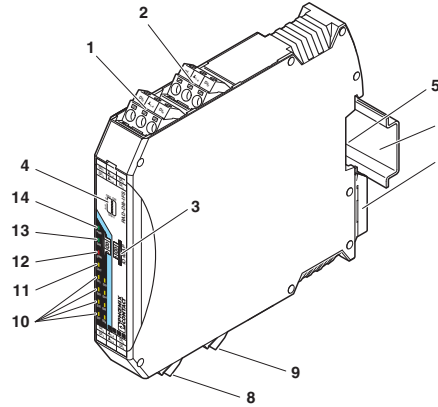
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Schematic diagram



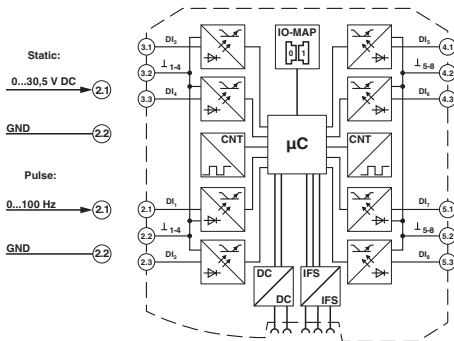
LED indicators

Schematic diagram

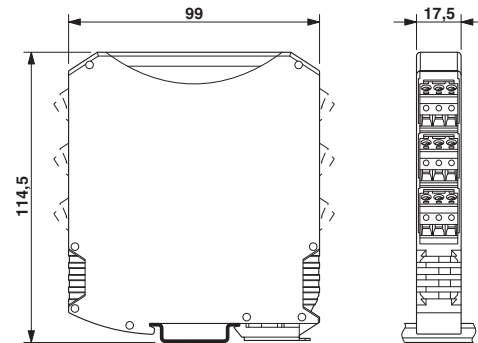


Function elements

Block diagram

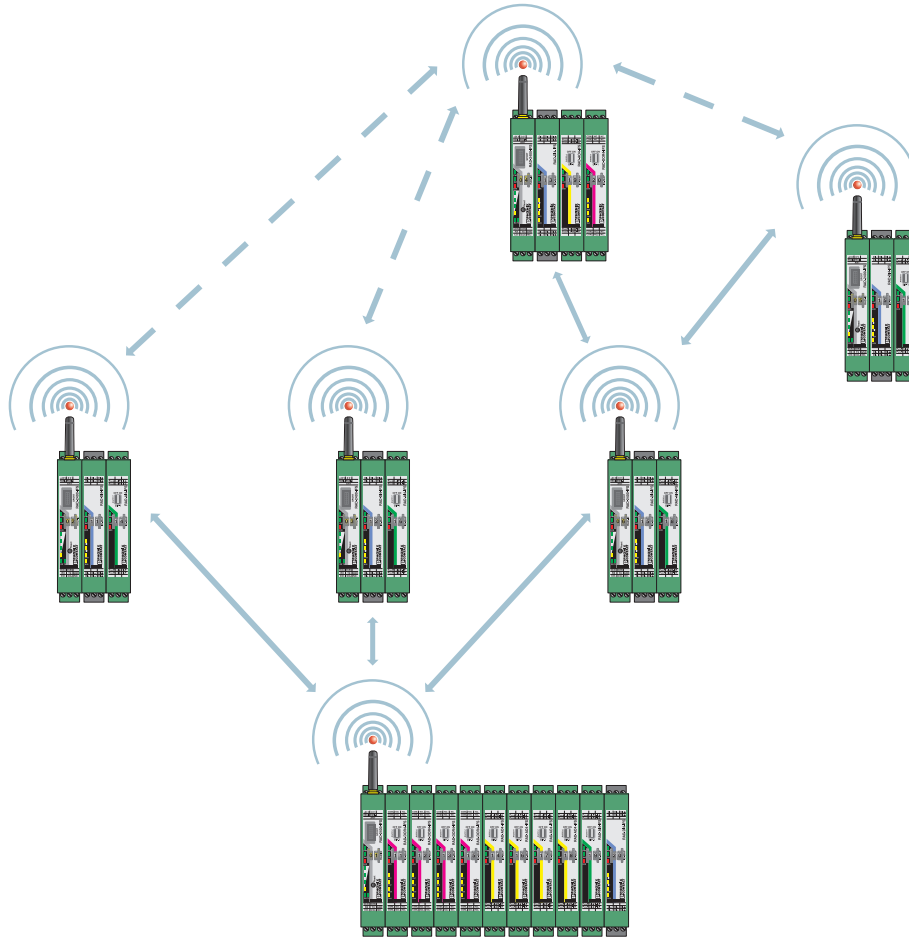


Dimensional drawing



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Application drawing

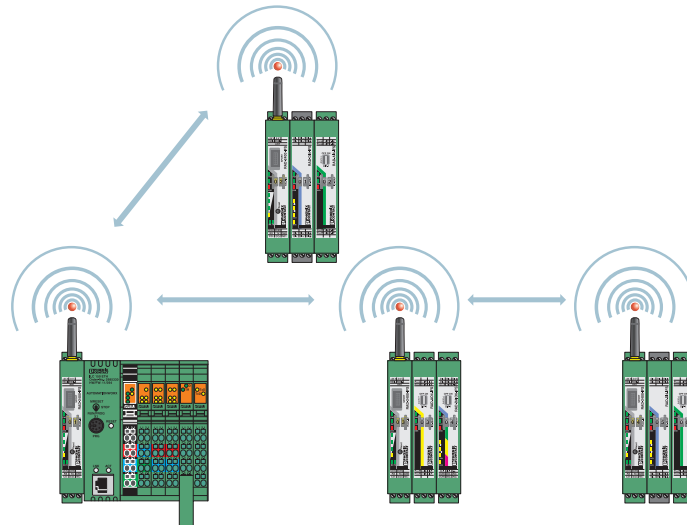


Wireless module in I/O data mode



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

Application drawing



Wireless module in PLC/Modbus RTU mode