

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

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Analog extension module with 4 analog current inputs (0/4 mA ... 20 mA), with screw connection, incl. DIN rail connector

Product Features

- Channel-to-channel electrical isolation
- Extended temperature range, -40°C ... +70°C
- Easy module replacement even during operation (hot swap)
- Suitable for ATEX zone 2
- Easy startup via thumbwheel



Key Commercial Data

Packing unit	1 pc
Weight per Piece (excluding packing)	220.0 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

Ambient conditions

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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

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	771 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))
	351 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day))
	136 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	≤ 120 mA (At 24 V DC, at 25°C)
Transient surge protection	Yes

Analog inputs

Number of inputs	4
Current input signal	0 mA ... 20 mA (can be set via DIP switches)
	4 mA ... 20 mA (can be set via DIP switches)
Max. current input signal	22 mA
Input resistance current input	< 70 Ω
Precision	≤ 0.02 % (at 25 °C)
Temperature coefficient, typical	0.0025 %/K (at -40 °C ... +70 °C)
Supply voltage	≥ 12 V DC (For passive sensors (via terminal PWR1, +I1))
Resolution	16 (Bit)

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Analog inputs

Protective circuit	Overload protection, short-circuit protection
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Electrical isolation

Analog I/O	50 V (Rated insulation voltage (in each case between the TBUS analog outputs / supply, reinforced insulation according to EN 61010))
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Test voltage

Analog 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 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)
	Green LED (bus communication, DAT)
	Red LED (periphery error, ERR)

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

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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

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	27242601

ETIM

ETIM 3.0	EC001423
ETIM 4.0	EC000310
ETIM 5.0	EC001596

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Classifications

UNSPSC

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

Approvals

Approvals

Approvals


UL Listed / cUL Listed / EAC / cULus Listed


Ex Approvals

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

Approvals submitted

Approval details

UL Listed 

cUL Listed 

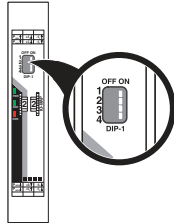
EAC

cULus Listed 

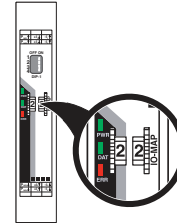
Drawings

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Schematic diagram



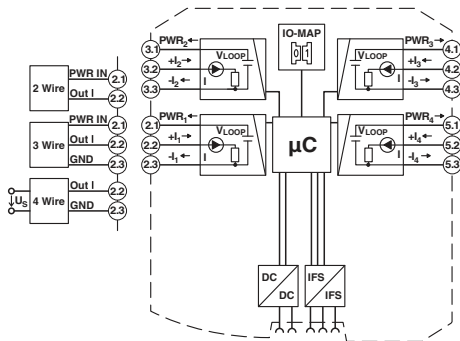
Schematic diagram



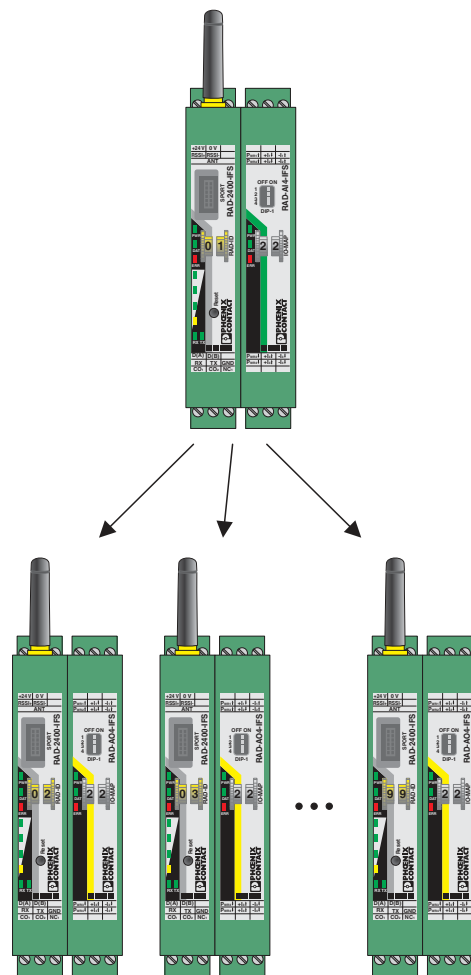
DIP switches

Thumb wheel

Block diagram



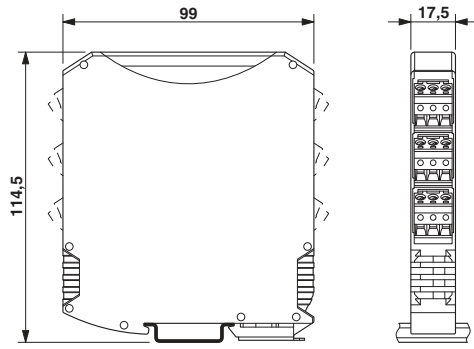
Functional drawing



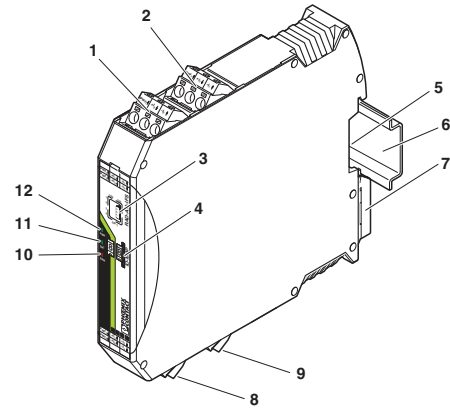
Assignment of analog inputs and analog outputs

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Dimensional drawing



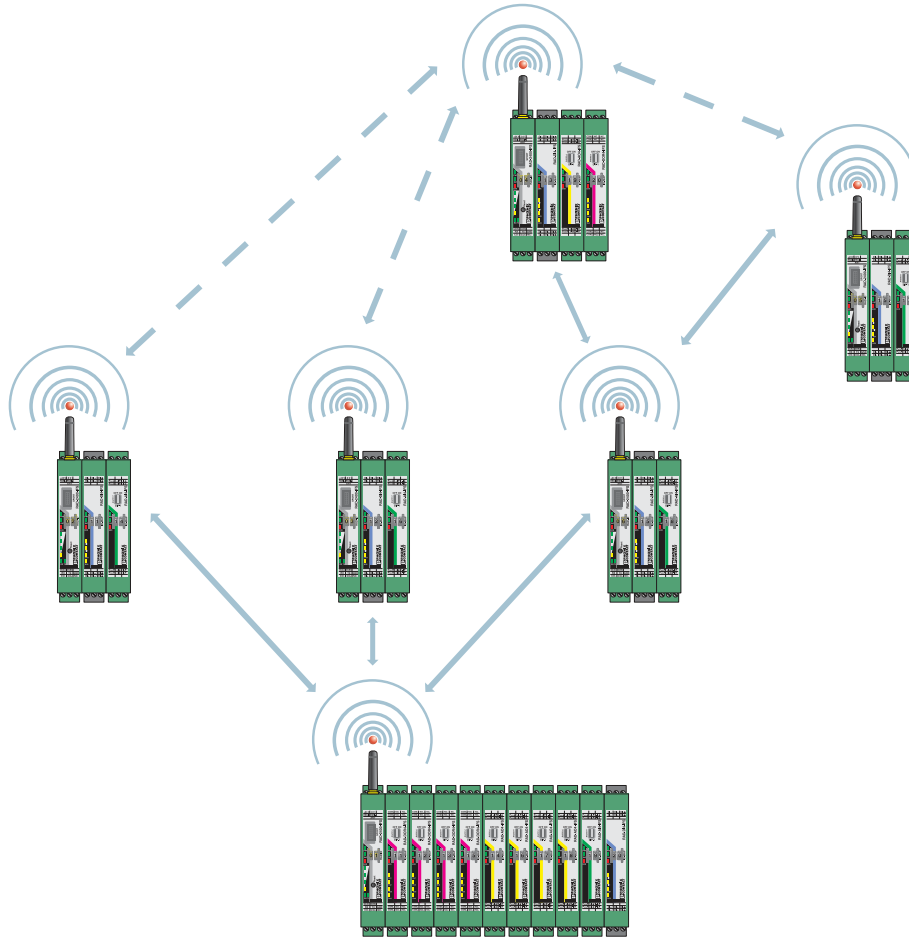
Schematic diagram



Function elements

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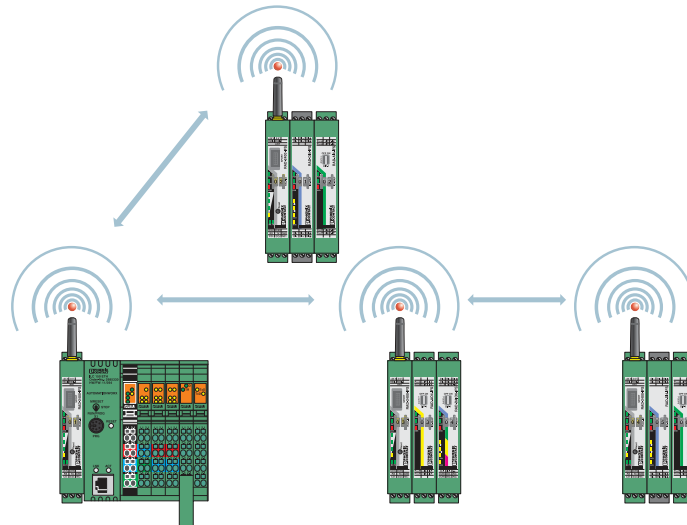
Application drawing



Wireless module in I/O data mode

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Application drawing



Wireless module in PLC/Modbus RTU mode