

I/O extension module - RAD-DAIO6-IFS - 2901533

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Analog/digital I/O extension module with 2 digital inputs/outputs (0...250 V AC/DC) and 1 analog input (0/4...20 mA) and output (0/4 ... 20 mA, 0...10 V), 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)
- Digital wide-range inputs/outputs (0 ...250 V AC/DC)
- Suitable for ATEX zone 2
- Easy startup via thumbwheel



Key commercial data

package_quantity	1
GTIN	4046356610216

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

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 70 °C (>55°C Derating)
Ambient temperature (operation)	-40 °F ... 158 °F (>131°F derating)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Ambient temperature (storage/transport)	-40 °F ... 185 °F
Permissible humidity (operation)	20 % ... 85 %
Permissible humidity (storage/transport)	20 % ... 85 %

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Ambient conditions

Altitude	2000 m
Vibration (operation)	In accordance with IEC 60068-2-6: 5 g, 10 Hz - 150 Hz
Shock	16 g, 11 ms

General

Surge voltage 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
Inflammability class according to UL 94	V0
MTTF	889 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))
MTTF	391 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day))
MTTF	151 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 (T-connector)
Max. current consumption	max. 95 mA (At 24 V DC, at 25°C)
Transient surge protection	Yes

Analog inputs

Number of inputs	1
Current input signal	0 mA ... 20 mA (can be set via DIP switches)
Current input signal	4 mA ... 20 mA (can be set via DIP switches)
Max. current input signal	22 mA
Input resistance current input	< 70 Ω
Input frequency	approx. 30 Hz
Precision	≤ 0.02 % (@25°C)
Temperature coefficient, typical	typ. 0.0025 %/K (At -40°C...+70°C)
Supply voltage	≥ 12 V DC (For passive sensors (via terminal PWR1, +11))
Resolution	16 (Bit)
Protective circuit	Overload protection, short-circuit protection

Digital inputs

Number of inputs	2
Switching level "1" signal	10 V AC/DC ... 50 V AC/DC (Low-voltage input)
Switching level "1" signal	50 V AC/DC ... 250 V AC/DC (High-voltage input)
Switching level "0" signal	0 V AC/DC ... 4 V AC/DC (Low-voltage input)
Switching level "0" signal	0 V AC/DC ... 20 V AC/DC (High-voltage input)
Input frequency	≤ 2 Hz

Analog outputs

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Analog outputs

Number of outputs	1
Voltage output signal	0 V ... 10 V
Max. voltage output signal	approx. 10.83 V
Load	≥ 10 kΩ
Precision	typ. 0.5 % (Voltage output)
Current output signal	0 mA ... 20 mA
Current output signal	4 mA ... 20 mA
Max. current output signal	approx. 21.67 mA
Load	≤ 500 Ω
Precision	≤ 0.02 % (@25°C)
Resolution	16 bit
Temperature coefficient, typical	typ. 0.0025 %/K (At -40°C...+70°C)
Behavior of the outputs (adjustable via DIP switch)	Hold / Reset
Protective circuit	Transient protection of outputs

Digital outputs

Number of outputs	2
Contact type	PDT
Contact material	AgSnO ₂
Maximum switching voltage	250 V AC
Maximum switching voltage	24 V DC
Min. switching current	≥ 10 mA
Max. switching current	2 A
Mechanical service life	1 x 10 ⁷ cycles
Electrical service life	2 x 10 ⁵ cycles (At 2 A, 250 V AC, cosφ 0.4)
Electrical service life	2 x 10 ⁵ cycles (At 1 A, 24 V DC, L/R = 48 ms)
Maximum switching frequency	2 Hz
Switching capacity	48 W (24 V DC)
Switching capacity	60 W (30 V DC)
Switching capacity	20 W (48 V DC)
Switching capacity	18 W (60 V DC)
Switching capacity	22 W (110 V DC)
Switching capacity	40 W (220 V DC)
Switching capacity	42 W (250 V DC)
Behavior of the outputs (adjustable via DIP switch)	Hold / Reset

Electrical isolation

Digital I/O	300 V (Rated insulation voltage (in each case between the digital inputs // digital outputs // TBUS supply, reinforced insulation according to EN 61010))
Analog I/O	50 V (Rated insulation voltage (in each case between the TBUS analog inputs / analog outputs / supply, reinforced insulation according to EN 61010))

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Electrical isolation

Digital/analog I/O	300 V (Rated insulation voltage (in each case between the digital inputs and outputs // analog inputs and outputs, reinforced insulation according to EN 61010))
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Test voltage

Digital I/O	2.5 kV AC (50 Hz, 1 min.)
Analog I/O	1.5 kV AC (50 Hz, 1 min.)

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 stranded min.	0.2 mm ²
Conductor cross section stranded max.	2.5 mm ²
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	14
Stripping length	7 mm
Tightening torque	0.6 Nm
Screw thread	M3

Status indicator

Status display	Green LED (supply voltage, PWR)
Status display	Green LED (bus communication, DAT)
Status display	Red LED (periphery error, ERR)
Status display	Yellow LED (digital input, DI1)
Status display	Yellow LED (digital input, DI2)
Status display	Yellow LED (digital output, DO1)
Status display	Yellow LED (digital output, DO2)

Approvals and conformance

Conformance	CE-compliant
ATEX	# II 3 G Ex nA nC IIC T4 Gc X
IECEX	Ex nA nC 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

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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	27242208

ETIM

ETIM 3.0	EC001423
ETIM 4.0	EC000310
ETIM 5.0	EC000310

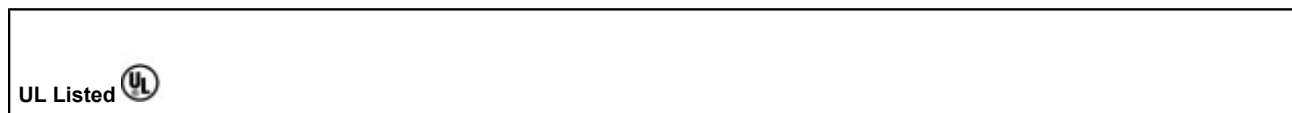
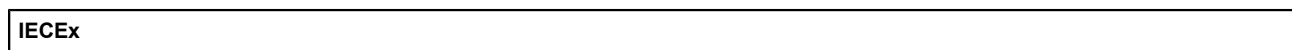
UNSPSC

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

approvals

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

Approval details



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accessories

Trusted Wireless device

RAD-2400-IFS - 2901541



RAD-900-IFS - 2901540



DIN rail connector

ME 17,5 TBUS 1,5/ 5-ST-3,81 GN - 2709561



Extension module

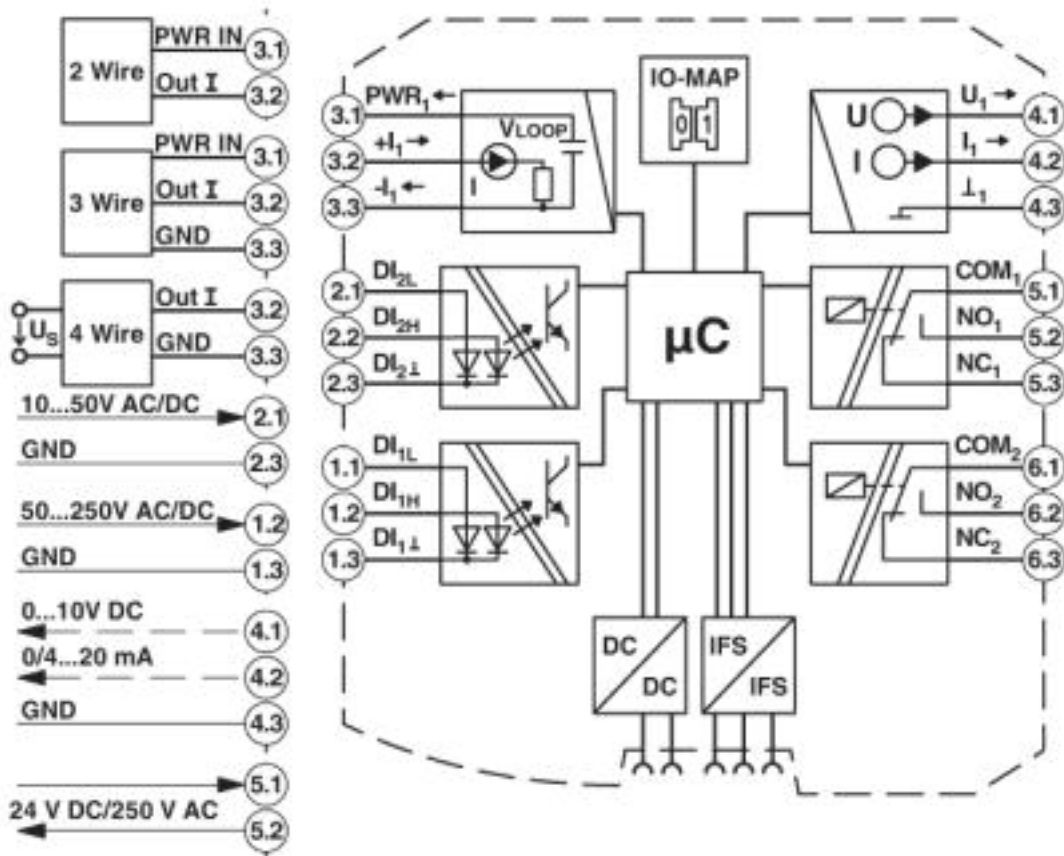
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Drawings

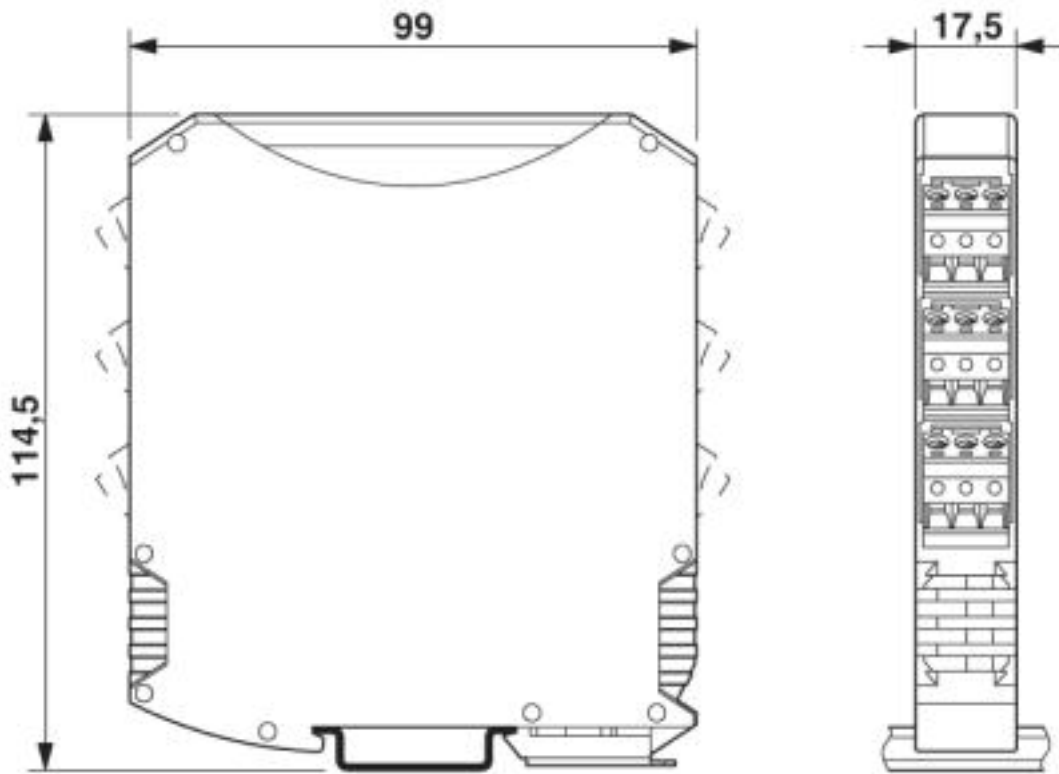
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Block diagram



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Dimensioned drawing



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