Input isolating amplifier - PI-EX-AIS - 2865696

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Ex-i analog input: Input isolating amplifier, HART. Sends 4-20 mA signals from externally supplied measuring transducers installed in Ex areas to a load in safe areas. Galvanic 3-way isolation (input / output / supply).

Key commercial data

package_quantity	1
GTIN	4046356483605

Technical data

Note:

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

Dimensions

Width	12.4 mm
Height	145 mm
Depth	147 mm

Ambient conditions

Ambient temperature (operation)	-20 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Permissible humidity (operation)	10 % ... 95 % (no condensation)
Degree of protection	IP20

Input data

Signal input	Intrinsically safe
Current input signal	0 mA ... 20 mA
Current input signal	4 mA ... 20 mA
Voltage drop	< 3.5 V

Output data

Signal output	Current output
Current output signal	0 mA ... 20 mA (active)
Current output signal	4 mA ... 20 mA (active)

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Output data

Current output signal	0 mA ... 20 mA (14 ... 26 V ext. source voltage)
Current output signal	4 mA ... 20 mA (14 ... 26 V ext. source voltage)
Load/output load current output	≤ 600 Ω (at 20 mA)
Load/output load current output	< 525 Ω (at 22.5 mA)
Output ripple	< 20 mV_{rms}
Output behavior in the event of an error	0 mA (Cable break in the input)
Output behavior in the event of an error	0 mA (Cable short-circuit in the input)

Power supply

Supply voltage range	19.2 V DC ... 30 V DC
Max. current consumption	< 36 mA (at 24 V)
Power consumption	< 0.9 W (at 24 V DC / 20 mA)

General

Maximum transmission error	< 0.2 % (of final value)
Transmission error, typical	< 0.1 % (of final value)
Maximum temperature coefficient	< 0.01 %/K
Step response (10-90%)	< 600 µs (for 4 mA ... 20 mA step)
Status display	Green LED (supply voltage, PWR)
Inflammability class according to UL 94	V0
Pollution degree	2
Surge voltage category	II
Housing material	PBT and polyamide PA non-reinforced
Color	green
Name	Input/output/power supply
Electrical isolation	300 V_{rms} (Rated insulation voltage (surge voltage category II; pollution degree 2, safe isolation as per EN 61010-1))
Electrical isolation	2.5 kV (50 Hz, 1 min., test voltage)
Name	Input/output
Electrical isolation	375 V (Peak value in accordance with EN 60079-11)
Name	Input/power supply
Electrical isolation	375 V (Peak value in accordance with EN 60079-11)
Conformance	CE-compliant, additionally EN 61326
ATEX	# II (1) G [Ex ia] IIC
ATEX	# II (1) D [Ex iaD]
ATEX	# II 3 (1) G Ex nA [ia] IIC T4
Functional safety (SIL)	SIL 2 according to EN 61508

Data communication (bypass)

HART function	Yes
Protocols supported	HART

Safety characteristic data

Integrity requirement	IEC 61508 - Low demand

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Safety characteristic data

Equipment type	Type A
Safety Integrity Level (SIL)	Up to 2
Safe Failure Fraction (SFF)	90.5 %
λ_{SU}	1.23 x 10^{-7} (123 FIT)
λ_{SD}	0
λ_{DU}	3.4 x 10^{-8} (34 FIT)
λ_{DD}	2.05 x 10^{-7} (205 FIT)
Probability of a hazardous failure on demand (PFD_{AVG})	1.62 x 10^{-4} (1 year)
Probability of a hazardous failure on demand (PFD_{AVG})	3.10 x 10^{-4} (2 years)
Probability of a hazardous failure on demand (PFD_{AVG})	7.52 x 10^{-4} (5 years)
Diagnostic coverage (DC)	(DC_S = 0%, DC_D = 86%)

Safety data

Safety-related maximum voltage U_m	253 V AC

classifications

eCl@ss

eCl@ss 4.0	27210121
eCl@ss 4.1	27210121
eCl@ss 5.0	27210121
eCl@ss 5.1	27210121
eCl@ss 6.0	27210121
eCl@ss 7.0	27210121
eCl@ss 8.0	27210121

ETIM

ETIM 3.0	EC001596
ETIM 4.0	EC002653
ETIM 5.0	EC002653

UNSPSC

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

approvals

ATEX / Functional Safety /

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approvals

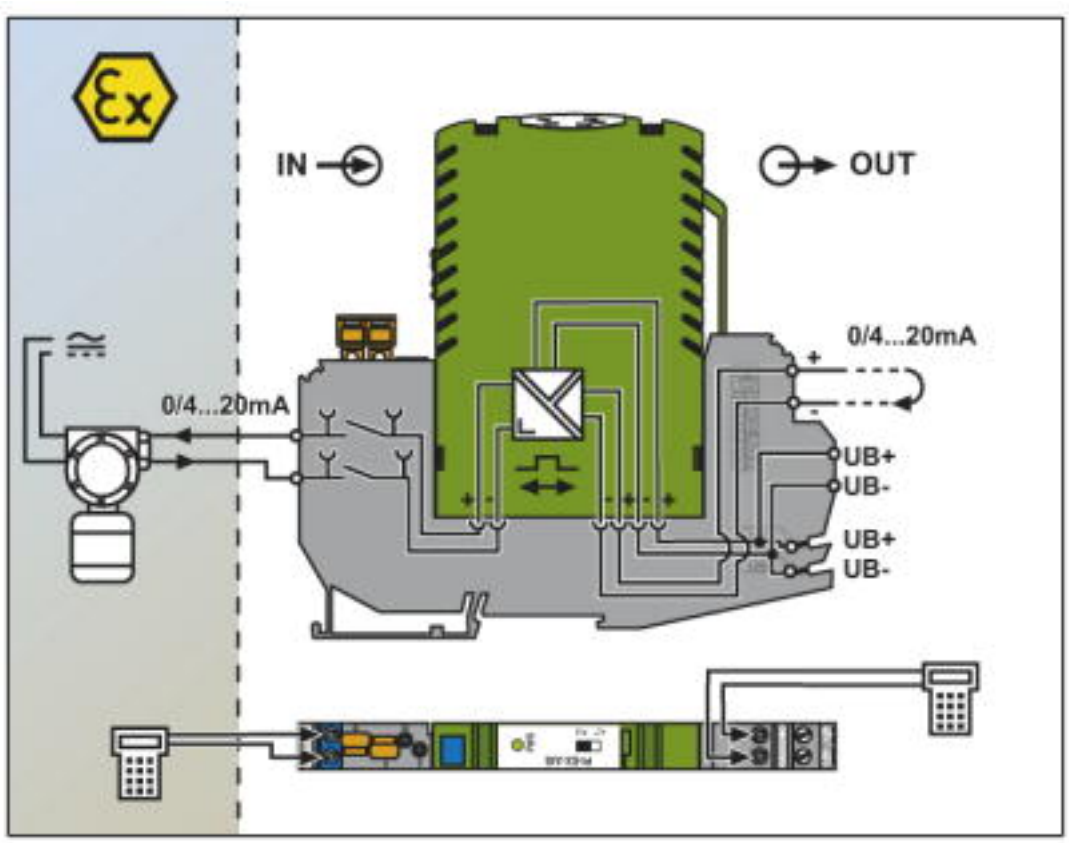
Approval details

ATEX

Functional Safety

Drawings

Block diagram



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Dimensioned drawing