

# Signal isolator - PI-EX-NAM/RNO-NE - 2835341


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Ex i binary input: NAMUR isolation amplifiers. For operating proximity sensors and switches in Ex areas. The binary signals are transmitted to a safe area. Relay output (N/O contact), line fault detection. Galvanic 3-way isolation.



## Key Commercial Data

Packing unit	1 pc
GTIN	 4 017918 178468
GTIN	4017918178468

## Technical data

### Note

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

Width	12.4 mm
Height	145 mm
Depth	147 mm

### Ambient conditions

Ambient temperature (operation)	max. -20 °C ... 60 °C (see data sheet)
Ambient temperature (storage/transport)	-40 °C ... 85 °C

### Input data

Non-load voltage	8.2 V DC ±10 %
Switching points (attenuated)	< 1.2 mA (blocking)
Switching points (unattenuated)	> 2.1 mA (conductive)
Signal input	Intrinsically safe
Available input sources	NAMUR proximity sensors (EN 60947-5-6)

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## Technical data

### Output data

Switching output	Relay output
Configurable/programmable	Can be inverted via slide switch
Contact type	N/O contact
Contact material	AgSnO, hard gold-plated
Limiting continuous current	1 A (30 V DC)
	0.5 A (125 V AC)
Min. contact current	1 mA
Mechanical service life	10 <sup>7</sup> cycles
Service life, electrical	2x 10 <sup>5</sup> cycles (at full load)
Switching frequency	max. 14 Hz (Load-dependent)

### Power supply

Supply voltage range	20 V DC ... 30 V DC
Max. current consumption	max. 40 mA
Power consumption	max. 0.8 W (24 V)

### Connection data

Connection method	Screw connection
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### General

No. of channels	1
Status display	Green LED (supply voltage)
	Yellow LED (status display)
	Red LED (line errors)
Flammability rating according to UL 94	V0
Standards/regulations	NAMUR recommendation NE 21
Housing material	PBT and polyamide PA non-reinforced
Color	green
Line monitoring	NE 21
Designation	Input/output
Electrical isolation	375 V (Peak value as per EN 50020 / EN 60079-11)
Designation	Input/power supply
Electrical isolation	375 V (Peak value as per EN 50020 / EN 60079-11)
Designation	Output/supply
Electrical isolation	1.5 kV (50 Hz, 1 min., test voltage)
Conformance	CE-compliant
ATEX	# II (1) GD [EEx ia] IIC
	# II 3 G Ex nAC IIC T4 X
UL, USA/Canada	UL applied for
Functional Safety (SIL)	SIL 2
SIL	2

### Safety characteristic data

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## Technical data

### Safety characteristic data

Integrity requirement	IEC 61508 - Low demand
Equipment type	Type A
Safety Integrity Level (SIL)	2
Safe Failure Fraction (SFF)	73 %
$\lambda_{SU}$	$1.94 \times 10^{-7}$ (194 FIT)
$\lambda_{SD}$	$6 \times 10^{-9}$ (6 FIT)
$\lambda_{DU}$	$7.4 \times 10^{-8}$ (74 FIT)
$\lambda_{DD}$	$8 \times 10^{-9}$ (8 FIT)
Probability of a hazardous failure on demand (PFD <sub>AVG</sub> )	$3.25 \times 10^{-4}$ (1 year)
	$1.625 \times 10^{-3}$ (5 years)
	$3.25 \times 10^{-3}$ (10 years)
Diagnostic coverage (DC)	DC <sub>S</sub> = 3%, DC <sub>D</sub> = 9%

### Safety data

Max. output voltage U <sub>o</sub>	10.6 V
Max. output current I <sub>o</sub>	33 mA
Max. output power P <sub>o</sub>	86 mW
Group	IIA
Max. external inductivity L <sub>o</sub>	230 mH
Max. external capacity C <sub>o</sub>	72 µF
Group	IIB
Max. external inductivity L <sub>o</sub>	110 mH
Max. external capacity C <sub>o</sub>	16.2 µF
Group	IIC
Max. external inductivity L <sub>o</sub>	30 mH
Max. external capacity C <sub>o</sub>	2.3 µF
Safety-related maximum voltage U <sub>m</sub>	250 V AC

### Standards and Regulations

Standards/regulations	NAMUR recommendation NE 21
Flammability rating according to UL 94	V0
Conformance	CE-compliant
ATEX	# II (1) GD [EEx ia] IIC
	# II 3 G Ex nAC IIC T4 X
UL, USA/Canada	UL applied for
Group	IIA
	IIB
	IIC

### Environmental Product Compliance

China RoHS	Environmentally Friendly Use Period = 50
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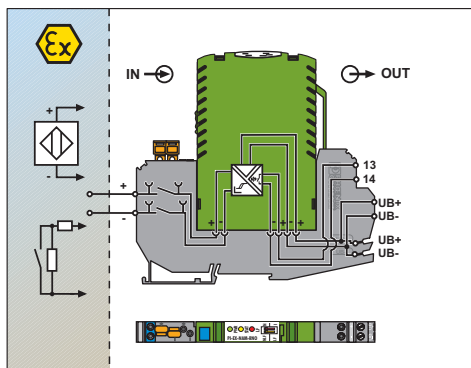
## Technical data

### Environmental Product Compliance

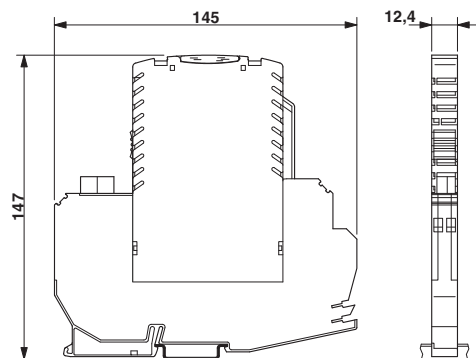
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"
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## Drawings

Block diagram



Dimensional drawing



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