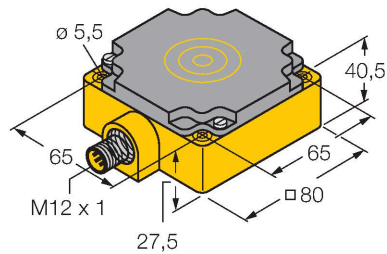


NI40-CP80-Y1-H1141/S100

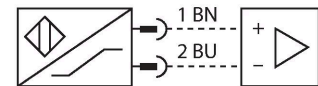
Inductive Sensor – With Increased Temperature Range



Features

- Rectangular, height 41 mm
- Plastic, PBT-GF30-V0
- Temperatures up to +100 °C
- DC 2-wire, nom. 8.2 VDC
- Output acc. to EN 60947-5-6 (NAMUR)
- M12 × 1 connector
- ATEX category II 2 G, Ex Zone 1
- ATEX category II 1 D, Ex Zone 20 for temperatures up to +70°C
- SIL 2 acc. to IEC 61508

Wiring diagram



Technical data

Type	NI40-CP80-Y1-H1141/S100
ID	1040391
Special version	S100 Corresponds to: Maximum ambient temperature = 100 °C
General data	
Rated switching distance	40 mm
Mounting conditions	Non-flush
Secured operating distance	$\leq (0.81 \times S_n)$ mm
Correction factors	St37 = 1; Al = 0.3; stainless steel = 0.7; Ms = 0.4
Repeat accuracy	$\leq 2 \%$ of full scale $\leq \pm 20 \%, \geq +70 \text{ °C}$
Hysteresis	1...10 %
Electrical data	
Output function	2-wire, NAMUR
Switching frequency	0.1 kHz
Voltage	Nom. 8.2 VDC
Non-actuated current consumption	$\geq 2.1 \text{ mA}$
Actuated current consumption	$\leq 1.2 \text{ mA}$
Approval acc. to	KEMA 02 ATEX 1090X
Internal capacitance (C)/inductance (L)	250 nF/350 μ H
Device marking	EX II 2 G Ex ia IIC T4 Gb/II 1 D Ex ia IIIC T135 °C Da (max. $U_i = 20 \text{ V}$, $I_i = 60 \text{ mA}$, $P_i = 200 \text{ mW}$)
Warning	Avoid static charging

Functional principle

Inductive sensors detect metal objects contactless and wear-free. For this purpose they use a high-frequency electromagnetic AC field that interacts with the target. The sensors hosting a ferrite core coil generate the AC field through an LC resonant circuit. Special versions are available for ambient temperatures between -60°C and +250°C.

Technical data

Mechanical data	
Design	Rectangular, CP80
Dimensions	80 x 80 x 41 mm
Housing material	Plastic, PBT-GF30-V0
Active area material	PBT-GF30-V0
Electrical connection	Connector, M12 × 1
Environmental conditions	
Ambient temperature	-25...+100 °C
	For explosion hazardous areas see instruction leaflet
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP67
MTTF	6198 years acc. to SN 29500 (Ed. 99) 40 °C

Mounting instructions

Mounting instructions/Description	
	Distance D 3 x B
	Distance W 3 x Sn
	Distance S 1.5 x B
	Distance G 6 x Sn
	Distance A 1 x B
	Distance C 1 x B
	Width active area B 80 mm

NI40-CP80-Y1-H1141/S100| 02/21/2025 13-55 | technical changes reserved

Instructions for use

Intended use

This device fulfills Directive 2014/34/EC and is suited for use in areas exposed to explosion hazards according to EN 60079-0:2018 and EN 60079-11:2012. Further it is suited for use in safety-related systems, including SIL2 as per IEC 61508. In order to ensure correct operation to the intended purpose it is required to observe the national regulations and directives.

For use in explosion hazardous areas conform to classification

II 2 G and II 1 D (Group II, Category 2 G, electrical equipment for gaseous atmospheres and category 1 D, electrical equipment for dust atmospheres).

Marking (see device or technical data sheet)

Ⓔ II 2 G and Ex ia IIC T4 Gb and Ⓔ II 1 D Ex ia IIIC T135 °C Da acc. to EN 60079-0, -11

Local admissible ambient temperature

As per ATEX category II 2 G electrical equipment -25...+100 °C, as per category II 1 D -25...+70 °C. The corresponding temperature classes are provided in the ATEX type-examination certificate.

Installation/Commissioning

These devices may only be installed, connected and operated by trained and qualified staff. Qualified staff must have knowledge of protection classes, directives and regulations concerning electrical equipment designed for use in explosion hazardous areas. Please verify that the classification and the marking on the device comply with the actual application conditions.

This device is only suited for connection to approved Exi circuits according to EN 60079-0 and EN 60079-11. Please observe the maximum admissible electrical values. After connection to other circuits the sensor may no longer be used in Exi installations. When interconnected to (associated) electrical equipment, it is required to perform the "Proof of intrinsic safety" (EN60079-14). Attention! When used in safety systems, all content of the security manual must be observed.

Installation and mounting instructions

Avoid static charging of cables and plastic devices. Please only clean the device with a damp cloth. Do not install the device in a dust flow and avoid build-up of dust deposits on the device. If the devices and the cable could be subject to mechanical damage, they must be protected accordingly. They must also be shielded against strong electro-magnetic fields. The pin configuration and the electrical specifications can be taken from the device marking or the technical data sheet. In order to avoid contamination of the device, please remove possible blanking plugs of the cable glands or connectors only shortly before inserting the cable or opening the cable socket.

Special conditions for safe operation

avoid static charging

Service/Maintenance

Repairs are not possible. The approval expires if the device is repaired or modified by a person other than the manufacturer. The most important data from the approval are listed.