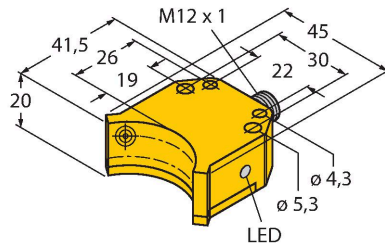


NI4-DS20-2Y1X2-H1140 Inductive Sensor – For Rotary Actuators



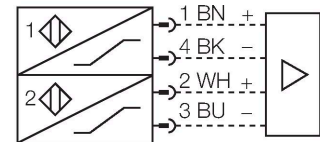
Features

- Rectangular, housing DS20
- Plastic, PBT-GF30-VO
- Two switching outputs for monitoring the position of rotary actuators
- Mounting on all standard actuators
- DC 2-wire, nom. 8.2 VDC
- 2 outputs acc. to DIN EN 60947-5-6 (NAMUR)
- M12 x 1 male connector
- ATEX category II 1 G, Ex zone 0
- ATEX category II 1 D, Ex zone 20
- SIL2 (Low Demand Mode) acc. to IEC 61508, PL c acc. to ISO 13849-1 at HFT0
- SIL3 (All Demand Mode) acc. to IEC 61508, PL e acc. to ISO 13849-1 with redundant configuration HFT1

Technical data

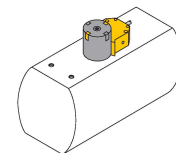
Type	NI4-DS20-2Y1X2-H1140
Ident. no.	1050001
Rated switching distance	4 mm
Mounting conditions	Non-flush
Correction factors	St37 = 1; Al = 0.3; stainless steel = 0.7; Ms = 0.4
Repeat accuracy	≤ 2 % of full scale
Temperature drift	≤ ± 10 %
Hysteresis	1...10 %
Ambient temperature	-25...+70 °C
Output function	4-wire, NAMUR
Switching frequency	0.05 kHz
Voltage	Nom. 8.2 VDC
Non-actuated current consumption	≥ 2.1 mA
Actuated current consumption	≤ 1.2 mA
Approval acc. to	KEMA 02 ATEX 1090X
Internal capacitance (C _i)/inductance (L _i)	150 nF/150 µH
Device marking	Ex II 1 G Ex ia IIC T6 Ga/II 1 D Ex ia IIIC T95 °C Da (max. U _i = 20 V, I _i = 60 mA, P _i = 200 mW)
Design	Dual sensor for valve monitoring, DS20
Dimensions	42 x 45 x 20 mm
Housing material	Plastic, PBT-GF30-VO
Active area material	Plastic, PBT-GF30-VO
Max. tightening torque of housing nut	3 Nm

Wiring diagram



Functional principle

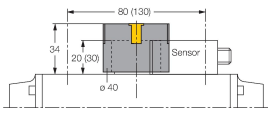
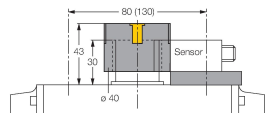
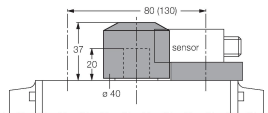
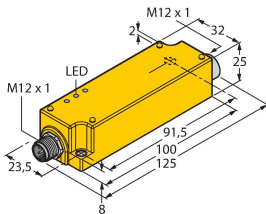
Inductive sensors detect metal objects contactless and wear-free. Dual sensors are especially designed for position detection in rotary actuators. They combine the reliability of non-contact inductive sensors with the flexibility of a modular housing system.



Technical data

Electrical connection	Connector, M12 × 1
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
Switching state	2 × LEDs, Red/Red

Accessories

BTS-DS20-TP1 	6900155 Actuation kit (puck) for dual sensors; end position damped; hole pattern on receptacle surface: 80 x 30 mm; connection shaft (shaft extension) height: 20 mm/Ø: max. 30 mm	BTS-DS20-TK1 	6900156 Actuation kit (puck) for dual sensors; end position damped; hole pattern on receptacle surface: 80 x 30 mm (130 x 30 mm); connection shaft (shaft extension) height: 30 mm/Ø: max. 30 mm
BTS-DS20-KEY 	6900136 Actuation kit (puck) for dual sensors; end position damped and switchpoint adjustable; hole pattern on receptacle surface: 80 x 30 mm (130 x 30 mm); connection shaft (shaft extension) height: 20 mm/Ø: max. 22 mm	IMC-DI-22EX-PNO/24VDC 	7560003 2-channel isolating switching amplifier with M12x1 males, for peripheral use, IP67, zones 2/22, input circuits II(1) Ex ia, PNP transistor output NO

Wiring accessories

Dimension drawing	Type	Ident. no.	
	RKC4.441T-2/TEB	6628444	Connection cable, female M12, straight, 4-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see www.turck.com

Operating Instructions

Intended use

This device fulfills the directive 2014/34/EC and is suited for use in explosion hazardous areas according to EN 60079-0:2012 + A11 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 1 G and II 1 D (Group II, Category 1 G, electrical equipment for gaseous atmospheres and category 1 D, electrical equipment for dust atmospheres).

Marking (see device or technical data sheet)

⊕ II 1 G and Ex ia IIC T6 Ga and ⊕ II 1 D Ex ia IIIC T95 °C Da acc. to EN 60079-0, -11

Local admissible ambient temperature

-25...+70 °C

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" (EN 60079-14). 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.

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.