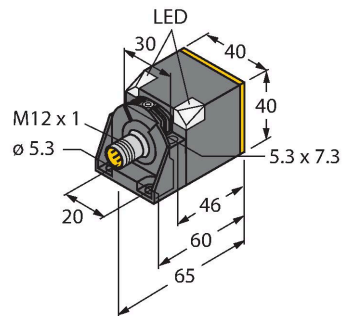


NI50U-CK40-VP4X2-H1141/3GD Inductive Sensor



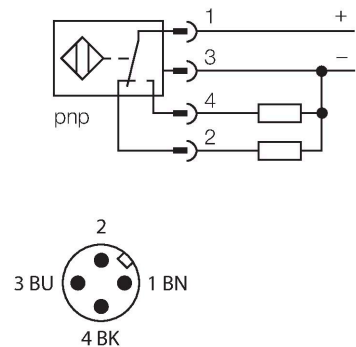
Features

- Rectangular, height 40 mm
- Variable orientation of active face in 5 directions
- Plastic, PBT-GF30-V0
- High luminance corner LEDs
- Optimum view on supply voltage and switching state from any position
- Factor 1 for all metals
- Increased switching distance
- Protection class IP68
- Resistant to magnetic fields
- Auto-compensation protects against pre-damping
- Partially embeddable
- DC 4-wire, 10...65 VDC
- Changeover contact, PNP output
- M12 x 1 male connector
- ATEX category II 3 G, Ex zone 2
- ATEX category II 3 D, Ex zone 22

Technical data

Type	NI50U-CK40-VP4X2-H1141/3GD
Ident. no.	1514120
Rated switching distance	50 mm
Mounting conditions	Non-flush, flush
Secured operating distance	$\leq (0.81 \times S_n)$ mm
Repeat accuracy	$\leq 2\%$ of full scale
Temperature drift	$\leq \pm 10\%$
	$\leq \pm 20\%$, $\leq -25\text{ °C}$ v $\geq +70\text{ °C}$
Hysteresis	3...15 %
Ambient temperature	-30...+85 °C
	For explosion hazardous areas see instruction leaflet
Operating voltage	10...65 VDC
Residual ripple	$\leq 10\%$ U_{ss}
DC rated operational current	≤ 200 mA
No-load current	≤ 15 mA
Residual current	≤ 0.1 mA
Isolation test voltage	≤ 0.5 kV
Short-circuit protection	yes / Cyclic
Voltage drop at I_e	≤ 1.8 V
Wire breakage/Reverse polarity protection	yes / Complete
Output function	4-wire, Complementary contact, PNP
Insulation class	□
Switching frequency	0.25 kHz
Approval acc. to	ATEX test certificate TURCK Ex-10002M X

Wiring diagram



Functional principle

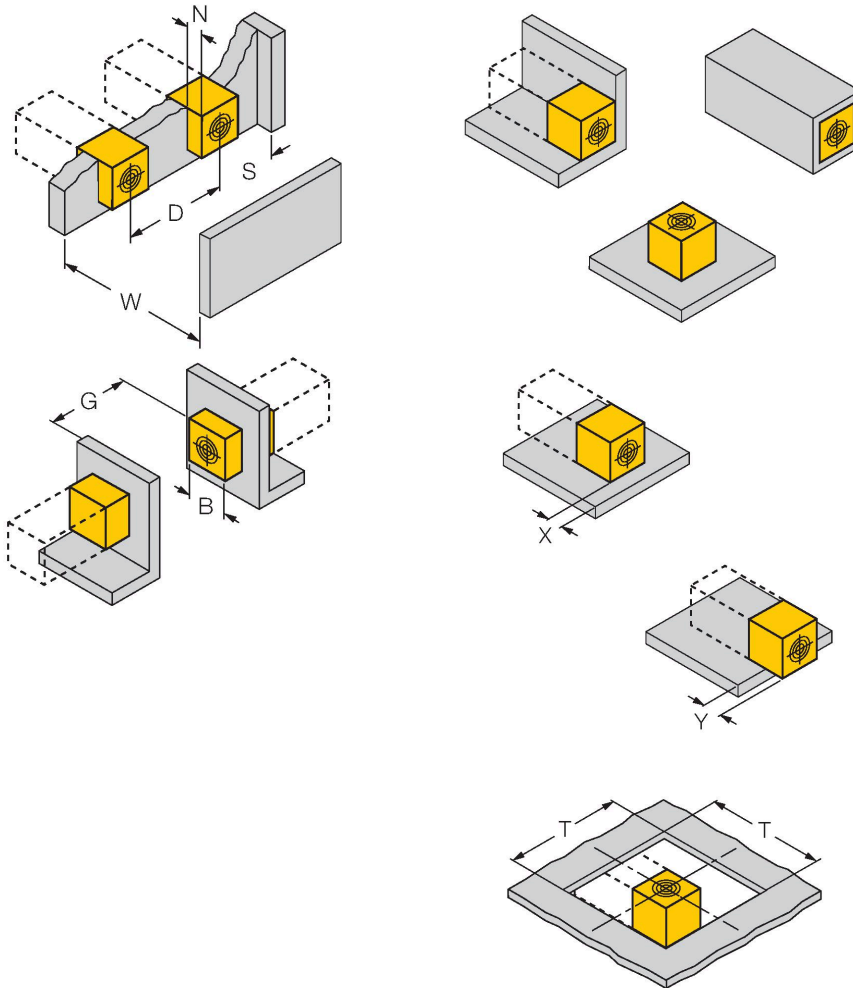
Inductive sensors detect metal objects contactless and wear-free. Due to the patented multi-coil system, *uprox*[®] sensors have distinct advantages over conventional sensors. They excel in largest switching distances, maximum flexibility and operational reliability as well as efficient standardization.

Technical data

Device marking	⊕ II 3 G Ex nA IIC T4 Gc/II 3 D Ex tc IIIC T1 10°C Dc
Design	Rectangular, CK40
Dimensions	65 x 40 x 40 mm
	variable orientation of active face in 5 directions
Housing material	Plastic, PBT-GF20-V0, Black
Active area material	Plastic, PA12-GF30, yellow
Electrical connection	Connector, M12 × 1
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP68
MTTF	874 years acc. to SN 29500 (Ed. 99) 40 °C
Power-on indication	2 × LEDs, Green
Switching state	2 × LEDs, Yellow
Included in delivery	Fixing clamp BS4-CK40, SC-M12/3GD

Mounting instructions

Mounting instructions/Description



Distance D	240 mm
Distance W	105 mm
Distance S	60 mm
Distance G	300 mm
Distance N	30 mm
Width active area B	40 mm

Flush mounting

- 1-side mounting: $S_r = 35$ mm; $D = 240$ mm
- 2-side mounting: $S_r = 25$ mm; $D = 240$ mm
- 3-side mounting: $S_r = 20$ mm; $D = 80$ mm
- 4-side mounting: $S_r = 15$ mm; $D = 60$ mm

Backside as well as recessed mounting with reduced switching distance

Recessed mounting in metal:

- $x = 10$ mm: $S_r = 20$ mm
- $x = 20$ mm: $S_r = 20$ mm
- $x = 30$ mm: $S_r = 20$ mm
- $x = 40$ mm: $S_r = 20$ mm

Protruded mounting:

- $y = 10$ mm: $S_r = 40$ mm
- $y = 20$ mm: $S_r = 50$ mm
- $y = 30$ mm: $S_r = 50$ mm
- $y = 40$ mm: $S_r = 50$ mm

Mounting in aperture plate:

$T = 150$ mm:

Sensor with twisted turning angle

On metal $S_r = 50$ mm

Metal-enclosed on one side $S_r = 25$ mm

Metal-enclosed on two sides $S_r = 15$ mm

Metal-enclosed on three sides $S_r = 12$ mm

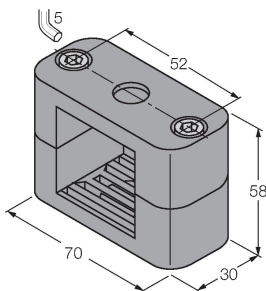
The values stated relate to a 1 mm thick steel plate.

Accessories


BSS-CP40

6901318

Mounting clamp for rectangular housings 40 x 40 mm; material: Polypropylene



Wiring accessories

Dimension drawing	Type	Ident. no.	
	RKC4.4T-2/TEL	6625013	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/EU and is suited for use in explosion hazardous areas acc. to EN 60079-0:2012/A11:2013, EN 60079-15:2010 and EN 60079-31:2014. 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 3 G and II 3 D (Group II, Category 3 G, electrical equipment for gaseous atmospheres and category 3 D, electrical equipment for dust atmospheres).

Marking (see device or technical data sheet)

⊕ II 3 G Ex nA IIC T4 Gc according to EN 60079-0:2012/A11:2013 and EN 60079-15:2010 and ⊕ II 3 D Ex tc IIIC T110 °C Dc acc. to EN 60079-0:2012/A11:2013 and EN 60079-31:2014

Local admissible ambient temperature

-25...+30 °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.

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. The devices must be protected against strong 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

For devices with M12 connectors please use the supplied safety clip SC-M12/3GD. Do not disconnect the plug-in connection or cable under voltage. Please attach a warning label permanently in an appropriate fashion in close proximity to the plug-in connection with the following inscription: Nicht unter Spannung trennen / Do not separate when energized. The device must be protected against any kind of mechanical damage and degrading UV-radiation. The IP protection rating of the connectors is given only in combination with a suitable O-ring. Load voltage and operating voltage of this equipment must be supplied from power supplies with safe isolation (IEC 30 364/UL508), to ensure that the rated voltage of the equipment (24 VDC +20% = 28.8 VDC) is never exceeded by more than 40%.

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.