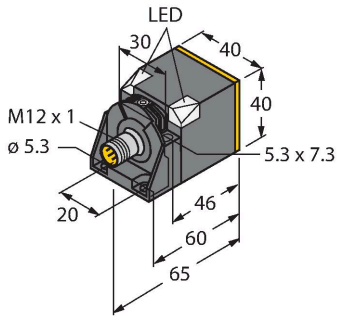
NI50U-CK40-IOL6X2-H1141
Inductive Sensor – IO-Link Communication and Configuration



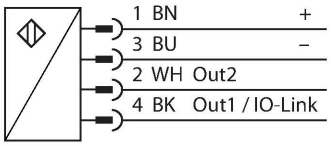
Technical data

Type	NI50U-CK40-IOL6X2-H1141
ID	1625871
General data	
Rated switching distance	50 mm
Mounting conditions	Non-flush, flush mountable
Secured operating distance	≤ (0.81 × Sn) mm
Repeat accuracy	≤ 2 % of full scale
Temperature drift	≤ ±10 %
	≤ ± 20 %, ≤ -25 °C v ≥ +70 °C
Hysteresis	3…15 %
Electrical data	
Operating voltage U_B	10…30 VDC
Ripple U_{ss}	≤ 10 % U_{Bmax}
DC rated operating current I_e	≤ 150 mA
No-load current	≤ 27 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 break/reverse polarity protection	yes/Complete
Communication protocol	IO-Link
Output function	4-wire, NO/NC, PNP/NPN
Output 1	Switching output or IO-Link mode
Output 2	Switching output

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…30 VDC
- M12 x 1 connector
- Configuration and communication via IO-Link v1.1 or via standard I/O
- Electrical outputs independently configurable
- Switching distance can be parametrized per output and hysteresis
- Identification via 32-byte memory
- Temperature monitoring with adjustable limits
- Various timer and pulse monitoring functions

Wiring diagram



Functional principle

Technical data

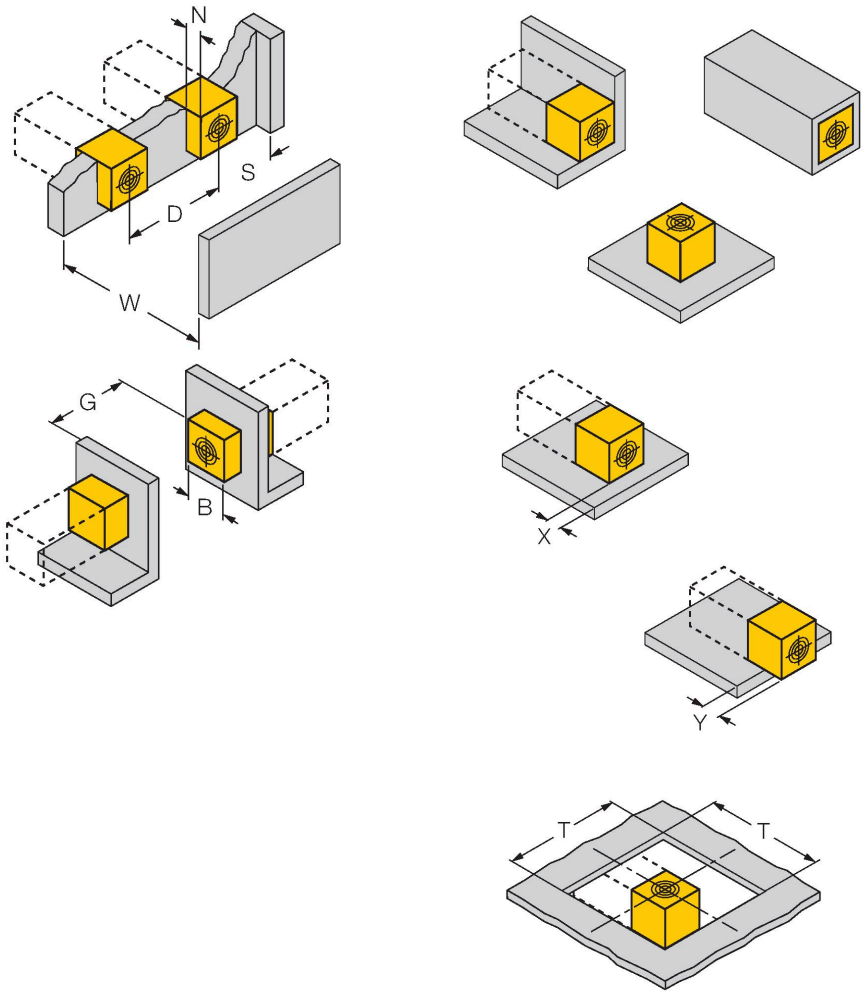
DC field stability	300 mT
AC field stability	300 mT_{ss}
Insulation class	⧈
Switching frequency	0.5 kHz
IO-Link	
IO-Link specification	V 1.1
IO-Link port type	Class A
Communication mode	COM 2 (38.4 kBaud)
Process data width	16 bit
Switchpoint information	2 bit
Status bit information	3 bit
Frame type	2.2
Minimum cycle time	8 ms
Function pin 4	IO-Link
Function Pin 2	DI
Maximum cable length	20 m
Included in the SIDI GSDML	Yes
Mechanical data	
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
Environmental conditions	
Ambient temperature	-25…+70 °C
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

Inductive sensors are designed for wear-free and contactless detection of metal objects. uprox3 sensors have significant advantages due to their patented multi-coil system. They excel thanks to their optimum switching distances, maximum flexibility and operational reliability as well as efficient standardization. In addition, the uprox3 IO-Link sensors allow certain parameters to be set within predefined limits and various device functions to be configured in accordance with customer needs, using an IO-Link Master. For detailed information, refer to the uprox3 IO-Link manual.

NI50U-CK40-IOL6X2-H1141| 02/21/2025 14-25 | technical changes reserved

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 possible on up to 4 sides
1-side mounting: Sr = 35 mm; D = 240 mm
2-side mounting: Sr = 25 mm; D = 240 mm
3-side mounting: Sr = 20 mm; D = 80 mm
4-side mounting: Sr = 15 mm; D = 60 mm

Rear-side mounting and set-back installation with reduced switching distance possible

Sensor mounted on metal, set back from the edge:
x = 10 mm: Sr = 20 mm
x = 20 mm: Sr = 20 mm
x = 30 mm: Sr = 20 mm
x = 40 mm: Sr = 20 mm

Sensor mounted on metal, protruding over the edge:
y = 10 mm: Sr = 40 mm
y = 20 mm: Sr = 50 mm
y = 30 mm: Sr = 50 mm
y = 40 mm: Sr = 50 mm

Installation in aperture:
T = 150 mm:
Sensor with turned rotating bracket
Surface-mounted on metal Sr = 50 mm
Surface-mounted on metal, with one side wall Sr = 25 mm
Surface-mounted on metal, with two side walls Sr = 15 mm
Surface-mounted on metal, with three side walls Sr = 12 mm

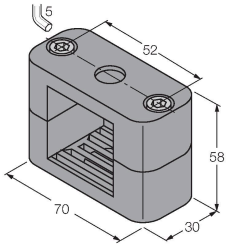
The values stated relate to a 1-mm-thick steel plate.

Sr is the switching distance that can be measured under specified temperature and supply conditions, also taking into account series variation.

NI50U-CK40-IOL6X2-H1141| 02/21/2025 14-25 | technical changes reserved

Accessories

BSS-CP40	6901318



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

Wiring accessories

Dimension drawing	Type	ID	
	RKC4.4T-2/TEL	6625013	Connection cable, M12 female connector, straight, 4-pin, cable length: 2 m, jacket material: PVC, black; cULus approval

NI50U-CK40-IOL6X2-H1141| 02/21/2025 14-25 | technical changes reserved