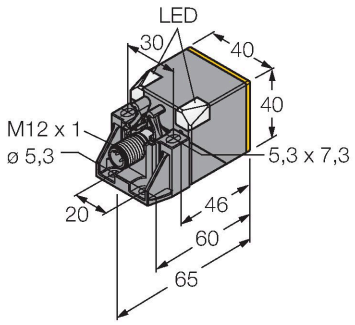
# NI50U-QV40-IOL6X2-H1141
# Inductive Sensor – IO-Link Communication and Configuration



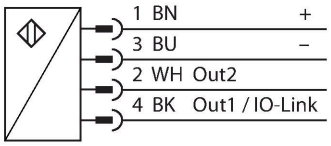

## Technical data

| Type | NI50U-QV40-IOL6X2-H1141 |
|---|---|
| Ident. no. | 1625872 |
| 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 % |
| Ambient temperature | -25…+70 °C |
| Operating voltage | 10…30 VDC |
| Residual ripple | ≤ 10 % $U_{ss}$ |
| DC rated operational current | ≤ 150 mA |
| No-load current | ≤ 20 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 |
| Communication protocol | IO-Link |
| Output function | 4-wire, NO/NC, PNP/NPN |
| Output 1 | Switching output or IO-Link mode |
| Output 2 | switching output |
| Insulation class | ⧈ |

## Features

- Rectangular, height 40 mm
- Variable orientation of active face in 5 directions without tools
- 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

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.

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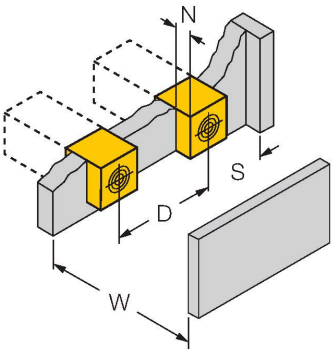
## Technical data

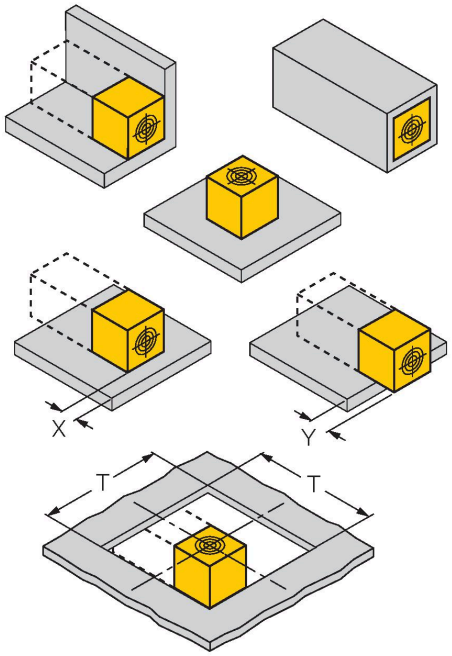
| | |
|---|---|
| Switching frequency | 0.5 kHz |
| **IO-Link** | |
| IO-Link specification | V 1.1 |
| IO-Link port type | Class A |
| Communication mode | COM 2 (38.4 kBaud) |
| Process data width | 16 bit |
| Switchpoint information | 2 bit |
| Status bit information | 3 bit |
| Frame type | 2.2 |
| 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 |
| **Design** | Rectangular, QV40 |
| Dimensions | 65 x 40 x 40 mm |
| | variable orientation of active face in 5 directions |
| Housing material | Plastic, PBT-GF30-V0, Black |
| Active area material | Plastic, PA6-GF30-X, 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 for QV40 |

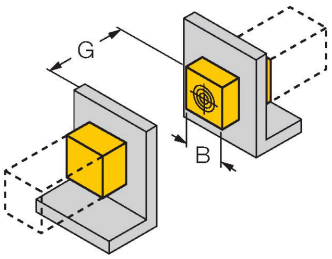
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## Mounting instructions

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: 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 = 17 mm; D = 60 mm

Backside as well as recessed mounting with reduced switching distance

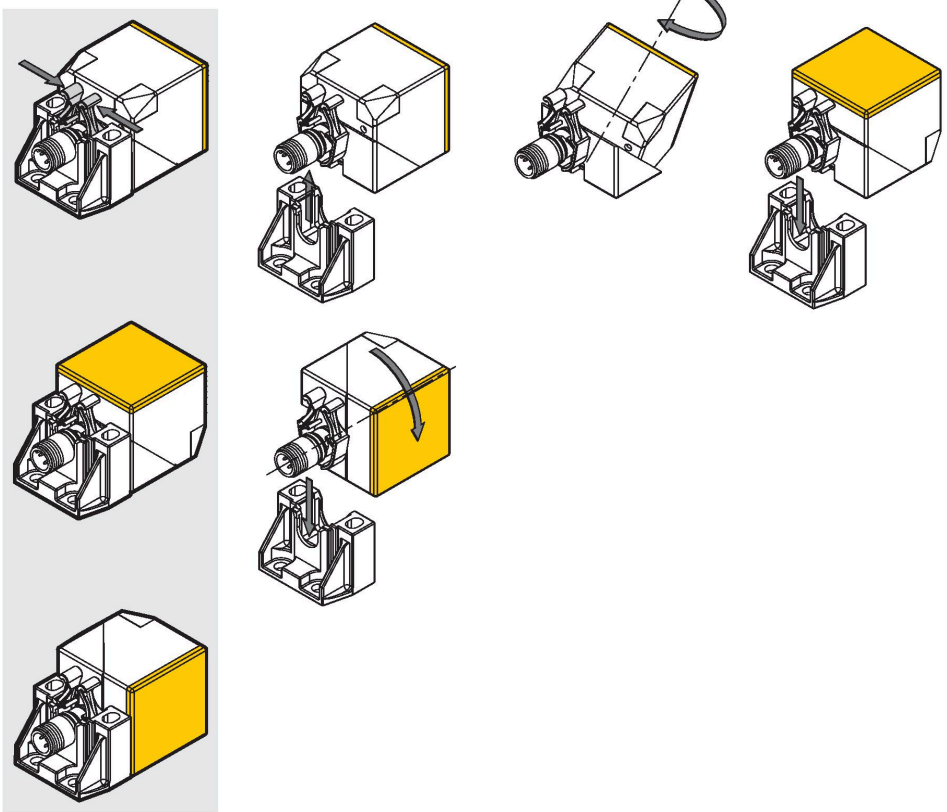
Recessed mounting in metal:
x = 10 mm: Sr = 20 mm
x = 20 mm: Sr = 20 mm
x = 30 mm: Sr = 20 mm
x = 40 mm: Sr = 20 mm

Protruded mounting:
y = 10 mm: Sr = 40 mm
y = 20 mm: Sr = 50 mm
y = 30 mm: Sr = 50 mm
y = 40 mm: Sr = 50 mm

Mounting in aperture plate: T = 150 mm:
Sensor with twisted turning angle
On metal Sr = 50 mm
Metal-enclosed on one side Sr = 25 mm
Metal-enclosed on two sides Sr = 15 mm
Metal-enclosed on three sides Sr = 12 mm

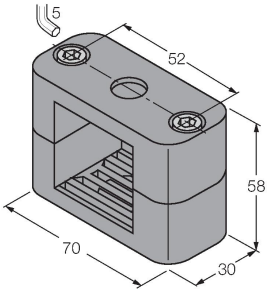
With a single action the active face can be positioned in 5 directions without tools.

A light squeeze of the bracket is enough to release the sensor from the fixing clamp. Afterwards, the active face can easily be twisted to change the position.
Once the final position is attained, the sensor is simply inserted in the fixing clamp until the clamp snaps in. Safe and easy mounting is thus guaranteed.

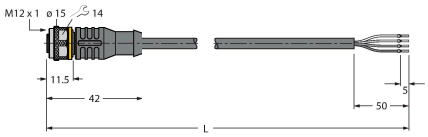


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## Accessories

| 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 |

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