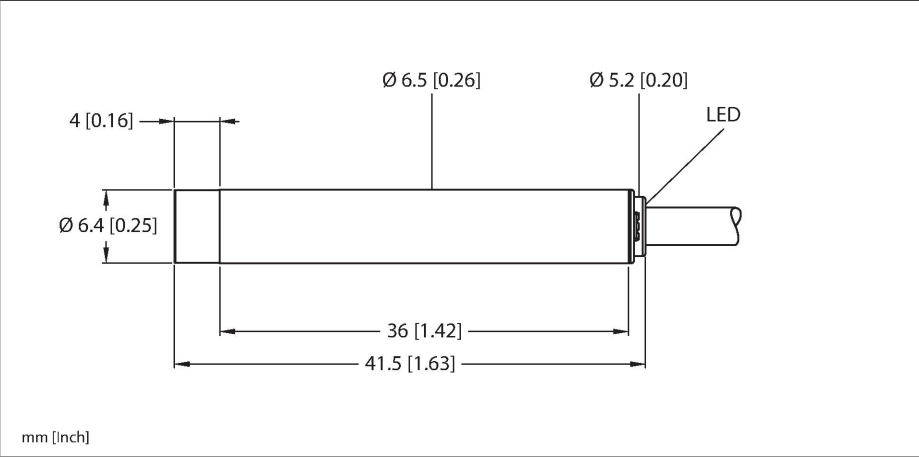


# NI3-EH6.5-AN6X

## Inductive Sensor



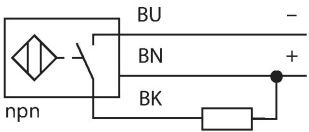
### Technical data

|                                        |                                                     |
|----------------------------------------|-----------------------------------------------------|
| Type                                   | NI3-EH6.5-AN6X                                      |
| ID                                     | 4612500                                             |
| General data                           |                                                     |
| Rated switching distance               | 3 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                            |
| Temperature drift                      | $\leq \pm 10$ %                                     |
| Hysteresis                             | 20 %                                                |
| Electrical data                        |                                                     |
| Operating voltage $U_B$                | 10...30 VDC                                         |
| Ripple $U_{ss}$                        | $\leq 10$ % $U_{Bmax}$                              |
| DC rated operating current $I_o$       | $\leq 150$ mA                                       |
| No-load current                        | $\leq 15$ mA                                        |
| Residual current                       | $\leq 0.1$ mA                                       |
| Isolation test voltage                 | 0.5 kV                                              |
| Short-circuit protection               | yes/Cyclic                                          |
| Voltage drop at $I_o$                  | $\leq 1.8$ V                                        |
| Wire break/reverse polarity protection | yes/Complete                                        |
| Output function                        | 3-wire, NO contact, NPN                             |
| Switching frequency                    | 3 kHz                                               |
| Mechanical data                        |                                                     |
| Design                                 | Smooth barrel, 6,5 mm                               |
| Dimensions                             | 41.5 mm                                             |
| Housing material                       | Stainless steel, 1.4305 (AISI 303)                  |

### Features

- Smooth barrel, Ø 6.5 mm
- Stainless steel, 1.4305 (AISI 303)
- DC 3-wire, 10...30 VDC
- NO contact, NPN output
- Cable connection

### Wiring diagram



### Functional principle

Inductive sensors detect metal objects contactless and wear-free. For this, they use a high-frequency electromagnetic AC field that interacts with the target. Inductive sensors generate this field via an RLC circuit with a ferrite coil.

Technical data

|                          |                                            |
|--------------------------|--------------------------------------------|
| Active area material     | Plastic, PBT                               |
| End cap                  | Plastic, PP                                |
| Electrical connection    | Cable                                      |
| Cable quality            | Ø 3.3 mm, Gray, LiFY-11Y, PUR, 2 m         |
| Core cross-section       | 3 x 0.14 mm <sup>2</sup>                   |
| Environmental conditions |                                            |
| Ambient temperature      | -25...+70 °C                               |
| Vibration resistance     | 55 Hz (1 mm)                               |
| Shock resistance         | 30 g (11 ms)                               |
| Protection class         | IP67                                       |
| MTTF                     | 2283 years acc. to SN 29500 (Ed. 99) 40 °C |
| Switching state          | LED, Yellow                                |

Mounting instructions

# Mounting instructions/Description

The image contains three technical diagrams illustrating different mounting configurations for a sensor. The top diagram is a side view showing a sensor with two yellow active areas. Dimensions labeled include N (distance between active areas), S (distance from active area to mounting edge), D (distance between mounting holes), and W (distance from mounting hole to mounting edge). The middle diagram is a top view showing a square mounting plate with a circular hole and a yellow active area, with dimension T indicating the distance from the active area to the mounting edge. The bottom diagram is a front view showing two sensors mounted on a base, with dimension G indicating the distance between the active areas.

|                        |                              |
|------------------------|------------------------------|
| Distance D             | $3 \times B$                 |
| Distance W             | $3 \times S_n$               |
| Distance T             | $3 \times B$                 |
| Distance S             | $1.5 \times B$               |
| Distance G             | $6 \times S_n$               |
| Distance N             | $2 \times S_n$               |
| Diameter active area B | $\varnothing 6.5 \text{ mm}$ |