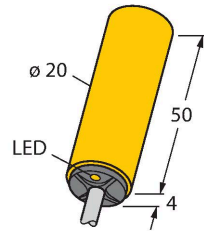


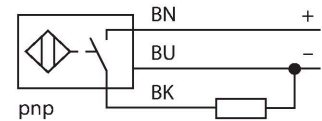
# NI10-K20-AP6X Inductive Sensor



## Features

- Smooth barrel, Ø 20 mm
- Plastic, PBT-GF30-V0
- DC 3-wire, 10...30 VDC
- NO contact, PNP output
- Cable connection

## Wiring diagram



## Technical data

|                                        |                                                     |
|----------------------------------------|-----------------------------------------------------|
| Type                                   | NI10-K20-AP6X                                       |
| ID                                     | 46640                                               |
| <b>General data</b>                    |                                                     |
| Rated switching distance               | 10 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                             | 3...15 %                                            |
| <b>Electrical data</b>                 |                                                     |
| Operating voltage $U_B$                | 10...30 VDC                                         |
| Ripple $U_{rs}$                        | $\leq 10$ % $U_{Bmax}$                              |
| DC rated operating current $I_o$       | $\leq 200$ 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, PNP                             |
| Switching frequency                    | 1 kHz                                               |

## Functional principle

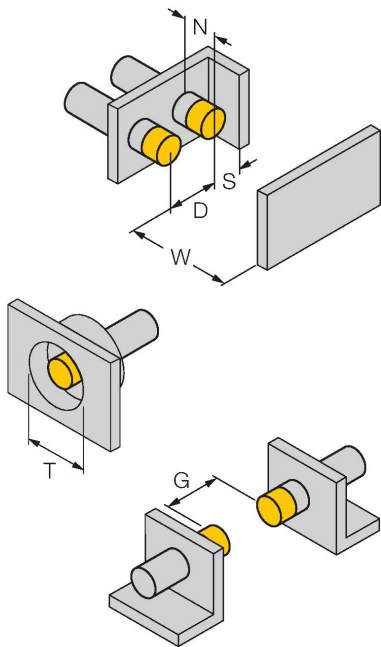
Inductive sensors detect metal objects contactless and wear-free. For this, they use a high-frequency electromagnetic AC field that interacts with the target. Inductive sensors generate this field via an RLC circuit with a ferrite coil.

Technical data

| Mechanical data          |                                            |
|--------------------------|--------------------------------------------|
| Design                   | Smooth barrel, 20 mm                       |
| Dimensions               | 54 mm                                      |
| Housing material         | Plastic, PBT-GF30-V0                       |
| Active area material     | Plastic, PBT-GF30-V0                       |
| End cap                  | Plastic, EPTR                              |
| Electrical connection    | Cable                                      |
| Cable quality            | Ø 5.2 mm, LifYY, PVC, 2 m                  |
| Core cross-section       | 3 x 0.34 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                                |
| Included in delivery     | BS20                                       |

Mounting instructions

| Mounting instructions/Description |
|-----------------------------------|
|-----------------------------------|



|                        |         |
|------------------------|---------|
| Distance D             | 3 x B   |
| Distance W             | 3 x Sn  |
| Distance T             | 3 x B   |
| Distance S             | 1.5 x B |
| Distance G             | 6 x Sn  |
| Distance N             | 2 x Sn  |
| Diameter active area B | Ø 20 mm |

NI10-K20-AP6X | 02/21/2025 13-32 | technical changes reserved

## Accessories

BS 20

69464

Fixing clamp; material mounting  
block: PBT

