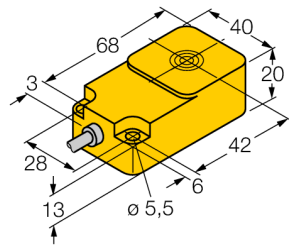


# Inductive Sensor

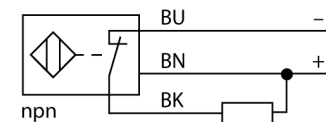
## With Extended Temperature Range

### BI22-Q20-RN6X2/S400-S946



- Rectangular, height 20 mm
- Active face on top
- Plastic, PBT-GF30-V0
- Temperatures up to -40 °C
- DC 3-wire, 10...30 VDC
- NC contact, NPN output
- Cable connection

#### Wiring Diagram



#### Functional principle

Inductive sensors detect metal objects contactless and wear-free. For this purpose they use a high-frequency electromagnetic AC field that interacts with the target. The sensors hosting a ferrite core coil generate the AC field through an LC resonant circuit.

Special versions are available for ambient temperatures between -60°C and +250°C.

|                                        |                                                     |
|----------------------------------------|-----------------------------------------------------|
| Type                                   | BI22-Q20-RN6X2/S400-S946                            |
| ID                                     | 4690237                                             |
| <b>General data</b>                    |                                                     |
| Rated switching distance $S_n$         | 22 mm                                               |
| Mounting conditions                    | 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                      | $\leq \pm 10$ %                                     |
|                                        | $\leq \pm 20$ %, $\leq -25$ °C                      |
| Hysteresis                             | 3...15 %                                            |
| <b>Electrical data</b>                 |                                                     |
| Operating voltage $U_o$                | 10...30 VDC                                         |
| Ripple $U_{rs}$                        | $\leq 10$ % $U_{Bmax}$                              |
| DC rated operating current $I_o$       | $\leq 200$ 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, NC contact, NPN                             |
| Switching frequency                    | 0.25 kHz                                            |
| <b>Mechanical data</b>                 |                                                     |
| Design                                 | Rectangular, Q20                                    |
| Dimensions                             | 68 x 40 x 20 mm                                     |
| Housing material                       | Plastic, PBT-GF30-V0, Yellow                        |
| Electrical connection                  | Cable                                               |
| Cable quality                          | Ø 5.2mm, Lif32Y32Y, TPE, 3 m                        |
| Core cross-section                     | 3 x 0.5 mm <sup>2</sup>                             |

|                          |                                            |
|--------------------------|--------------------------------------------|
| Environmental conditions |                                            |
| Ambient temperature      | -40...+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 |
| Power-on indication      |                                            |
| Switching state          | LED, Green                                 |
|                          | LED, Yellow                                |