

# NI20U-S30-AP6X Inductive Sensor



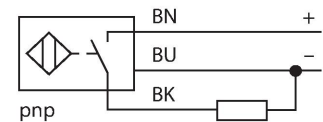
## Features

- Threaded barrel, M30 x 1.5
- Plastic, PA12-GF30
- Factor 1 for all metals
- Protection class IP68
- Resistant to magnetic fields
- Extended temperature range
- High switching frequency
- Auto-compensation protects against pre-damping
- DC 3-wire, 10...30 VDC
- NO contact, PNP output
- Cable connection

## Technical data

|                                        |                                                                |
|----------------------------------------|----------------------------------------------------------------|
| Type                                   | NI20U-S30-AP6X                                                 |
| ID                                     | 1646500                                                        |
| General data                           |                                                                |
| Rated switching distance               | 20 mm                                                          |
| Mounting conditions                    | Non-flush                                                      |
| Secured operating distance             | $\leq (0.81 \times S_n)$ mm                                    |
| Repeat accuracy                        | $\leq 2 \%$ of full scale                                      |
| Temperature drift                      | $\leq \pm 10 \%$                                               |
|                                        | $\leq \pm 20 \%, \leq -25 \text{ °C} \vee \geq +70 \text{ °C}$ |
| Hysteresis                             | 3...15 %                                                       |
| Electrical data                        |                                                                |
| Operating voltage $U_B$                | 10...30 VDC                                                    |
| Ripple $U_{ss}$                        | $\leq 10 \%$ $U_{Bmax}$                                        |
| DC rated operating current $I_o$       | $\leq 200 \text{ mA}$                                          |
| No-load current                        | $\leq 25 \text{ mA}$                                           |
| Residual current                       | $\leq 0.1 \text{ mA}$                                          |
| Isolation test voltage                 | 0.5 kV                                                         |
| Short-circuit protection               | yes/Cyclic                                                     |
| Voltage drop at $I_o$                  | $\leq 1.8 \text{ V}$                                           |
| Wire break/reverse polarity protection | yes/Complete                                                   |
| Output function                        | 3-wire, NO contact, PNP                                        |
| DC field stability                     | 300 mT                                                         |
| AC field stability                     | 300 mT <sub>ss</sub>                                           |
| Insulation class                       | □                                                              |

## Wiring diagram



## Functional principle

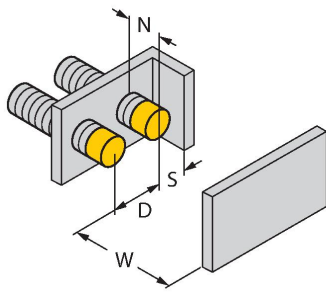
Inductive sensors are designed for wear-free and contactless detection of metal objects. uprox Factor 1 sensors have significant advantages due to their patented ferrite-coreless multi-coil system. They detect all metals at the same large switching distance and are resistant to magnetic fields.

## Technical data

|                                       |                                           |
|---------------------------------------|-------------------------------------------|
| Switching frequency                   | 1 kHz                                     |
| <b>Mechanical data</b>                |                                           |
| Design                                | Threaded barrel, M30 x 1.5                |
| Dimensions                            | 64 mm                                     |
| Housing material                      | Plastic, PA12-GF30                        |
| Active area material                  | Plastic, PA12-GF30                        |
| End cap                               | Plastic, EPTR                             |
| Max. tightening torque of housing nut | 5 Nm                                      |
| Electrical connection                 | Cable                                     |
| Cable quality                         | Ø 5.2 mm, LifYY, PVC, 2 m                 |
| Core cross-section                    | 3 x 0.34 mm <sup>2</sup>                  |
| <b>Environmental conditions</b>       |                                           |
| Ambient temperature                   | -30...+85 °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 |
| Switching state                       | LED, Yellow                               |

## Mounting instructions

### Mounting instructions/Description

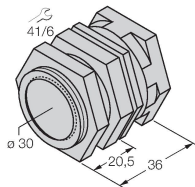


|                        |         |
|------------------------|---------|
| Distance D             | 3 x B   |
| Distance W             | 3 x Sn  |
| Distance T             | 3 x B   |
| Distance S             | 0.5 x B |
| Distance G             | 6 x Sn  |
| Distance N             | 2 x Sn  |
| Diameter active area B | Ø 30 mm |

## Accessories

### QM-30

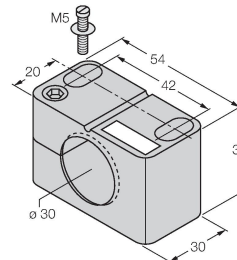
6945103



Quick-mount bracket with dead-stop; material: Chrome-plated brass. Male thread M36 x 1.5. Note: The switching distance of the proximity switches may change when using quick-mount brackets.

### BST-30B

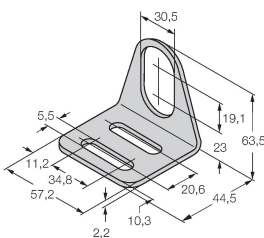
6947216



Mounting clamp for threaded barrel sensors, with dead-stop; material: PA6

### MW30

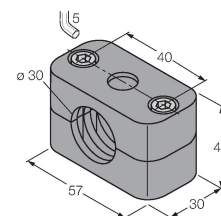
6945005



Mounting bracket for threaded barrel sensors; material: Stainless steel A2 1.4301 (AISI 304)

### BSS-30

6901319



Mounting clamp for smooth and threaded barrel sensors; material: Polypropylene