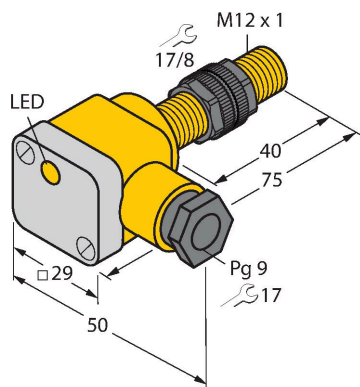


# NI5-P12SK-AP6X

## Inductive Sensor



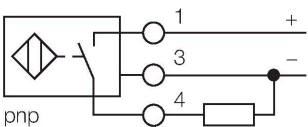
### Technical data

|                                        |                                                     |
|----------------------------------------|-----------------------------------------------------|
| Type                                   | NI5-P12SK-AP6X                                      |
| ID                                     | 46537                                               |
| General data                           |                                                     |
| Rated switching distance               | 5 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 %                                            |
| Electrical data                        |                                                     |
| Operating voltage $U_B$                | 10...30 VDC                                         |
| Ripple $U_{ss}$                        | $\leq 10 \%$ $U_{Bmax}$                             |
| 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                    | 1.5 kHz                                             |
| Mechanical data                        |                                                     |
| Design                                 | Threaded barrel, M12 x 1                            |
| Dimensions                             | 75 mm                                               |
| Housing material                       | Plastic, PA12-GF30                                  |

### Features

- Threaded barrel, M12 x 1
- Plastic, PA12-GF30
- DC 3-wire, 10...30 VDC
- NO contact, PNP output
- Terminal chamber

### Wiring diagram



### Functional principle

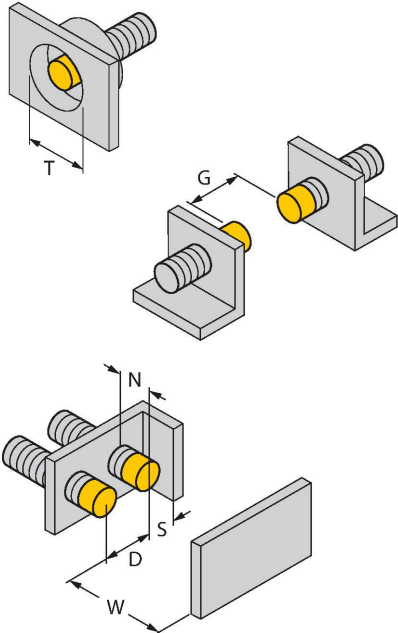
Inductive sensors detect metal objects contactless and wear-free. For this, they use a high-frequency electromagnetic AC field that interacts with the target. Inductive sensors generate this field via an RLC circuit with a ferrite coil.

Technical data

|                                       |                                            |
|---------------------------------------|--------------------------------------------|
| Terminal chamber cover material       | plastic, Ultem                             |
| Terminal chamber housing material     | plastic, PA12-GF30                         |
| Active area material                  | Plastic, PA12-GF30                         |
| Max. tightening torque of housing nut | 1 Nm                                       |
| Electrical connection                 | Terminal chamber                           |
| Clamping ability                      | ≤ 2.5 mm²                                  |
| Cable external diameter               | 4.5...8 mm                                 |
| 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                  | cable gland; 2x plastic seals              |

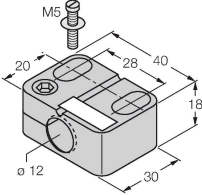
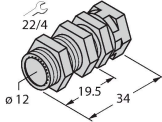
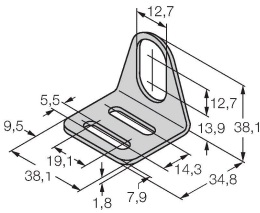
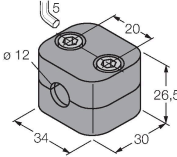
Mounting instructions

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 12 mm |

Accessories

|                                                                                   |         |                                                                                              |                                                                                    |         |                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BST-12B                                                                           | 6947212 | Mounting clamp for threaded barrel sensors, with dead-stop; material: PA6                    | QM-12                                                                              | 6945101 | Quick-mount bracket with dead-stop; material: Chrome-plated brass. Male thread M16 × 1. Note: The switching distance of the proximity switches may change when using quick-mount brackets. |
|  |         |                                                                                              |  |         |                                                                                                                                                                                            |
| MW12                                                                              | 6945003 | Mounting bracket for threaded barrel sensors; material: Stainless steel A2 1.4301 (AISI 304) | BSS-12                                                                             | 6901321 | Mounting clamp for smooth and threaded barrel sensors; material: Polypropylene                                                                                                             |
|  |         |                                                                                              |  |         |                                                                                                                                                                                            |