

# Inductive proximity sensors

## IM 12 series, sensing range 6 / 10 mm

### DC 3-wire, metal housing



**Triplex series**

#### Features

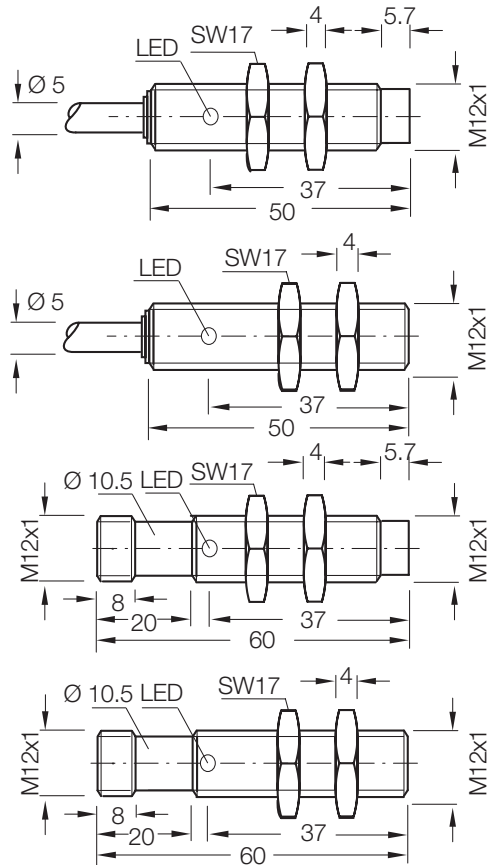


- ▶ Triple sensing range
- ▶ Installation quasi flush or non-flush in metal
- ▶ PNP or NPN output
- ▶ Normally open function and normally closed function
- ▶ High switching frequency
- ▶ Short-circuit protection (pulsed)
- ▶ Robust brass housing, chrome-plated with fine thread M12 x 1 mm
- ▶ Cable or connector
- ▶ Enclosure rating IP 67
- ▶ LED status indicator

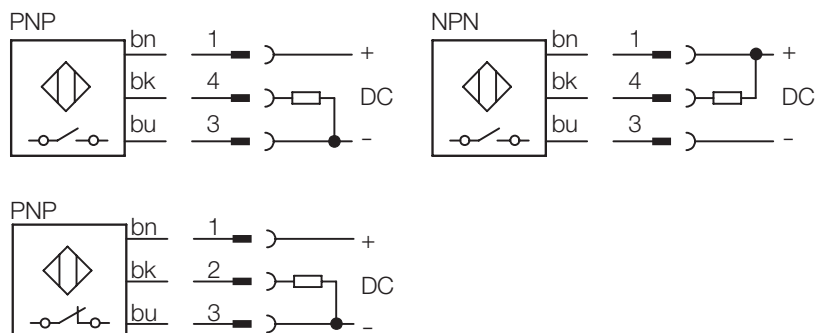
#### Accessories

Round connectors

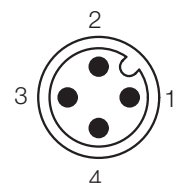
Mounting bracket



#### Connection diagram



| Wire colour | Contact | Assignment |
|-------------|---------|------------|
| bn brown    | 1       | + V DC     |
| bk black    | 2/4     | NC/NO      |
| bu blue     | 3       | - V DC     |



## Electrical and mechanical data

|                                                       |                                         |                                          |                                   |
|-------------------------------------------------------|-----------------------------------------|------------------------------------------|-----------------------------------|
| <b>Operating voltage</b> $U_b$                        | 10 ... 30 V DC                          | <b>Short-circuit protection (pulsed)</b> | yes                               |
| <b>Ripple</b> $U_{ss}$                                | $\leq 20\%$ of $U_b$                    | <b>Reverse polarity protection</b>       | yes                               |
| <b>Voltage drop</b> $U_d$<br>(at $I_a$ max.)          | $\leq 2$ V                              | <b>Power-up pulse suppression</b>        | yes                               |
| <b>Power consumption</b><br>(without load)            | $\leq 10$ mA                            | <b>Enclosure rating</b> to EN 60529      | IP 67                             |
| <b>Continuous current</b> $I_a$                       | $\leq 200$ mA                           | <b>Shock and vibration stress</b>        | 30 g, 11 ms<br>10 ... 55 Hz, 1 mm |
| <b>Time delay before availability</b> $t_v$           | $\leq 100$ ms                           | <b>Ambient temperature</b> $T_a$         | - 25 ... + 70 °C                  |
| <b>Hysteresis</b> H                                   | 1 % ... 15 % of $s_r$ (5 % typ.)        | <b>Housing material</b>                  | Brass, chrome-plated, plastic     |
| <b>Repeatability</b> R<br>( $U_b$ and $T_a$ constant) | $\leq 5\%$ of $s_r$                     | <b>Tightening torque</b>                 | 10 Nm                             |
| <b>Temperature drift EMC</b>                          | $\pm 10\%$ of $s_r$<br>to EN 60 947-5-2 | <b>Connection cable</b>                  | PVC, 3 x 0.34 mm <sup>2</sup>     |

## Selection table

| Sensing range $s_n$<br>mm | Installation in metal                                                                 | Switching output | Output function                                                                     | Switching frequency f<br>in Hz | Connection           | Type           | Order Number |
|---------------------------|---------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------|--------------------------------|----------------------|----------------|--------------|
| 6                         |  * | PNP              |  | 800                            | Cable 2 m            | IM12-06BPS-ZW1 | 6027509      |
| 6                         |  * | PNP              |  | 800                            | Cable 2 m            | IM12-06BPO-ZW1 | 6027510      |
| 6                         |  * | PNP              |  | 800                            | Connector M12 x 1 mm | IM12-06BPS-ZC1 | 6027511      |
| 10                        |    | PNP              |  | 400                            | Cable 2 m            | IM12-10NPS-ZW1 | 6027512      |
| 10                        |    | NPN              |  | 400                            | Cable 2 m            | IM12-10NNS-ZW1 | 6027513      |
| 10                        |    | PNP              |  | 400                            | Connector M12 x 1 mm | IM12-10NPS-ZC1 | 6027514      |

\* Installation notes "quasi flush"

When mounting in conductible materials the sensors have to be installed with a distance A to the surface.

**A** Steel, metal = 2 mm / **A** Stainless steel = 1 mm

Other output functions available on request