

Proximity Inductive Sensors - Ecolab certified Standard and Extended Range, Stainless Steel Housing Types ICS, IP69K, M30



- Sensing distance: 10 to 22 mm
- Flush or non-flush mountable
- Short or long body versions
- Rated operational voltage (U_b): 10 - 36 VDC
- Output: DC 200 mA, NPN or PNP
- Normally open or normally closed
- LED indication for output ON, short-circuit and overload
- Protection: reverse polarity, short circuit and transients
- M12 plug version
- According to IEC 60947-5-2
- High-pressure washdown resistant
- Ecolab certified, FDA-certified plastic
- Laser engraved on the housing, permanently legible
- Extended temperature range: $-40^{\circ}\text{C} \dots +85^{\circ}\text{C}$
- CSA certified for Hazardous Locations

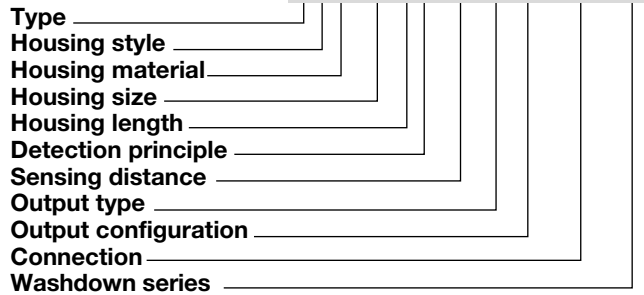
Product Description

A family of inductive proximity switches in stainless steel (AISI 316L) ideal for food and beverage applications where sensors are exposed to high pressure and high temperature cleaning processes.

They are fully sealed and resistant to all common acid and alkaline cleaning agents and disinfectants (Ecolab certified). IP68 and IP69K-rated products. Output is open collector NPN or PNP transistors.



Ordering Key **ICS30LF10NOM1-FB**



Type Selection

| Connec- tion | Body style | Rated operating distance S_n | Ordering no. NPN, Normally open | Ordering no. PNP, Normally open | Ordering no. NPN, Normally closed | Ordering no. PNP, Normally closed |
|-----------------------|---------------|--------------------------------------|---------------------------------------|---------------------------------------|---|---|
| Standard range | | | | | | |
| Plug | Short | 10 mm ¹⁾ | ICS30SF10NOM1-FB | ICS30SF10POM1-FB | ICS30SF10NCM1-FB | ICS30SF10PCM1-FB |
| Plug | Short | 15 mm ²⁾ | ICS30SN15NOM1-FB | ICS30SN15POM1-FB | ICS30SN15NCM1-FB | ICS30SN15PCM1-FB |
| Plug | Long | 10 mm ¹⁾ | ICS30LF10NOM1-FB | ICS30LF10POM1-FB | ICS30LF10NCM1-FB | ICS30LF10PCM1-FB |
| Plug | Long | 15 mm ²⁾ | ICS30LN15NOM1-FB | ICS30LN15POM1-FB | ICS30LN15NCM1-FB | ICS30LN15PCM1-FB |
| Extended range | | | | | | |
| Plug | Short | 15 mm ¹⁾ | ICS30SF15NOM1-FB | ICS30SF15POM1-FB | ICS30SF15NCM1-FB | ICS30SF15PCM1-FB |
| Plug | Short | 22 mm ²⁾ | ICS30SN22NOM1-FB | ICS30SN22POM1-FB | ICS30SN22NCM1-FB | ICS30SN22PCM1-FB |
| Plug | Long | 15 mm ¹⁾ | ICS30LF15NOM1-FB | ICS30LF15POM1-FB | ICS30LF15NCM1-FB | ICS30LF15PCM1-FB |
| Plug | Long | 22 mm ²⁾ | ICS30LN22NOM1-FB | ICS30LN22POM1-FB | ICS30LN22NCM1-FB | ICS30LN22PCM1-FB |

¹⁾ For flush mounting in metal

²⁾ For non-flush mounting in metal

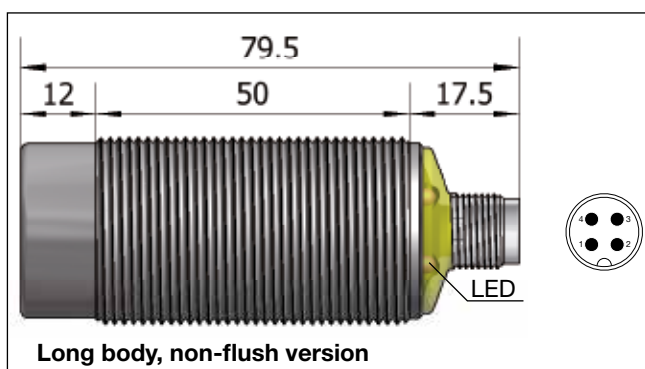
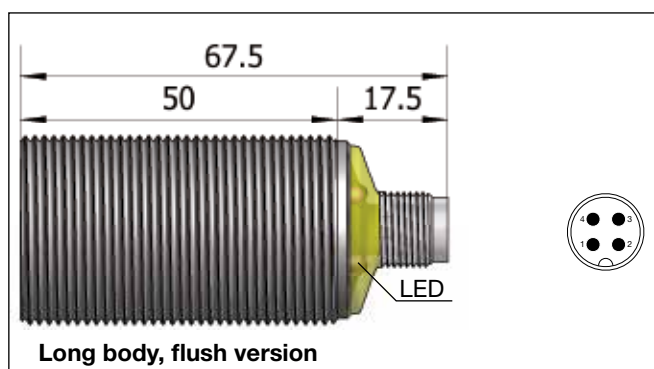
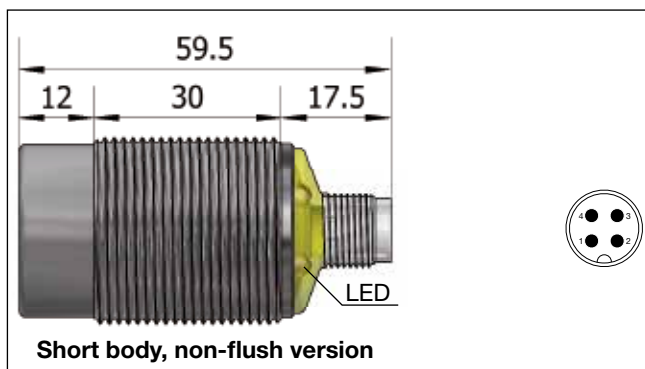
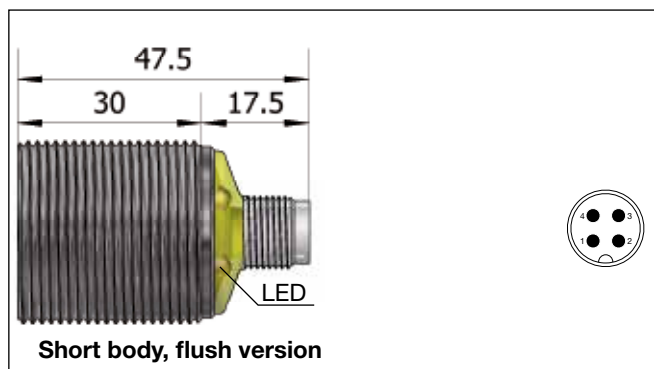
Specifications

| | | | |
|-------------------------------------|--|---|---|
| Rated operational voltage (U_b) | 10 to 36 VDC (ripple incl.) | Voltage transient | 1 kV/0.5 J |
| Ripple | $\leq 10\%$ | Power ON delay (t_v) | ≤ 20 ms |
| Output current (I_a) | ≤ 200 mA @ 50°C (≤ 150 mA @ $50-80^{\circ}\text{C}$) (≤ 100 mA @ $80-85^{\circ}\text{C}$) | Operating frequency (f) | ≤ 1000 Hz |
| OFF-state current (I_r) | ≤ 10 μA | Indication for output ON | Activated LED, yellow NO version Target present NC version Target not present |
| No load supply current (I_o) | ≤ 15 mA | Indication for short circuit/ overload | LED blinking (f = 2 Hz) |
| Voltage drop (U_d) | Max. 2 VDC @ 200 mA | Assured operating sensing distance (S_a) | $0 \leq S_a \leq 0.81 \times S_n$ |
| Protection | Reverse polarity, short-circuit, transients | | |

Specifications (cont.)

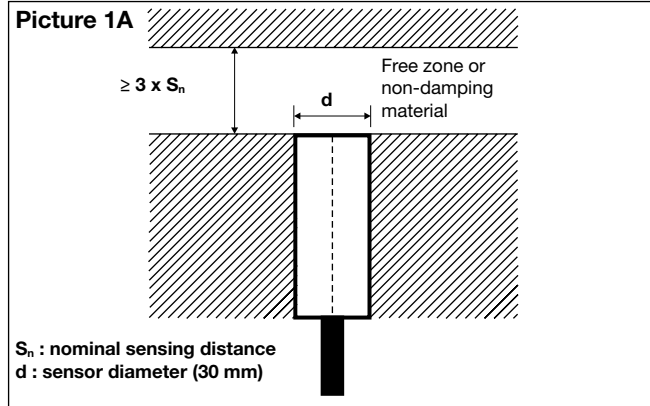
| | | | |
|---|---|---|--|
| Effective operating distance (S_r) | $0.9 \times S_n \leq S_r \leq 1.1 \times S_n$ | Dimensions | See diagrams below |
| Usable operating distance (S_u) | $0.85 \times S_r \leq S_u \leq 1.15 \times S_r$ | Tightening torque | 75 Nm |
| Repeat accuracy (R) | ≤ 5% | Approvals | cULus (UL508) cCSAus As Process Control Equipment for Hazardous Locations. - Class I, Division 2, Groups A, B, C and D. - T5, Enclosure Type 4. Ambient temperature Ta: -25° to +60°C CCC is not required for products with a maximum operating voltage of ≤ 36 V |
| Differential travel (H) (Hysteresis) | 1 to 20% of sensing dist. | Note: The terminal connector (version ...M1) was not evaluated. The suitability of the terminal connector should be determined in the end-use application. | |
| Ambient temperature Operating | -40° to +85°C (-40° to +185°F) short exposure (15') to 100°C during cleaning process | | |
| Storage | -40° to +85°C (-40° to +185°F) | | |
| Shock and vibration | IEC 60947-5-2/7.4 | | |
| Housing material Body | Stainless steel (AISI 316L) | EMC protection | According to IEC 60947-5-2 |
| Plug | Plastic | IEC 61000-4-2 (ESD) | 8 kV air discharge, 4 kV contact discharge |
| Front | Grey PPS - FDA-certified | IEC 61000-4-3 | 3 V/m |
| Back part | Grilamid | IEC 61000-4-4 | 2 kV |
| Connection Plug | M12 x 1 | IEC 61000-4-6 | 3 V |
| Degree of protection | IIP67, IP68 (1 m, 7 days), IP69K | IEC 61000-4-8 | 30 A/m |
| Weight (cable/nuts included) | Max. 130 g | MTTF_a | 750 years @ 50°C (122°F) |

Dimensions (mm)

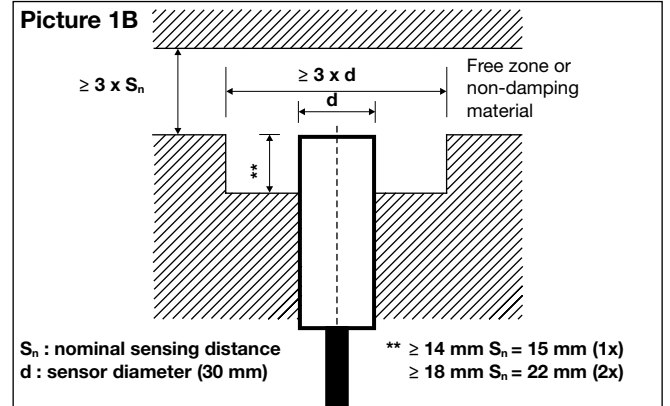


Installation

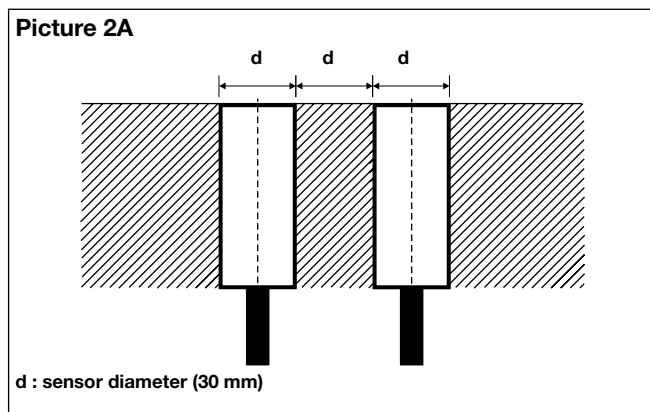
Flush mountable proximity switches, when installed in damping material, must be according to Picture 1A.



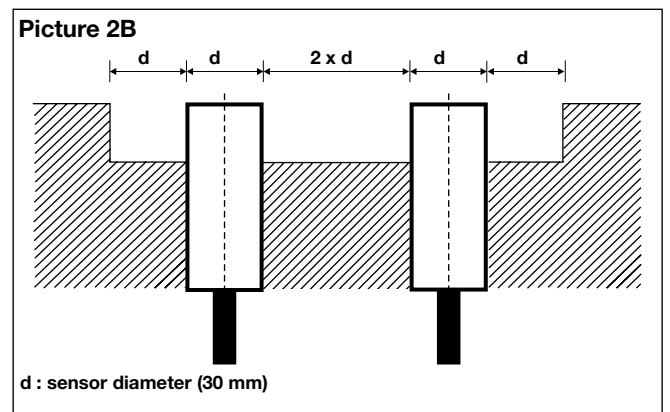
Non-flush mountable proximity switches, when installed in damping material, must be according to Picture 1B.



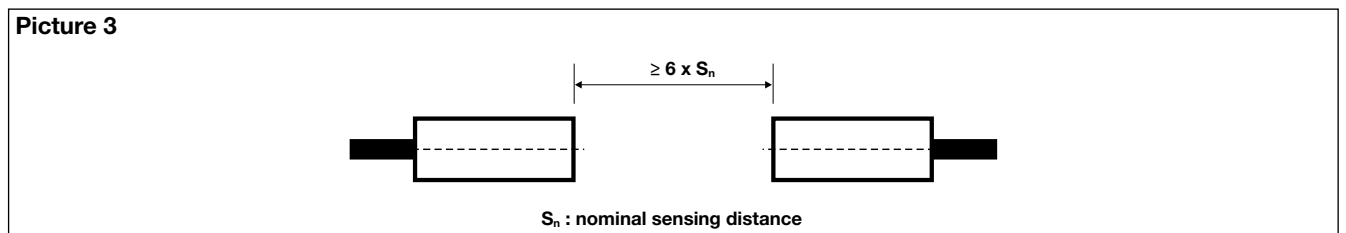
Flush mountable proximity switches, when installed together in damping material, must be according to Picture 2A.



Non-flush mountable proximity switches, when installed together in damping material, must be according to Picture 2B.



For sensors installed opposite each other, a minimum space of $6 \times S_n$ (the nominal sensing distance) must be observed (See Picture 3).



Wiring Diagram

