IMT 12

Inductive sensor M12 / all-metal housing / factor 1



PRODUCT-HIGHLIGHTS

- One-piece full stainless-steel housing
- Long operating range
- Factor 1 sensor on steel and aluminium
- Extremely robust
- Pressure-tight / watertight IP 68 / IP 69K
- IO-Link 1.1

Sensor data	
Rated operating distance S_n	6 mm[1] / 10 mm[2]
Ensured operating distance S_a	≤ 4.86 mm[1] / ≤ 8.1 mm[2]
Hysteresis	3 % S_r ≤ Hyst ≤ 15 % S_r[3]
Repeatability	≤ 0.2 mm[1] / ≤ 0.3 mm[2]
Temperature drift	≤ 10 % S_r

Functions	
Indicator LED yellow	Switching output indicator
Adjustment possibilities	N.O. / N.C. Wide variety of adjustment possibilities via IO-Link
Default settings	N.O.

Electrical data	
Operating voltage, $+U_B$	10 … 30 V DC
Residual ripple	≤ 20 % U_B
No-load current, I_0	≤ 10 mA
Output current, Ie	≤ 200 mA
Protective circuits	Reverse-polarity protection, U_B / short-circuit protection (Q)
Residual current	≤ 0.1 mA
Voltage drop, U_D	≤ 2.0 V DC at 200 mA
Switching output, Q	PNP
Output function	N.O./N.C.[4]
Power-on delay	≤ 10 ms
Switching frequency f (ti/tp 1:1)	≤ 0.6 kHz[1] / ≤ 0.4 kHz[2]

Mechanical data	
Dimensions	M12 x 60 mm
Mounting	Flush / non-flush (see selection table)
Enclosure rating	IP 68 (80 bar) [5/6] / IP 69K[6]
Material housing / active surface	Stainless steel, V2A / 1.4305 / AISI 303
Type of connection	Stainless steel plug, V2A, M12x1, 4-pin
Ambient temperature: operation	-25 … +85 °C[7]
Ambient temperature: storage	-25 … +85 °C
Weight	25 g
Vibration and impact resistance	EN IEC 60947-5-2
Tightening torque	20 Nm
Standard target FE 360	18 mm x 18 mm x 1 mm[1] / 30 mm x 30 mm x 1 mm[2]

IO-Link	
Communication mode	COM 2
Min. cycletime	10.4 ms
SIO mode	Compatible
Length process data	7 Bit
Specification	1.1
ISDU	Not compatible

Correction factors	Target	Installation material
Steel FE 360	1[1/2]	0.7[1] / -[2]
V2A 1 / 2 mm	0.4/0.8[1] / 0.15/0.85[2]	0.8[1] / -[2]
CuZn	1.3[1] / 1.4[2]	1.05[1] / -[2]
Al	1[1/2]	1.15[1] / -[2]
Cu	0.85[1] / 0.8[2]	-

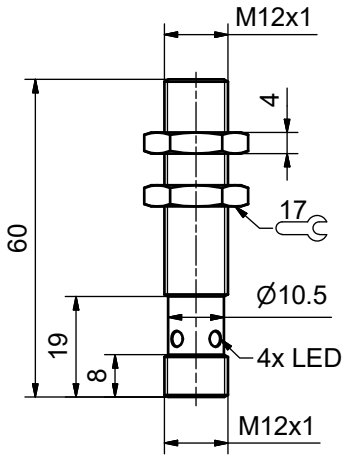
[1] Flush devices [2] Non-flush devices [3] S_r (Effective switching distance) = ± 10 % of S_n [4] Adjustable / parameterisable via IO-Link [5] In zone "P"
[6] With connected IP 68 / IP 69K plug [7] UL: -25 … +70 °C

All data measured according to standard EN IEC 60947-5-2 with U_B = 20 ... 30 V DC, T_A = 23 °C ± 5 °C
The switching distance of the sensor must be multiplied by the correction factor of the material. The switching distance on aluminium is thus $S_{n\,AL} = S_n \times CF_{AL}$.
For flush mounting the distance is multiplied by the additional correction factor of the backing material, S_n Al= $S_n \times CF_{AL} \times CF_{\text{mounting material}}$

Switching distance	Mounting	Switching output	Type of connection	Part number	Article number
6 mm	Flush	PNP	Stainless steel plug, V2A, M12x1, 4-pin, IO-Link	IMT 12-FM-S-B2-PSL-L4M	996-01027
10 mm	Non-flush	PNP	Stainless steel plug, V2A, M12x1, 4-pin, IO-Link	IMT 12-FM-S-NB2-PSL-L4M	996-01028

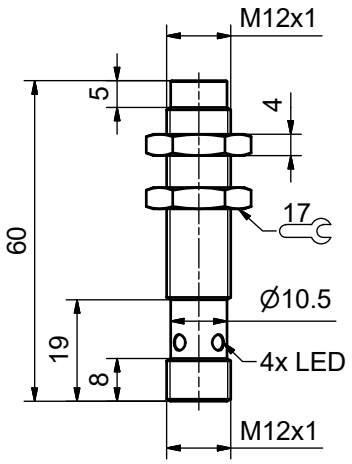
Plug connection[1]

153-13619



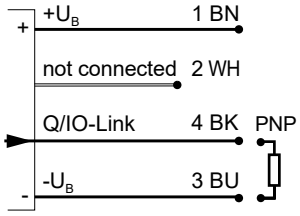
Plug connection[2]

153-13666



Connection, 4-pin, IO-Link

154-00586

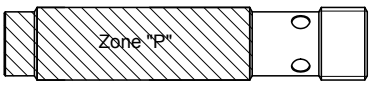


[5] Zone „P“

155-03422

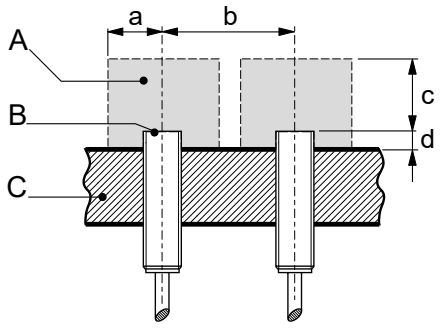


155-03423



Mounting

155-03390



A: Metal-free zone	a: 12 mm[1] / 30 mm[2]
B: Active surface	b: 50 mm[1] / 120 mm[2]
C: Backing material	c: 18 mm[1] / 30 mm[2]
	d: 0 mm[1] / 22 mm[2]