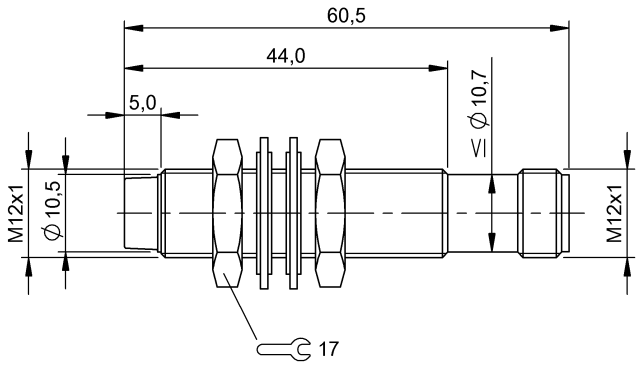
Inductive Sensors

BES 113-356-SA31-S4
Order Code: BES02M8



Basic features

Additional features	with internal function checking
Approval/Conformity	CE EAC WEEE
Basic standard	IEC 60947-5-2

Electrical connection

Connection	M12x1-Male, 4-pin, A-coded
Polarity reversal protected	yes
Protection against device mix-ups	yes
Short-circuit protection	yes

Electrical data

Load capacitance max. at Ue	0.15 µF
Min. operating current Im	5 mA
No-load current Io max., damped	10 mA
No-load current Io max., undamped	10 mA
Operating voltage Ub	20...30 VDC
Output resistance Ra	Open collector
Rated insulation voltage Ui	75 V DC
Rated operating current Ie	130 mA
Rated operating voltage Ue DC	24 V
Rated short circuit current	100 A
Ready delay tv max.	10 ms
Residual current Ir max.	110 µA
Ripple max. (% of Ue)	15 %
Switching frequency	300 Hz
Utilization category	DC -13
Voltage drop static max.	3.5 V

Environmental conditions

Ambient temperature	0...70 °C
Contamination scale	3
EN 60068-2-27, Shock	Half-sinus, 30 gn, 11 ms
EN 60068-2-6, Vibration	55 Hz, amplitude 1 mm, 3x30 min
Protection degree	IP67

Material

Housing material	Stainless steel
Material sensing surface	LCP

Mechanical data

Dimension	Ø 12 x 60.5 mm
Installation	non-flush
Size	M12x1
Tightening torque	12 Nm

Output/Interface

Switching output	PNP normally open (NO)

Range/Distance

Assured operating distance Sa	3.2 mm
Hysteresis H max. (% of Sr)	15.0 %
Rated operating distance Sn	4 mm
Real switching distance sr	4 mm
Repeat accuracy max. (% of Sr)	5.0 %
Temperature drift max. (% of Sr)	10 %
Tolerance Sr	±10 %

Remarks

Test pulses ≤ 0.5 ms typ. 160 Hz are superimposed on the output signal which are missing when there is a fault (single fault) in the sensor.
The sensor is functional again after the overload has been eliminated.

Connector Drawings

Wiring Diagrams