



Basic features

Additional features	Function monitoring
Approval/Conformity	CE UKCA WEEE
Base type deviation	Diagnostic function, Lg
Basic standard	IEC 60947-5-2

Display/Operation

Function indicator	no
Power indicator	no

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 I_m	1 mA
No-load current I_o max., damped	25 mA
No-load current I_o max., undamped	25 mA
Operating voltage U_b	20...30 VDC
Output resistance R_a	Open collector
Rated insulation voltage U_i	75 V DC
Rated operating current I_e	130 mA
Rated operating voltage U_e DC	24 V
Rated short circuit current	100 A
Ready delay t_v max.	50 ms
Residual current I_r max.	80 µA
Ripple max. (% of U_e)	15 %
Switching frequency	300 Hz
Utilization category	DC -12
Voltage drop static max.	2.5 V

Environmental conditions

Ambient temperature	-25...70 °C
Contamination scale	3
EN 60068-2-27, Shock	Half-sinus, 30 g _n , 11 ms
EN 60068-2-6, Vibration	55 Hz, amplitude 1 mm, 3x30 min
IP rating	IP67

Functional safety

MTTF (40 °C)	990 a
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Interface

Switching output	PNP normally closed (NC)
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Inductive Sensors
BES 113-3019-SA1-S4
Order Code: BES02M5



Material

Housing material	Brass, nickel-plated
Material sensing surface	PA 12

Mechanical data

Dimension	Ø 12 x 91.5 mm
Installation	non-flush
Size	M12x1
Tightening torque	10 Nm

Range/Distance

Assured operating distance Sa	2.9 mm
Hysteresis H max. (% of Sr)	15.0 %
Rated operating distance Sn	3.7 mm
Real switching distance sr	3.7 mm
Repeat accuracy max. (% of Sr)	5.0 %
Temperature drift max. (% of Sr)	10 %
Tolerance Sr	-10 %/+20 %

Remarks

Max. cable length: 50 m.

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.

For more information about MTTF and B10d see MTTF / B10d Certificate

Indication of the MTTF- / B10d value does not represent a binding composition and/or life expectancy assurance; these are simply experiential values with no warranty implications. These declared values also do not extend the expiration period for defect claims or affect it in any way.

Connector Drawings



Wiring Diagrams

