



## Basic features

Approval/Conformity	CE UKCA EAC WEEE
Basic standard	IEC 60947-5-2

## Display/Operation

Function indicator	yes
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 $U_e$	1 $\mu$ F
Min. operating current $I_m$	0 mA
No-load current $I_o$ max., damped	20 mA
No-load current $I_o$ max., undamped	12 mA
Operating voltage $U_b$	10...30 VDC
Output resistance $R_a$	4.7 kOhm + 2D
Rated insulation voltage $U_i$	75 V DC
Rated operating current $I_e$	200 mA
Rated operating voltage $U_e$ DC	24 V
Rated short circuit current	100 A
Ready delay $t_v$ max.	10 ms
Residual current $I_r$ max.	80 $\mu$ A
Ripple max. (% of $U_e$ )	15 %
Switching frequency	1000 Hz
Utilization category	DC -13
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 <sub>n</sub> , 11 ms
EN 60068-2-6, Vibration	55 Hz, amplitude 1 mm, 3x30 min
IP rating	IP67

## Functional safety

MTTF (40 °C)	860 a
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## Interface

Switching output	PNP normally open (NO)
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Inductive Sensors  
**BES 516-325-SA45**  
Order Code: **BES035E**



**Material**

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

**Mechanical data**

Dimension	Ø 12 x 31 mm
Installation	for flush mounting
Size	M12x1
Tightening torque	15 Nm

**Range/Distance**

Assured operating distance Sa	1.6 mm
Hysteresis H max. (% of Sr)	15.0 %
Rated operating distance Sn	2 mm
Real switching distance sr	2 mm
Repeat accuracy max. (% of Sr)	5.0 %
Temperature drift max. (% of Sr)	10 %
Tolerance Sr	±10 %

**Remarks**

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**

