



1) O-Ring with thrust ring



### Basic features

Approval/Conformity	CE UKCA cULus WEEE
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	0.5 µF
Min. operating current I <sub>m</sub>	0 mA
No-load current I <sub>o</sub> max., damped	10 mA
No-load current I <sub>o</sub> max., undamped	10 mA
Operating voltage U <sub>b</sub>	10...30 VDC
Output resistance R <sub>a</sub>	33.0 kOhm + D
Rated insulation voltage U <sub>i</sub>	75 V DC
Rated operating current I <sub>e</sub>	200 mA
Rated operating voltage U <sub>e</sub> DC	24 V
Rated short circuit current	100 A
Ready delay t <sub>v</sub> max.	10 ms
Residual current I <sub>r</sub> max.	20 µA
Ripple max. (% of U <sub>e</sub> )	15 %
Switching frequency	1000 Hz
Utilization category	DC -13
Voltage drop static max.	1.5 V

### Environmental conditions

Ambient temperature	-25...80 °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	IP68

### Functional safety

MTTF (40 °C)	720 a
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Inductive Sensors  
**BES 516-100-S45-S4-D**  
**Order Code: BHS0001**



**Interface**

<b>Switching output</b>	PNP normally open/normally closed (NO/NC)
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**Material**

<b>Housing material</b>	Stainless steel
<b>Material sensing surface</b>	EP
<b>Support ring material</b>	PTFE

**Mechanical data**

<b>Dimension</b>	Ø 12 x 78 mm
<b>Installation</b>	for flush mounting
<b>Mounting part</b>	M12x1
<b>Pressure rating max.</b>	500 bar
<b>Pressure rating, note</b>	oil pressure rated
<b>Sealing ring, size</b>	5.85 x 2.4 mm
<b>Size</b>	M12x1
<b>Tightening torque</b>	15 Nm ±10 %

**Range/Distance**

<b>Assured operating distance Sa</b>	1.2 mm
<b>Hysteresis H max. (% of Sr)</b>	15.0 %
<b>Rated operating distance Sn</b>	1.5 mm
<b>Real switching distance sr</b>	1.5 mm
<b>Repeat accuracy max. (% of Sr)</b>	5.0 %
<b>Temperature drift max. (% of Sr)</b>	10 %
<b>Tolerance Sr</b>	±10 %

**Remarks**

The sensor is functional again after the overload has been eliminated.  
 With connector, e.g. BKS-S 20-... total length = switch length +18 mm.  
 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**

