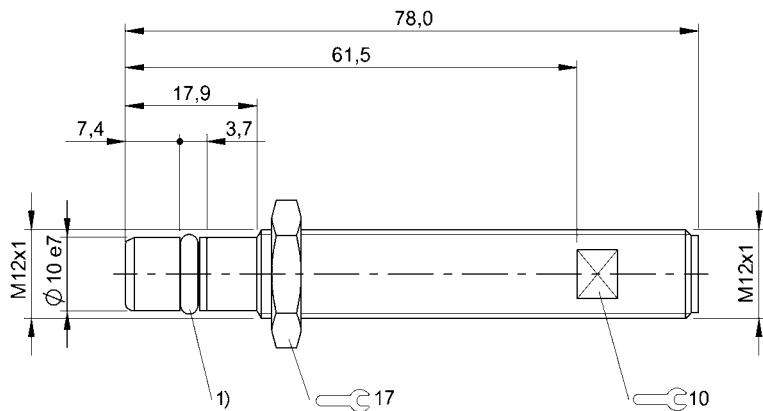


Inductive Sensors  
BES 516-100-S45-S4-D  
Order Code: BHS0001

**BALLUFF**



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 Im	0 mA
No-load current Io max., damped	10 mA
No-load current Io max., undamped	10 mA
Operating voltage Ub	10...30 VDC
Output resistance Ra	33.0 kOhm + D
Rated insulation voltage Ui	75 V DC
Rated operating current Ie	200 mA
Rated operating voltage Ue DC	24 V
Rated short circuit current	100 A
Ready delay tv max.	10 ms
Residual current Ir max.	20 µA
Ripple max. (% of Ue)	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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#### Interface

Switching output	PNP normally open/normally closed (NO/NC)
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#### Material

Housing material	Stainless steel
Material sensing surface	EP
Support ring material	PTFE

#### Mechanical data

Dimension	Ø 12 x 78 mm
Installation	for flush mounting
Mounting length	43.60 mm
Mounting part	M12x1
Pressure rating max.	500 bar
Pressure rating, note	oil pressure rated
Sealing ring, size	5.85 x 2.4 mm
Size	M12x1
Tightening torque	15 Nm ±10 %

#### Range/Distance

Assured operating distance Sa	1.2 mm
Hysteresis H max. (% of Sr)	15.0 %
Rated operating distance Sn	1.5 mm
Real switching distance sr	1.5 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.  
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

