

### Basic features

Additional features	Factor 1 Weld immune
Approval/Conformity	CE UKCA cULus WEEE
Basic standard	IEC 60947-5-2
Principle of operation	Inductive sensor
Trademark	Factor 1

### 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 Ue	1 µF
Magnetic field strength, interference field	100 kA/m
Min. operating current Im	0 mA
No-load current Io max., damped	15 mA
No-load current Io max., undamped	10 mA
Operating voltage Ub	10...30 VDC
Output resistance Ra	33.0 kOhm
Protection class	II
Rated insulation voltage Ui	250 V AC
Rated operating current Ie	200 mA
Rated operating voltage Ue DC	24 V
Rated short circuit current	100 A
Ready delay tv max.	15 ms
Residual current Ir max.	80 µA
Ripple max. (% of Ue)	10 %
Switching frequency	2000 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 gn, 11 ms
EN 60068-2-6, Vibration	55 Hz, amplitude 1 mm, 3x30 min
IP rating	IP67
Magnetic field immune	magnetic field immune (AC/DC)

### Functional safety

MTTF (40 °C)	320 a
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Inductive Sensors  
BES M12MF1-PSC30A-S04G-W  
Order Code: BES02JZ

**BALLUFF**

Interface

Switching output PNP normally open (NO)

Material

Housing material Brass, PTFE coated  
Material sensing surface LCP/PTFE

Mechanical data

Dimension Ø 12 x 50 mm  
Installation for flush mounting  
Mounting length 36.00 mm  
Size M12x1  
Tightening torque 10 Nm

Range/Distance

Assured operating distance Sa 2.4 mm  
Hysteresis H max. (% of Sr) 15.0 %  
Rated operating distance Sn 3 mm  
Real switching distance sr 3 mm  
Repeat accuracy max. (% of Sr) 5.0 %  
Switching distance marking ■■  
Temperature drift max. (% of Sr) 10 %  
Tolerance Sr ±10 %

Remarks

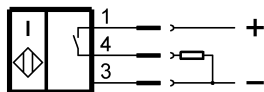
The sensor is functional again after the overload has been eliminated.  
For more information about MTTF and B10d see MTTF / B10d Certificate

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.

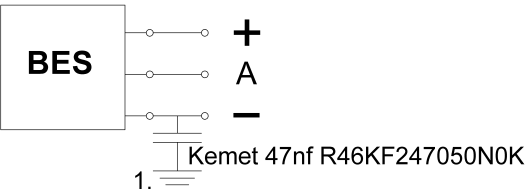
Connector Drawings



Wiring Diagrams (Schematic)



Installation remarks



1) Machine GND

Distance c	$\geq 2 \times d1$
Distance b (Ferrous)	$\geq 1.5 \text{ mm}$
Distance b (non-ferrous)	$\geq 0 \text{ mm}$
Distance f	$\geq 3 \times S_n$
Distance a	$\geq 3 \times d1$