

### Basic features

<b>Additional features</b>	Factor 1 Weld immune
<b>Approval/Conformity</b>	CE UKCA cULus WEEE
<b>Basic standard</b>	IEC 60947-5-2
<b>Trademark</b>	Factor 1

### Display/Operation

<b>Function indicator</b>	yes
<b>Power indicator</b>	no

### Electrical connection

<b>Connection</b>	M12x1-Male, 4-pin, A-coded
<b>Polarity reversal protected</b>	yes
<b>Protection against device mix-ups</b>	yes
<b>Short-circuit protection</b>	yes

### Electrical data

<b>Load capacitance max. at Ue</b>	1 µF
<b>Magnetic field strength, interference field</b>	100 kA/m
<b>Min. operating current I<sub>m</sub></b>	0 mA
<b>No-load current I<sub>o</sub> max., damped</b>	15 mA
<b>No-load current I<sub>o</sub> max., undamped</b>	10 mA
<b>Operating voltage U<sub>b</sub></b>	10...30 VDC
<b>Output resistance R<sub>a</sub></b>	33.0 kOhm
<b>Protection class</b>	II
<b>Rated insulation voltage U<sub>i</sub></b>	250 V AC
<b>Rated operating current I<sub>e</sub></b>	200 mA
<b>Rated operating voltage U<sub>e</sub> DC</b>	24 V
<b>Rated short circuit current</b>	100 A
<b>Ready delay t<sub>v</sub> max.</b>	15 ms
<b>Residual current I<sub>r</sub> max.</b>	80 µA
<b>Ripple max. (% of U<sub>e</sub>)</b>	10 %
<b>Switching frequency</b>	2000 Hz
<b>Utilization category</b>	DC -13
<b>Voltage drop static max.</b>	2.5 V

### Environmental conditions

<b>Ambient temperature</b>	-25...70 °C
<b>Contamination scale</b>	3
<b>EN 60068-2-27, Shock</b>	Half-sinus, 30 g <sub>n</sub> , 11 ms
<b>EN 60068-2-6, Vibration</b>	55 Hz, amplitude 1 mm, 3x30 min
<b>IP rating</b>	IP67
<b>Magnetic field immune</b>	magnetic field immune (AC/DC)

### Functional safety

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



**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  
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**

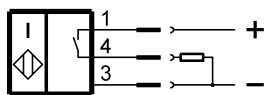
The sensor is functional again after the overload has been eliminated.  
For more information about MTTF and B10d see MTTF / B10d Certificate

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.

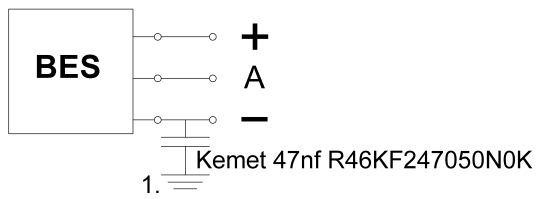
**Connector Drawings**



**Wiring Diagrams**



**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	$\geq 3 \times d1$