



### Basic features

<b>Additional features</b>	Function monitoring*
<b>Approval/Conformity</b>	CE UKCA cULus WEEE
<b>Basic standard</b>	IEC 60947-5-2

### 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>	0.5 $\mu$ F
<b>Min. operating current I<sub>m</sub></b>	0 mA
<b>No-load current I<sub>o</sub> max., damped</b>	12 mA
<b>No-load current I<sub>o</sub> max., undamped</b>	5 mA
<b>Operating voltage U<sub>b</sub></b>	10...30 VDC
<b>Output resistance R<sub>a</sub></b>	33.0 kOhm + D
<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>	10 ms
<b>Residual current I<sub>r</sub> max.</b>	10 $\mu$ A
<b>Ripple max. (% of U<sub>e</sub>)</b>	15 %
<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>	IP68

### Functional safety

<b>MTTF (40 °C)</b>	675 a
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### Interface

<b>Switching output</b>	PNP normally open (NO)
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Inductive Sensors  
**BES M12MI-PSC20B-S04G-M02**  
**Order Code: BES05F8**



**Material**

Housing material	Brass, Nickel-free coated
Material sensing surface	LCP

**Mechanical data**

Dimension	Ø 12 x 65 mm
Installation	for flush mounting
Size	M12x1
Tightening torque	10 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.

\* Monitor output: High level (max. 50 mA  $U_d \leq 5$  V), as long as no cable break on PIN 1: +, PIN 2: - or PIN 3: monitor output present

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**

