

**Basic features**

Approval/Conformity	CE UKCA cULus WEEE
Basic standard	IEC 60947-5-2
Principle of operation	Magnetic field sensor

**Display/Operation**

Function indicator	no
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**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**

Assured switching field strength $H_a$	2 kA/m
Hysteresis $H$ max. (% of $H_n$ )	45 %
Load capacitance max. at $U_e$	1 $\mu$ F
No-load current $I_o$ max., undamped	10 mA
Operating voltage $U_b$	10...30 VDC
Output resistance $R_a$	Open drain
Rated insulation voltage $U_i$	75 V DC
Rated operating current $I_e$	200 mA
Rated operating voltage $U_e$ DC	24 V
Rated short circuit current	100 A
Rated switch field strength $H_n$	1.2 kA/m
Residual current $I_r$ max.	80 $\mu$ A
Ripple max. (% of $U_e$ )	15 %
Switching frequency	10000 Hz
Turn-off delay $t_{off}$ max.	0.05 ms
Turn-on delay $t_{on}$ max.	0.05 ms
Utilization category	DC -13
Voltage drop static max.	3.1 V

**Environmental conditions**

Ambient temperature	-25...85 °C
Contamination scale	3
EN 60068-2-27, Shock	Half-sinus, 30 $g_n$ , 11 ms
EN 60068-2-6, Vibration	55 Hz, amplitude 1 mm, 3x30 min
ESD	4A(8KV)
Emission	Group 1, Class B
IP rating	IP67

**Functional safety**

MTTF (40 °C)	330 a
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Magnetic Sensors  
**BMF 12M-PS-D-2-S4**  
Order Code: **BMF0022**

**BALLUFF**

**Interface**

**Switching output** PNP normally open (NO)

**Material**

**Housing material** Brass, nickel-plated  
**Material sensing surface** PA 12  
**Surface protection** nickel-plated

**Mechanical data**

**Dimension** Ø 12 x 50 mm  
**Size** M12x1  
**Tightening torque** 15 Nm

**Range/Distance**

**Temp. drift max. (% of Hn)** 0.3 %

**Remarks**

The sensor is functional again after the overload has been eliminated.

The switching distance depends on the magnet used. Switching distances of >20 mm can be achieved.

UL-MARKINGS: - For use in NFPA 79 Applications only - Adapters providing field wiring means are available from the manufacturer. Refer to manufacturers information.

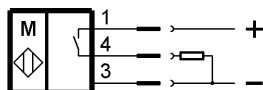
For more information about MTTF and B10d see MTTF / B10d Certificate

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**



## Technical Drawings

