



Basic features

Approval/Conformity	CE 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 μ 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 μ 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 gn, 11 ms
EN 60068-2-6, Vibration	55 Hz, amplitude 1 mm, 3x30 min
Protection degree	IP67

Functional safety

MTTF (40 °C)	225 a
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Magnetic Sensors
BMF 12M-NS-D-2-S4
Order Code: BMF0021

BALLUFF

Material

Housing material	Brass, nickel plated
Material sensing surface	PBTP
Surface protection	nickel plated

Mechanical data

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

Output/Interface

Switching output	NPN normally open (NO)
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Range/Distance

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

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

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

