



1) Sensing surface



### Basic features

<b>Application</b>	larger actuators Welding area
<b>Approval/Conformity</b>	cULus CE WEEE
<b>Basic standard</b>	IEC 60947-5-2
<b>Not incl. in scope of delivery</b>	Mounting bracket, e.g. BMF 305-HW-25
<b>Principle of operation</b>	Magnetic field sensor

### Display/Operation

<b>Function indicator</b>	yes
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### 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>Assured switching field strength <math>H_a</math></b>	2 kA/m
<b>Hysteresis <math>H_{max.}</math> (% of <math>H_n</math>)</b>	45 %
<b>Load capacitance max. at <math>U_e</math></b>	1 $\mu$ F
<b>Magnetic field frequency, interference field</b>	50...60 Hz
<b>Magnetic field strength, interference field</b>	200 kA/m
<b>No-load current <math>I_o</math> max., undamped</b>	20 mA
<b>Operating voltage <math>U_b</math></b>	10...30 VDC
<b>Output resistance <math>R_a</math></b>	3.0 kOhm + D + LED
<b>Rated insulation voltage <math>U_i</math></b>	75 V DC
<b>Rated operating current <math>I_e</math></b>	200 mA
<b>Rated operating voltage <math>U_e</math> DC</b>	24 V
<b>Rated short circuit current</b>	100 A
<b>Rated switch field strength <math>H_n</math></b>	1.2 kA/m
<b>Residual current <math>I_r</math> max.</b>	80 $\mu$ A
<b>Ripple max. (% of <math>U_e</math>)</b>	15 %
<b>Switching frequency</b>	10 Hz
<b>Turn-off delay <math>t_{off}</math> max.</b>	50 ms
<b>Turn-on delay <math>t_{on}</math> max.</b>	50 ms
<b>Utilization category</b>	DC -13
<b>Voltage drop static max.</b>	4 V

Magnetic Sensors  
**BMF 305M-PS-W-2-S4**  
Order Code: **BMF0067**

# BALLUFF

## Environmental conditions

Ambient temperature	-25...70 °C
Contamination scale	3
EN 60068-2-27, Shock	Half-sinus, 30 g <sub>n</sub> , 11 ms
EN 60068-2-6, Vibration	55 Hz, amplitude 1 mm, 3x30 min
ESD	2A (4 kV)
Emission	Group 1, Class B
IP rating	IP67
Magnetic field immune	weld-immune (AC)

## Interface

Switching output	PNP normally open (NO)
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## Remarks

EMC: Surge resistance  
External protection circuit is required. Document 825345, Section 2.  
The sensor is functional again after the overload has been eliminated.

## Material

Housing material	Aluminium
Material sensing surface	PU

## Mechanical data

Dimension	33.5 x 5 x 33.5 mm
Mounting part	Mounting bracket BMF 305-HW*

## Range/Distance

Temp. drift max. (% of Hn)	0.3 %
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## Connector Drawings



## Wiring Diagrams

