

1) Position sensor element, 2) see remarks, 3) see remarks, 4) see remarks



### Basic features

<b>Application</b>	Pneumatic cylinder with T-slot. For dimensions, see sketch in product view. Welding area
<b>Approval/Conformity</b>	CE UKCA cULus WEEE
<b>Basic standard</b>	IEC 60947-5-2
<b>Principle of operation</b>	Magnetic field sensor
<b>Scope of delivery</b>	Position sensor Protective cover Cable clip for T-slot Short guide

### Display/Operation

<b>Function indicator</b>	Active, LED yellow Error, LED red
<b>Power indicator</b>	External Power - LED green

### Electrical connection

<b>Cable</b>	TPU welding spark resistant Orange, 300 mm
<b>Cable diameter D</b>	3.2 mm
<b>Conductor cross-section</b>	0.10 mm <sup>2</sup>
<b>Connection</b>	M12x1-Male, 4-pin, A-coded
<b>Number of conductors</b>	4
<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 Ha</b>	5.2 kA/m
<b>Interference suppression time</b>	600 ms
<b>Load capacitance max. at Ue</b>	1.5 µF
<b>No-load current I<sub>o</sub> max., undamped</b>	18 mA
<b>Operating voltage U<sub>b</sub></b>	18...30 VDC
<b>Output resistance R<sub>a</sub></b>	Open drain
<b>Rated insulation voltage U<sub>i</sub></b>	75 V DC
<b>Rated operating current I<sub>e</sub></b>	50 mA
<b>Rated operating voltage U<sub>e</sub> DC</b>	24 V
<b>Rated short circuit current</b>	100 A
<b>Rated switch field strength H<sub>n</sub></b>	4.8 kA/m
<b>Residual current I<sub>r</sub> max.</b>	10 µA
<b>Utilization category</b>	DC -13

## Magnetic Sensors

# BMF 415KW-HAKKI-W-5-P3-S4-00,3

## Order Code: BMF00MZ

# BALLUFF

### Environmental conditions

Ambient temperature	0...80 °C
Contamination scale	3
EN 60068-2-27, Shock	Half-sinus, 30 g <sub>n</sub> , 11 ms, 3x6 Half-sinus, 100 g <sub>n</sub> , 2 ms, 3x8000
EN 60068-2-6, Vibration	55 Hz, amplitude 2 mm, 3x30 min 10...2000 Hz, amplitude 2 mm pp, 30 g <sub>n</sub> , 120 sweeps
ESD	2A (4 kV)
Emission	Group 1, Class A
IP rating	IP67

### Functional safety

MTTF (40 °C)	420 a
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### IO-Link

IO-Link Profil IDs	0x0002 SSP1.1 0x4000 Identification and Diagnosis
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### Interface

Baud rate	38.4 kBaud
Interface	IO-Link 1.1
Switching output	IO configurable NO/NC

### Material

Housing material	PA 12
Material jacket	TPU, welding spark resistant
Material sensing surface	PA 12

### Mechanical data

Dimension	5 x 6.4 x 34 mm
Mounting part	can be installed in T-slot from above
Size	T-slot

### Remarks

Damping magnet axially magnetized

Effective operating current I<sub>e</sub> with thermally coupled installation in metal.

Suitable for use in AC interference magnetic fields up to 140 mT / 110 kA/m with frequencies between 45 - 65 Hz

Suitable for use in MFDC interference magnetic fields up to 140 mT / 110 kA/m

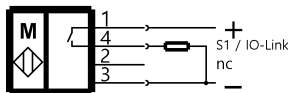
For more information about MTTF and B10d see MTTF / B10d Certificate

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.

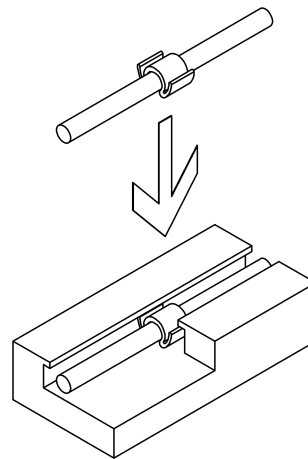
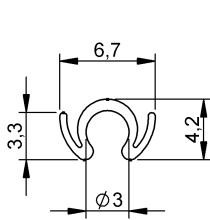
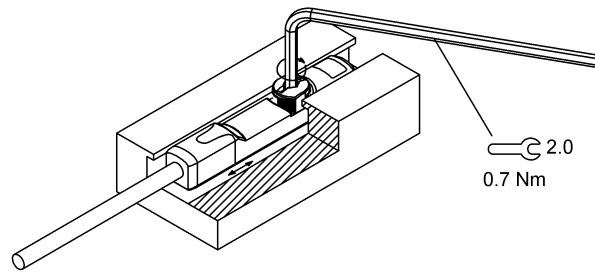
### Connector Drawings



### Wiring Diagrams

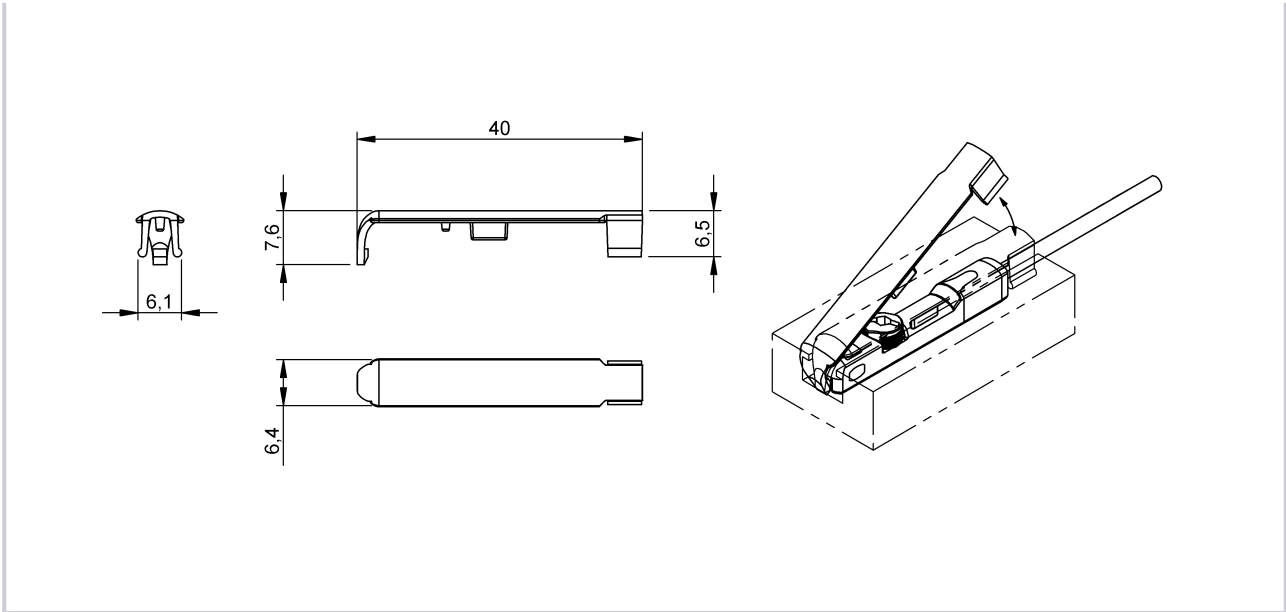


### Help Views



Magnetic Sensors  
BMF 415KW-HAKKI-W-5-P3-S4-00,3  
Order Code: BMF00MZ

**BALLUFF**



**Warning Symbols**

