



#### Basic features

Additional features	Factor 1 Weld immune
Approval/Conformity	CE UKCA cULus WEEE
Basic standard	IEC 60947-5-2
Principle of operation	Inductive sensor
Trademark	Factor 1

#### Display/Operation

Function indicator	yes
Power indicator	no

#### 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

Load capacitance max. at Ue	1 $\mu$ F
Magnetic field strength, interference field	100 kA/m
Min. operating current I <sub>m</sub>	0 mA
No-load current I <sub>o</sub> max., damped	15 mA
No-load current I <sub>o</sub> max., undamped	10 mA
Operating voltage U <sub>b</sub>	10...30 VDC
Output resistance R <sub>a</sub>	33.0 kOhm
Protection class	II
Rated insulation voltage U <sub>i</sub>	250 V AC
Rated operating current I <sub>e</sub>	200 mA
Rated operating voltage U <sub>e</sub> DC	24 V
Rated short circuit current	100 A
Ready delay t <sub>v</sub> max.	15 ms
Residual current I <sub>r</sub> max.	80 $\mu$ A
Ripple max. (% of U <sub>e</sub> )	10 %
Switching frequency	2000 Hz
Utilization category	DC-13
Voltage drop static max.	2.5 V

#### 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
IP rating	IP67
Magnetic field immune	magnetic field immune (AC/DC)

#### Functional safety

MTTF (40 °C)	320 a
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Interface

Switching output PNP normally open (NO)

Material

Housing material Brass, PTFE coated

Material sensing surface ceramic coated

Mechanical data

Dimension Ø 12 x 65 mm

Installation for flush mounting

Mounting length 50.00 mm

Size M12x1

Tightening torque 10 Nm

Range/Distance

Assured operating distance Sa 2.2 mm

Hysteresis H max. (% of Sr) 15.0 %

Rated operating distance Sn 3 mm

Real switching distance sr 3 mm

Repeat accuracy max. (% of Sr) 5.0 %

Switching distance marking ■■

Temperature drift max. (% of Sr) 10 %

Tolerance Sr ±10 %

Remarks

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

S<sub>n</sub>: reduced by the coating thickness of 0.2 mm.

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 (Schematic)

