



Inductive sensor

IEB3003BBPKG/K1/SC/US-104



Product characteristics

Electrical design	PNP
Output function	normally open
Sensing range [mm]	3
Housing	Threaded type
Dimensions [mm]	M8 x 1 / L = 50

Application

System	Increased sensing range; correction factor = 1; Magnetic-field immune
Application	Inductive sensors for welding applications
Magnetic-field immune	yes
Max. electromagnetic field immunity [mT]	300

Electrical data

Operating voltage [V]	10...30 DC
Current consumption [mA]	< 20
Protection class	III
Reverse polarity protection	yes

Outputs

Electrical design	PNP
Output function	normally open
Max. voltage drop switching output DC [V]	2.5
Permanent current rating of switching output DC [mA]	100
Switching frequency DC [Hz]	2000
Short-circuit protection	yes
Overload protection	yes

Monitoring range

Sensing range [mm]	3
Real sensing range S_r [mm]	$3 \pm 10\%$
Operating distance [mm]	0...2.43
Increased sensing range	yes

Accuracy / deviations

Correction factor	steel: 1 / stainless steel: 1 / brass: 1 / aluminum: 1 / copper: 1
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Hysteresis	[% of Sr]	3...15
Switch-point drift	[% of Sr]	-10...10
Correction factor = 1		yes

Operating conditions

Ambient temperature	[°C]	-40...85
Protection		IP 65; IP 66; IP 67; IP 68; IP 69K

Tests / approvals

EMC	EN 61000-4-2 ESD	4 kV CD / 8 kV AD
	EN 61000-4-3 HF radiated	10 V/m
	EN 61000-4-4 Burst	2 kV
	EN 61000-4-6 HF conducted	10 V
	EN 55011	class B
Vibration resistance	EN 60068-2-6 Fc	20 g (10...3000 Hz) / 50 sweep cycles per frequency; 1 octave per minute in 3 axes
Shock resistance	EN 60068-2-27 Ea	100 g 11 ms half-sine; 3 shocks each in every direction of the 3 coordinate axes
Continuous shock resistance	EN 60068-2-27 Ea	40 g 6 ms; 4000 shocks each in every direction of the 3 coordinate axes
Fast temperature changes	EN 60068-2-14 Na	TA = -40 °C; TB = 85 °C; t1 = 30 min; t2 = < 10 s; 50 cycles
MTTF	[years]	1222
Embedded software included		yes
UL approval	Ta	-25...70 °C
	Enclosure type	Type 1
	voltage supply	Limited Voltage/Current
	UL approval number	A033
	File number UL	E174191

Mechanical data

Weight	[g]	17.2
Housing		Threaded type
Mounting		flush mountable
Dimensions	[mm]	M8 x 1 / L = 50
Thread designation		M8 x 1
Material		stainless steel (1.4404 / 316L) weld coated; sensing face: LCP black; LED window: PEI; lock nuts: brass weld coated
Tightening torque	[Nm]	A = 5 mm: 2 Nm; B: 5 Nm

Displays / operating elements

Display	Switching status	4 LED, yellow
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Accessories

Items supplied	lock nuts: 2
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Remarks

Pack quantity	1 pcs.
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Electrical connection - plug

Connector: 1 x M12; coding: A



Connection



Diagrams and graphs

Installation

