

IFR212



Inductive full-metal sensor

IFB3004BBPKG/AM/SC/2M/PUR



1 LED 2-color yellow/green



Product characteristics

Electrical design	PNP
Output function	normally open
Sensing range [mm]	4
Housing	Threaded type
Dimensions [mm]	M12 x 1 / L = 40

Application

System	Halogen-free; Drag chain suitability; Increased sensing range; Full-metal housing; Magnetic-field immune
Application	Inductive sensors for welding applications
Pressure rating	50 bar
Note on pressure rating	5 MPa
Magnetic-field immune	sensing face
	yes

Electrical data

Operating voltage [V]	10...30 DC
Current consumption [mA]	< 10
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]	2
Short-circuit protection	yes
Overload protection	yes

Monitoring range

Sensing range [mm]	4
Real sensing range S_r [mm]	$4 \pm 10 \%$
Operating distance [mm]	0...3.24
Increased sensing range	yes

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Accuracy / deviations			
Correction factor		steel: 1 / stainless steel: 0.7 / brass: 0.6 / aluminum: 0.5 / copper: 0.2	
Hysteresis	[% of Sr]	3...15	
Switch-point drift	[% of Sr]	-10...10	
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
Impact resistance			1 J
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		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
Salt spray test	EN 60068-2-52 Kb		severity level 5 (4 test cycles)
MTTF	[years]	1188	
Embedded software included	yes		
UL approval	Ta		-25...75 °C
	Enclosure type		Type 1
	voltage supply		Limited Voltage/Current
	UL approval number		A019
	File number UL		E174191
Mechanical data			
Weight	[g]	86	
Housing	Threaded type		
Mounting	flush mountable		
Dimensions	[mm]	M12 x 1 / L = 40	
Thread designation	M12 x 1		
Material	stainless steel (1.4404 / 316L) weld coated; sensing face: stainless steel (1.4404 / 316L) weld coated; LED window: PEI; lock nuts: brass weld coated		
Tightening torque	[Nm]	6	
Drag chain suitability	yes		
Drag chain suitability	Bending radius for flexible applications	min. 10 x cable diameter	
	Bending cycles	> 5 Mio.	
Full-metal housing	yes		
Displays / operating elements			
Display	Switching status	LED, yellow	
	Power	LED, green	

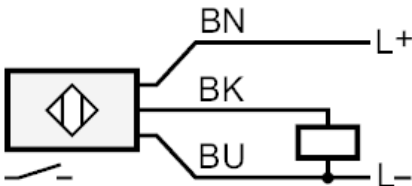
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Accessories	
Items supplied	lock nuts: 2
Remarks	
Pack quantity	1 pcs.
Electrical connection	
Cable: 2 m, PUR, Halogen-free, Ø 4.9 mm; not irradiated (can be recycled); 3 x 0.34 mm² / resistant to welding sparks	
Connection	



	Core colors
BK	black
BN	brown
BU	blue