

Inductive full-metal sensor

IFK3004BFRKG/AM/IO/US-104



Product characteristics

Electrical design	PNP/NPN; (parameterisable)
Output function	normally open / normally closed; (parameterisable)
Communication interface	IO-Link
Housing	threaded type
Dimensions [mm]	M12 x 1 / L = 60

Application

Special feature	Gold-plated contacts
Application	Use in machine tools, coolants and lubricants
Pressure rating [bar]	100
Pressure rating [MPa]	10
Note on pressure rating	sensing face

Electrical data

Operating voltage [V]	10...30 DC
Current consumption [mA]	< 15
Protection class	III
Reverse polarity protection	yes

Outputs

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

Detection zone

Switch point IO-Link [mm]	0.7...3.51; (parameterisable)
Measuring range IO-Link [mm]	0.375...3.75

Accuracy / deviations

Correction factor	steel: 1 / stainless steel: 0.7 / brass: 0.8 / aluminium: 0.6 / copper: 0.3
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Hysteresis	[% of Sr]	3...15
Linearity error IO-Link	[%]	± 2; (of the final value of the measuring range)
Repeatability IO-Link	[%]	± 1; (of the final value of the measuring range)
Temperature coefficient		± 0,3 %/K; (of the final value of the measuring range)

Interfaces

Communication interface	IO-Link	
Transmission type	COM2 (38,4 kBaud)	
IO-Link revision	1.1	
SDCI standard	IEC 61131-9	
Profiles	Smart Sensor: Identification and diagnosis; Multi-channel, two setpoint switching sensor, type 0 Generic Profiled Sensor; Teach Channel	
SIO mode	yes	
Required master port type	A	
Min. process cycle time	[ms]	3.2
Supported DeviceIDs	Type of operation	DeviceID
	default	1090

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, 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 change	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]	635
Embedded software included	yes	
UL approval	Ta	-25...70 °C
	Enclosure type	Type 1
	power supply	Limited Voltage/Current
	UL Approval no.	A008
	File number UL	E174191

Mechanical data

Weight	[g]	29.4
Housing	threaded type	
Mounting	flush mountable	
Dimensions	[mm]	M12 x 1 / L = 60

IFC277



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Thread designation	M12 x 1
Materials	stainless steel (316L/1.4404); sensing face: stainless steel (316L/1.4404); LED window: PEI; lock nuts: brass white bronze coated
Tightening torque [Nm]	15

Displays / operating elements

Display	switching status	4 x LED, yellow
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Accessories

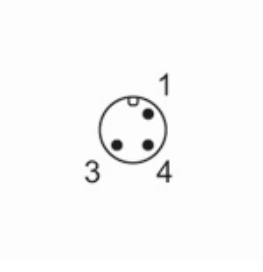
Items supplied	lock nuts: 2
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Remarks

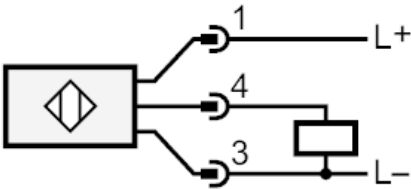
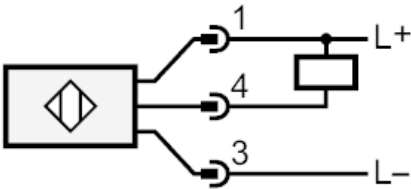
Pack quantity	1 pcs.
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Electrical connection - plug

Connector: 1 x M12; coding: A; Contacts: gold-plated



Connection



4 OUT / IO-Link