



Inductive sensor

IHK3010-FRKG/V4A/IO/US-104



Product characteristics

Electrical design	PNP/NPN; (configurable)
Output function	normally open / closed; (configurable)
Communication interface	IO-Link
Housing	Threaded type
Dimensions [mm]	M30 x 1.5 / L = 60

Application

System	Magnetic-field immune
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/NPN; (configurable)
Output function	normally open / closed; (configurable)
Max. voltage drop switching output DC [V]	2.5
Permanent current rating of switching output DC [mA]	100
Switching frequency DC [Hz]	75
Short-circuit protection	yes
Overload protection	yes

Monitoring range

Switch point IO-Link [mm]	2...9.7
Measuring range IO-Link [mm]	1...10



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Accuracy / deviations		
Repeatability		< 40 µm
Factory calibration (target: aluminium, 60x60 mm)		
Resolution	[µm]	15
Temperature drift		± 4 µm/K
Linearity deviation		± 40 µm
Application calibration (1-point calibration; target: steel, 60x60 mm)		
Resolution	[µm]	15
Temperature drift		± 6 µm/K
Linearity deviation		± 200 µm
Application calibration (3-point calibration; target: steel, 30x30 mm)		
Resolution	[µm]	15
Temperature drift		± 6 µm/K
Linearity deviation		± 100 µm
Interfaces		
Communication interface		IO-Link
Transmission type		COM2 (38,4 kBaud)
IO-Link revision		1.1
SDCI standard		IEC 61131-9 CDV
Profiles		Smart Sensor: Device Identification; Device Diagnosis; Device Teach Channel; Binary Data Channel; Process Data Variable
SIO mode		yes
Required master port class		A
Min. process cycle time	[ms]	3.2
Supported DeviceIDs	Type of operation default	DeviceID 1708
Operating conditions		
Ambient temperature	[°C]	-25...70
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 Eb	40 g 6 ms; 4000 shocks each in every direction of the 3 coordinate axes
Fast temperature changes	EN 60068-2-14 Na	TA = -25 °C; TB = 70 °C; t1 = 30 min; t2 = < 10 s; 50 cycles
MTTF	[years]	1341
Embedded software included		yes



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UL approval	Ta	-25...70 °C
	Enclosure type	Type 1
	voltage supply	Limited Voltage/Current
	UL approval number	A005
	File number UL	E174191

Mechanical data

Weight	[g]	124.3
Housing		Threaded type
Mounting		flush mountable
Dimensions	[mm]	M30 x 1.5 / L = 60
Thread designation		M30 x 1.5
Material		housing: stainless steel (1.4404 / 316L); sensing face: LCP white; LED window: PEI; lock nuts: stainless steel (1.4404 / 316L)
Tightening torque	[Nm]	7

Displays / operating elements

Display	Switching status	4 x LED, yellow
	SIO mode	
	output stage supplied with current	LED, yellow lights
	IO-Link mode	
	target in measuring range	LED, yellow lights

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



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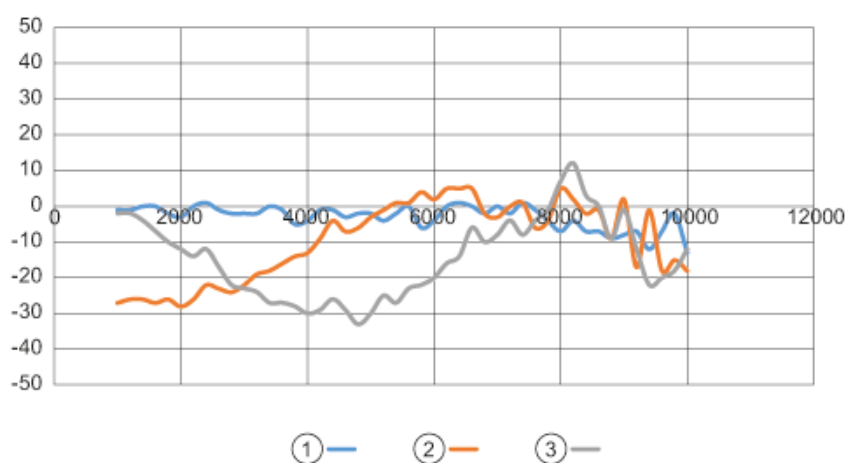
Connection



4: OUT / IO-Link

Diagrams and graphs

Linearity deviation



- x Measured value [μm]
 y Linearity deviation [μm]
 1 Factory calibration (target: aluminium, 60x60 mm)
 2 application calibration (1-point calibration; target: steel, 60x60 mm)
 3 Application calibration (3-point calibration; target: steel, 30x30 mm)