

Inductive analogue sensor with IO-Link

IGK4005A1PKG/IO/US



Product characteristics

Electrical design	PNP/NPN; (parameterisable)
Output function	normally open / normally closed; (parameterisable)
Communication interface	IO-Link
Housing	threaded type
Dimensions [mm]	M18 x 1 / L = 60

Electrical data

Operating voltage [V]	15...30 DC
Current consumption [mA]	< 30
Protection class	II
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]	300
Analogue current output [mA]	4...20; (linear; gradient: 3,556 mA/mm; for frontal approach and for target made of mild steel: 18 x 18 x 1 mm)
Max. load [Ω]	500; (U _b ≤ 18 V; Max. load ≤ 400 Ω)
Short-circuit protection	yes
Overload protection	yes

Detection zone

Measuring range [mm]	0.5...5
Switch point IO-Link [mm]	0.94...4.68



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Accuracy / deviations		
Correction factor	steel: 1 / stainless steel: 0.7 / brass: 0.5 / aluminium: 0.5 / copper: 0.4	
Hysteresis [% of Sr]	3...15	
Note on hysteresis	parameterisable	
Linearity error of analogue output [%]	± 1; (of the final value of the measuring range)	
Repeatability analogue output [%]	± 1; (of the final value of the measuring range)	
Temperature coefficient [%/K vom MEW]	±0,15	
Temperature drift	± 5 %; (of the final value of the measuring range)	
Response times		
Response time [ms]	< 10	
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	
IO-Link process data (cyclical)	function	bit length
	process value	16
	device status	4
	binary switching information	2
IO-Link functions (acyclical)	switching cycles counter; switch-on cycle counter; operating hours counter; internal temperature; application specific tag	
Supported DeviceIDs	Type of operation	DeviceID
	Default	1205
Note	For further information please see the IODD PDF file under "Downloads"	
Operating conditions		
Ambient temperature [°C]	-25...80	
Protection	IP 65; IP 66; IP 67; IP 68; IP 69K	



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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, 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 = -25°C; TB = 80°C; t1 = 30 min; t2 = < 10 s 50 cycles
MTTF [years]	216	
Embedded software included	yes	
UL approval	Ta	-25...60 °C
	Enclosure type	Type 1
	voltage supply	Limited Voltage/Current
	UL Approval no.	A023
	File number UL	E174191
Mechanical data		
Weight [g]	64	
Housing	threaded type	
Mounting	flush mountable	
Dimensions [mm]	M18 x 1 / L = 60	
Thread designation	M18 x 1	
Materials	Housing: brass white bronze coated; sensing face: PBT orange; LED-Fenster: PEI; lock nuts: brass white bronze coated	
Tightening torque [Nm]	25	
Displays / operating elements		
Display	target in measuring range	4 x LED, yellow lights
	target outside measuring range	4 x LED, yellow flashing
Accessories		
Items supplied	lock nuts: 2	
Remarks		
Pack quantity	1 pcs.	
Electrical connection - plug		
Connector: 1 x M12		
		

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A schematic diagram of a four-terminal device, represented by a box with a diamond symbol inside. The device has four terminals labeled 1, 2, 3, and 4. Terminal 1 is connected to the positive load terminal L+. Terminal 2 is connected to the negative load terminal L-. Terminals 3 and 4 are connected to a load, represented by a circle with a diagonal line and an arrow. Dashed lines indicate a connection between terminal 4 and the positive load terminal L+, and between terminal 3 and the negative load terminal L-.

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