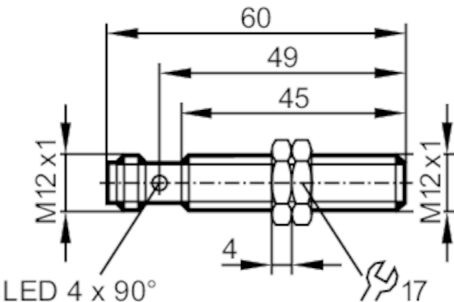


IFM213



Inductive sensor

IFKC004BASKG/60V/V4A/US-104



Product characteristics		
Electrical design		PNP/NPN
Output function		normally open
Sensing range	[mm]	4
Housing		Threaded type
Dimensions	[mm]	M12 x 1 / L = 60
Application		
System		gold-plated contacts; Increased sensing range
Application		Use in mobile and harsh applications
Electrical data		
Operating voltage	[V]	10...60 DC
Current consumption	[mA]	< 10
Protection class		II
Reverse polarity protection		yes
Outputs		
Electrical design		PNP/NPN
Output function		normally open
Max. voltage drop switching output DC	[V]	2.5
Minimum load current	[mA]	2; (only in 2-wire operation)
Max. leakage current	[mA]	0.5; (only in 2-wire operation)
Permanent current rating of switching output DC	[mA]	200
Switching frequency DC	[Hz]	400
Short-circuit protection		yes
Type of short-circuit protection		yes (non-latching)
Overload protection		yes
Monitoring range		
Sensing range	[mm]	4
Real sensing range Sr	[mm]	4 ± 10 %
Operating distance	[mm]	0...3.24

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Increased sensing range		yes		
Accuracy / deviations				
Correction factor		steel: 1 / stainless steel: 0.7 / brass: 0.5 / aluminum: 0.4 / copper: 0.3		
Hysteresis	[% of Sr]	1...20		
Switch-point drift	[% of Sr]	-10...10		
Operating conditions				
Ambient temperature		[°C]		-40...85
Protection				IP 67; IP 69K
Tests / approvals				
EMC		Automotive area		
		Noise emission and noise interference: ECE R10		E1 type approval
		noise immunity according to DIN ISO 11452-2		100 V/m
		conducted interference in 24 V networks to ISO 7637-2: 2004 (pulse 1 to 4) and ISO16750-2: 2012 (load dump)		
		pulse		1 2a 2b 3a 3b 4 Load dump
		Severity level		III III III III III Test A
		Failure criterion		C A C A A C C
		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 61000-4-5 Surge		0,5 kV mains line to line
		EN 61000-4-6 HF conducted		10 V
		EN 55011		class B
Vibration resistance		EN 60068-2-6 Fc		20 g (10...3000 Hz) / -20...50 °C
				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 / -40...85 °C
Continuous shock resistance		EN 60068-2-27		40 g 6 ms; 4000 shocks each in every direction of the 3 coordinate axes / -20...50 °C
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]	1079	
UL approval		Ta		0...40 °C
		Enclosure type		Type 1
		voltage supply		Hazardous voltage
		UL approval number		A050
		File number UL		E174191
Mechanical data				
Weight		[g]	30.4	
Housing		Threaded type		
Mounting		flush mountable		
Dimensions		[mm]	M12 x 1 / L = 60	
Thread designation		M12 x 1		

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Material	housing: stainless steel (1.4404 / 316L); sensing face: LCP white; LED window: PEI; lock nuts: brass white bronze coated	
Tightening torque	[Nm]	15

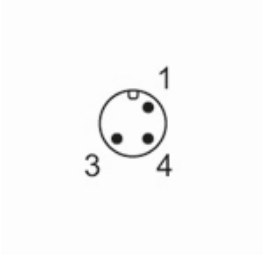
Displays / operating elements		
Display	Switching status	4 x 90° LED, yellow

Accessories		
Items supplied	lock nuts: 2	

Remarks		
Pack quantity	1 pcs.	

Electrical connection - plug

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



Connection

