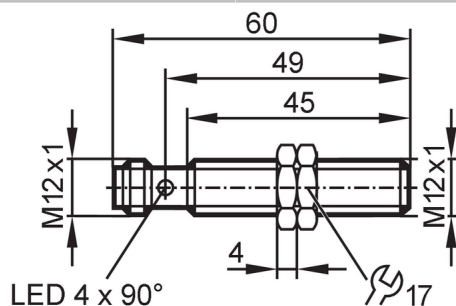


IFM213



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

Special feature	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 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: 0.5 / 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
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
	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
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.

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Electrical connection - plug

Connector: 1 x M12; coding: A; Contacts: 3, gold-plated



Connection

