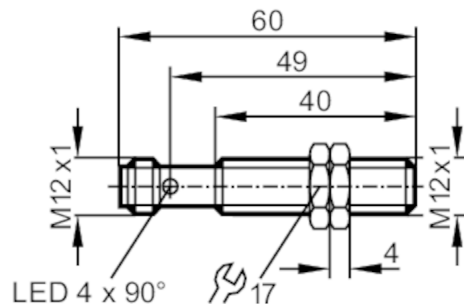


# IFM213



## Inductive sensor

IFKC004BASKG/M/60V/US-104-DRS



### 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; (100 mA)
Minimum load current	[mA]	2
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		pulsed
Overload protection		yes

### Detection zone

Sensing range	[mm]	4
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 / aluminium: 0.5 / copper: 0.4	
Hysteresis [% of Sr]	1...20	
Operating conditions		
Ambient temperature [°C]	-40...85	
Protection	IP 67; IP 69K	
Tests / approvals		
EMC	automotive area	
	noise emission and noise interference according to the automotive directive 95/54/EC	E1 type approval
	noise immunity according to DIN ISO 11452-2	100 V/m
	conducted interference acc. to ISO 7637-2	
	pulse	1 2 3a 3b 4 5
	severity level	IV IV IV IV IV IV
	failure criterion	C C A A A 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 line to line, Ri: 2 Ohm
	EN 61000-4-6 HF conducted	10 V
	EN 55011	class B
	EN 60068-2-6 Fc	20 g (10...3000 Hz) / -20...50 °C
Vibration resistance	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 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]	662	
UL approval	Ta	0...40 °C
	Enclosure type	Type 1
	voltage supply	Hazardous voltage
	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	
Materials	housing: stainless steel; sensing face: PBT	
Displays / operating elements		
Display	switching status	4 x 90° LED, yellow

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Accessories	
Accessories (supplied)	lock nuts: 2
Remarks	
Pack quantity	1 pcs.
Electrical connection - plug	

Connector: 1 x M12; Contacts: gold-plated

