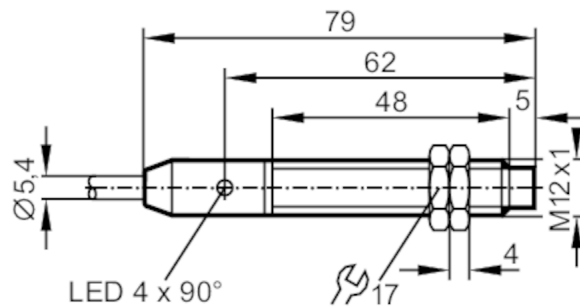


# IFM221



## Inductive sensor

IFKC007-ASKG/M/60V/1,5M/ZH/AMP



### Electrical data

Operating voltage	[V]	10...60 DC
Current consumption	[mA]	< 10; (only in 3-wire operation)
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		pulsed
Overload protection		yes

### Detection zone

Sensing range	[mm]	7
Real sensing range $S_r$	[mm]	$7 \pm 10\%$
Operating distance	[mm]	0...5.67
Increased sensing range		yes

### Accuracy / deviations

Correction factor		steel: 1 / stainless steel: 0.7 / brass: 0.5 / aluminium: 0.5 / copper: 0.4
Hysteresis	[% of $S_r$ ]	1...20
Switch point drift	[% of $S_r$ ]	-10...10

### Operating conditions

Ambient temperature	[°C]	-40...85
Protection		IP 67; IP 69K

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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
	Vibration resistance	EN 60068-2-6 Fc
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 60068-2-29 Eb	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]	666
Mechanical data		
Weight	[g]	135
Housing		threaded type
Mounting		non-flush mountable
Dimensions	[mm]	M12 x 1 / L = 79
Thread designation		M12 x 1
Materials		housing: stainless steel; sensing face: PBT; lock nuts: brass; LED window: PEI
Displays / operating elements		
Display	switching status	4 x 90° LED, yellow
Accessories		
Accessories (supplied)		lock nuts: 2
Remarks		
Pack quantity		1 pcs.

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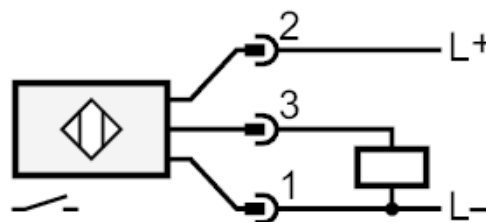
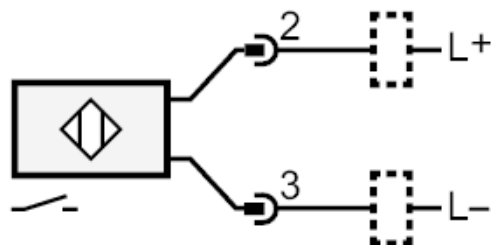
## Inductive sensor

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### Electrical connection

Cable: 1.5 m, PUR; burning behaviour to ECE R118 rev. 2; 3 x 0.5 mm<sup>2</sup>

### Connection



Connector: 1 x AMP (1-967325-2; 929974-1; 828920-1; 965784-1)