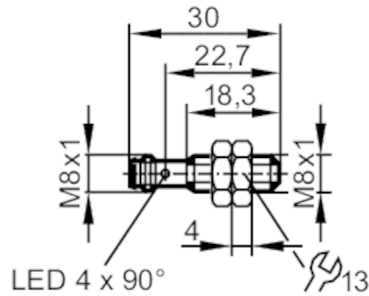


# IES221



## Inductive sensor

IEB3003BBNKG/V4A/AS



### Product characteristics

Electrical design	NPN
Output function	normally closed
Sensing range [mm]	3
Housing	threaded type
Dimensions [mm]	M8 x 1 / L = 30

### Application

Special feature	Gold-plated contacts; Increased sensing range
Application	Industrial applications / factory automation

### Electrical data

Operating voltage [V]	10...30 DC
Current consumption [mA]	< 20
Protection class	III
Reverse polarity protection	yes

### Outputs

Electrical design	NPN
Output function	normally closed
Max. voltage drop switching output DC [V]	2.5
Permanent current rating of switching output DC [mA]	100
Switching frequency DC [Hz]	1500
Short-circuit protection	yes
Overload protection	yes

### Detection zone

Sensing range [mm]	3
Real sensing range $S_r$ [mm]	$3 \pm 10\%$
Operating distance [mm]	0...2.43
Increased sensing range	yes

### Accuracy / deviations

Correction factor	steel: 1 / stainless steel: 0.7 / brass: 0.4 / aluminium: 0.4 / copper: 0.3
Hysteresis [% of $S_r$ ]	1...15
Switch point drift [% of $S_r$ ]	-10...10

# IES221



## Inductive sensor

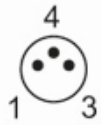
IEB3003BBNKG/V4A/AS

Operating conditions		
Ambient temperature [°C]		-40...85
Protection		IP 65; IP 66; IP 67; IP 68; IP 69K; (with ifm socket duly screwed on)
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 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
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 = -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]		1440
UL approval	Ta	-25...80 °C
	Enclosure type	Type 1
	voltage supply	Limited Voltage/Current
	UL Approval no.	A017
	File number UL	E174191
Mechanical data		
Weight [g]		15.2
Housing		threaded type
Mounting		flush mountable
Dimensions [mm]		M8 x 1 / L = 30
Thread designation		M8 x 1
Materials		stainless steel (1.4404 / 316L); sensing face: LCP white; LED window: PEI; lock nuts: stainless steel (1.4404 / 316L)
Tightening torque [Nm]		A = 5 mm: 2 Nm; B: 5 Nm
Displays / operating elements		
Display	switching status	4 x 90° LED, yellow
Accessories		
Accessories (supplied)		lock nuts: 2
Remarks		
Pack quantity		1 pcs.
Electrical connection - plug		
Connector: 1 x M8; Contacts: gold-plated		

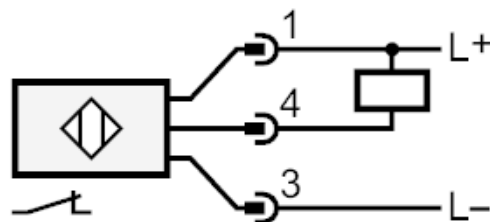
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### Connection



### Diagrams and graphs

#### Installation

