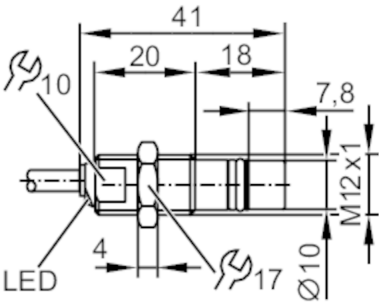


MFH213



Cylinder sensor

MFH3002BBPKG/B/AM/500/0,21M



Product characteristics

Electrical design	PNP
Output function	normally open
Sensing range [mm]	1.8
Housing	threaded type
Dimensions [mm]	M12 x 1 / L = 41

Application

Special feature	Full-metal housing
Application	hydraulic cylinders
Media	detects ferrous metals
Min. bursting pressure [bar]	2000
Min. bursting pressure [MPa]	200
Pressure rating [bar]	500
Pressure rating [MPa]	50

Electrical data

Operating voltage [V]	10...36 DC
Current consumption [mA]	< 23
Protection class	III
Reverse polarity protection	yes

Outputs

Electrical design	PNP
Output function	normally open
Max. voltage drop switching output DC [V]	1.6
Max. leakage current [mA]	0.1
Permanent current rating of switching output DC [mA]	200
Switching frequency DC [Hz]	1000
Short-circuit protection	yes
Overload protection	yes

Detection zone

Sensing range [mm]	1.8
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Cylinder sensor

MFB3002BBPKG/B/AM/500/0,21M

Accuracy / deviations		
Hysteresis	[% of Sr]	< 15
Switch point drift	[% of Sr]	10
Repeatability	[% of Sr]	10
Operating conditions		
Pressure peak	[bar]	1000
Ambient temperature	[°C]	-25...85
Protection		IP 65; IP 67
Tests / approvals		
EMC	automotive area	
	noise emission and noise immunity: ECE R10	E1 type approval
	radiation according to ECE R10_ESA_1m	>10 db limits, depending on distance
	noise immunity according to DIN ISO 11452-2	30 V/m
	bulk current injection (BCI) acc. DIN ISO 11452-4	60 mA
	conducted interference in 24 V networks to ISO 7637-2: 2004 (pulse 1 to 4)	
	pulse	1 2a 2b 3a 3b 4
	severity level	III III III III III III
	failure criterion	C B C 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 61000-4-6 HF conducted	10 V
	EN 55011	class B
	DIN ISO 11452-5	100 V/m
Vibration resistance	EN 60068-2-6 Fc	20 g 50 sweep cycles, 1 octave per minute, in 3 axes / 10...3000 Hz -20...50 °C
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 Ea	40 g 6 ms; 4000 shocks each in every direction of the 3 coordinate axes / -20...50 °C
MTTF	[years]	1934
Mechanical data		
Weight	[g]	30.8
Housing		threaded type
Mounting		flush mountable
Dimensions	[mm]	M12 x 1 / L = 41
Thread designation		M12 x 1
Materials		housing: stainless steel; O-ring: FPM; supporting ring: PTFE
Min. pressure cycles		10 million
Tightening torque	[Nm]	< 25
Full-metal housing		yes
Displays / operating elements		
Display	switching status	1 x LED, yellow

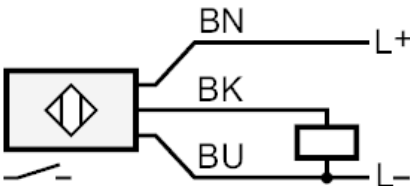
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Cylinder sensor

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Accessories	
Items supplied	lock nuts: 1
Remarks	
Pack quantity	1 pcs.
Electrical connection	
Cable: 0.21 m, PUR	
Connection	



Diagrams and graphs	