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DATA SHEET

MPS-G50CFH15D31DZZ

MPS-G
Cylinder sensors

SICK Sensor Intelligence



CYLINDER SENSORS

MPS-G50CFH15D31DZZ

ORDERING INFORMATION

Type	part no.
MPS-G50CFH15D31DZZ	1127848

Further device versions and accessories at www.sick.com/MPS-G

DETAILED TECHNICAL DATA

FEATURES

Cylinder type	C-slot
Preferred manufacturer slot	Festo, Zimmer, Gimatic
Detection zone	0 mm ... 50 mm [1]
Cylinder types with adapter	T-slot cylinders Round body cylinder Profile cylinders and tie-rod cylinders
Measuring range	50 mm
Housing length	25 mm
Switching output	2 x push-pull: PNP/NPN
Output function	IO-Link
Electrical wiring	DC 4-wire
Enclosure rating	IP67
Adjustment	
Teach-in button	Initialization of dynamic teach for 1 to 3 switching points Manual programming of 1 to 3 switching points (digital outputs) Adjustment of overrun distance per switching point Resetting of switching points
IO-Link	Configuration of up to 8 switching points
Diagnostic functionality	Vibration Orientation Temperature Maximum acceleration Actuator diagnosis
Special features	Completely embedded mounting in the slot, providing protection

[1] Deviations are possible depending on the drive.

MECHANICS/ELECTRONICS

Supply voltage	10 V DC ... 30 V DC
Voltage drop	≤ 1 V
Continuous current I_a	≤ 200 mA [1]
Protection class	III
Time delay before availability	0.175 s
Power consumption	≤ 550 mW
Required magnetic field sensitivity, typ.	2 mT ... 20 mT [2]
Overrun distance	Configurable
Hysteresis	Configurable
Resolution, typ.	0,01 mm [3]
Linearity error, typ.	0.3 mm [4]
Repeat accuracy, typ.	0.05 mm [5]
Sampling rate, typ.	1 ms
Reverse polarity protection	Yes
Short-circuit protection	Yes
Status indicator LED	Yes
Digital switching output	Yes
Teach-in	Yes
Ambient operating temperature	–20 °C ... +70 °C
Shock and vibration resistance	30 g, 11 ms / 10 ... 55 Hz, 1 mm
EMC	According to EN 60947-5-2
Connection type	Cable with plug, M8, 4-pin, with knurled screws, 0.5 m
Connection type Detail	
Conductor cross section	0.08 mm²
Cable diameter	Ø 2.6 mm
Bending radius	For flexible use > 10 x cable diameter With fixed installation > 5 x cable diameter
Cable outlet	Axial
Control elements connection cable	
Connection type	Cable, 4-wire, 0.1 m
Control elements connection cable detail	
Conductor size	0.09 mm²
Cable diameter	Ø 2.2 mm
Bending radius	For flexible use > 10 x cable diameter With fixed installation > 5 x cable diameter
Cable outlet	Axial
Material	
Housing	Plastic, PA, strengthened
Cable	PUR
Control element	Plastic, TPU, reinforced

[1] ≤ 200 mA (PUSH); ≥ –200 mA (PULL).

[2] The sensor must not be subjected to magnetic fields strengths of > 20 mT!

[3] For measuring range > 37 mm, the following applies for the resolution: Measuring range / 3,723.

[4] At 25 ° C, linearity error (maximum deviation) depending on response curve and minimal deviation function.

[5] At 25 ° C, repeatability magnet movement in one direction.

SAFETY-RELATED PARAMETERS

$MTTF_D$	358 years
DC_{avg}	0 %
T_M (mission time)	20 years

COMMUNICATION INTERFACE

Communication interface	IO-Link V1.1
Communication Interface detail	COM3
Cycle time	1 ms
Process data length	32 Bit
Process data structure	Bit 0 ... 7 = switching signal Qint1 - Qint8 (or up to 8 alarm notifications) Bit 8 ... 15 = scaling Bit 16 ... 31 = position (in x10 µm)

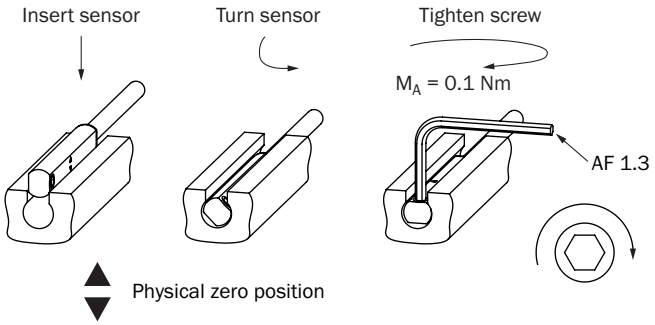
DIAGNOSIS

Vibration	
Number of axis	3
Measuring range a-RMS	0 g ... 5.6 g
Frequency range	Typ. 1.4 kHz
Noise	Typ. 14 mg
Update rate	1.25 Hz
Vibration analysis	A-RMS, kurtosis, pulse factor
Orientation	
Number of axis	2
Roll Euler angle measuring range	± 180°
Pitch Euler angle measuring range	± 90°
Resolution	0.02°
Roll repeatability	Typ. ± 2.5°
Pitch repeatability	Typ. ± 2.5°
Noise	Typ. 0.25°
Update rate	100 Hz
Limit frequency	50 Hz
Device temperature	
Measuring range	–125 °C ... +125 °C
Accuracy	Typ. ± 1 °C
Maximum acceleration	
Measuring range	± 8 g
Update rate	1 kHz
Actuator diagnosis	
Status data	Cycle count, travel time, cylinder travel, dwell time, piston velocity
Magnetic field strength	2 mT ... 18 mT

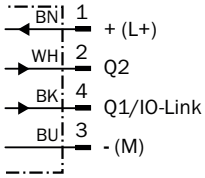
CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) exempt	✓
cULus certificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

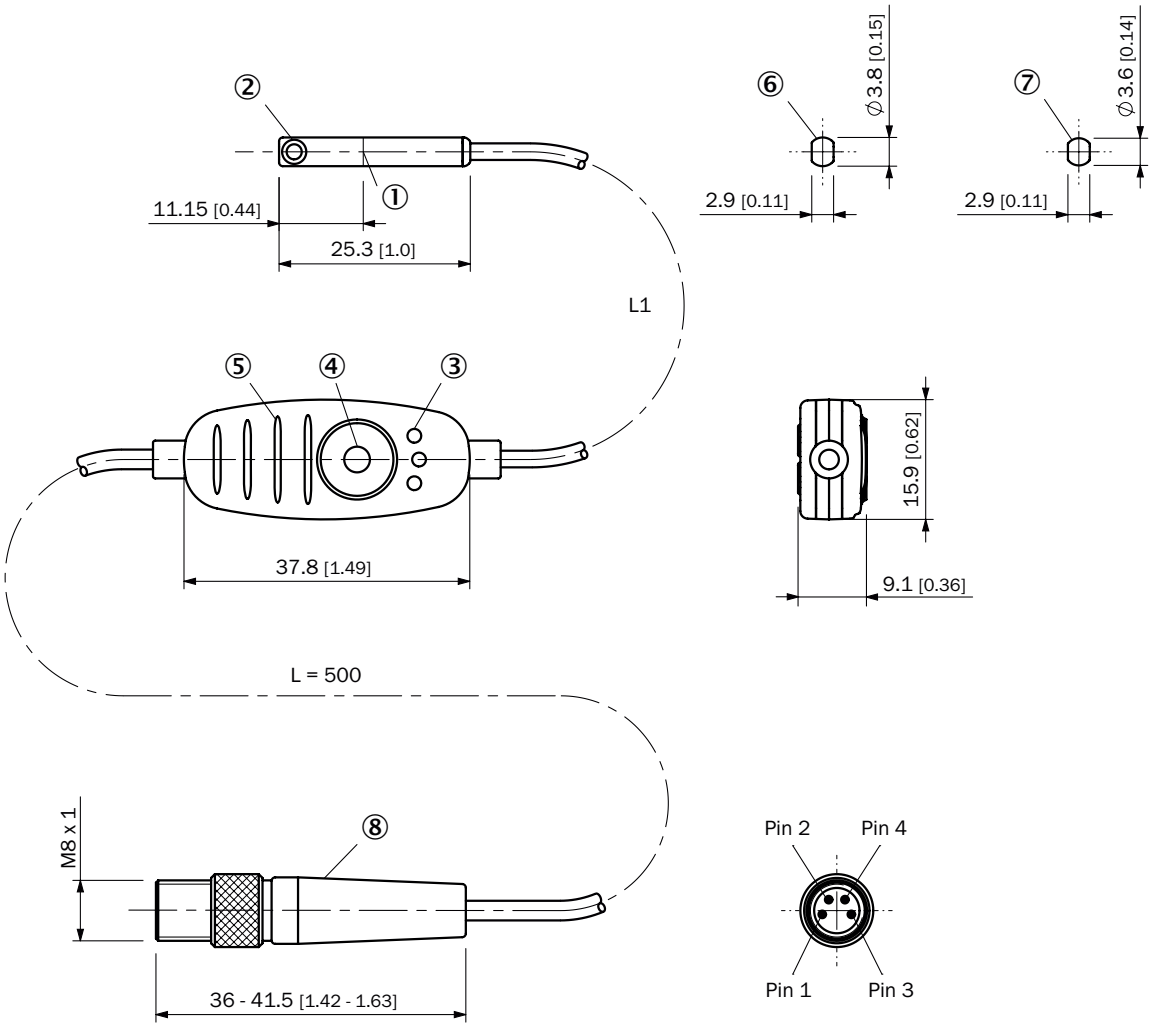
INSTALLATION NOTE



CONNECTION DIAGRAM CD-466



DIMENSIONAL DRAWING CABLE WITH PLUG M8, WITH KNURLED NUT



Dimensions in mm (inch)
① Center of sensor element
② Fixing screw SW 1.3
③ Display LED
④ Teach-in button
⑤ ribbing for cable ties
⑥ For SMC, Schunk, PHD, Bimba slot (MPS-G50CS...)
⑦ for Festo, Zimmer, Gimatic slot (MPS-G50CF...)
⑧ Connection

Part no.	Type	L1	Number of cores
1108672	MPS-G50CFH15D43ZZZ	100 mm	4
1108673	MPS-G50CSH15D43ZZZ	100 mm	4
1108674	MPS-G50CSH55D43ZZZ	500 mm	4
1127842	MPS-G50CFH15D31DZZ	100 mm	4
1127843	MPS-G50CSH15D31DZZ	100 mm	4
1127844	MPS-G50CSH55D31DZZ	500 mm	4
1127848	MPS-G50CFH15D31DZZ	100 mm	4
1127849	MPS-G50CSH15D31DZZ	100 mm	4

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1127848



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SICK AT A GLANCE

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SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

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