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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	1108681

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 16 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	0.15 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 ... 15 = switching signal Qint1 - Qint16 Bit 16 ... 31 = position (in x10 µm)

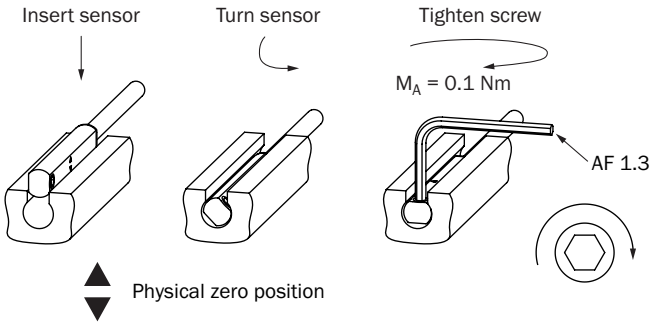
DIAGNOSIS

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

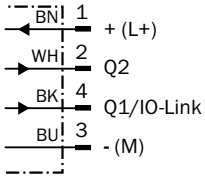
CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
IO-Link certificate	✓

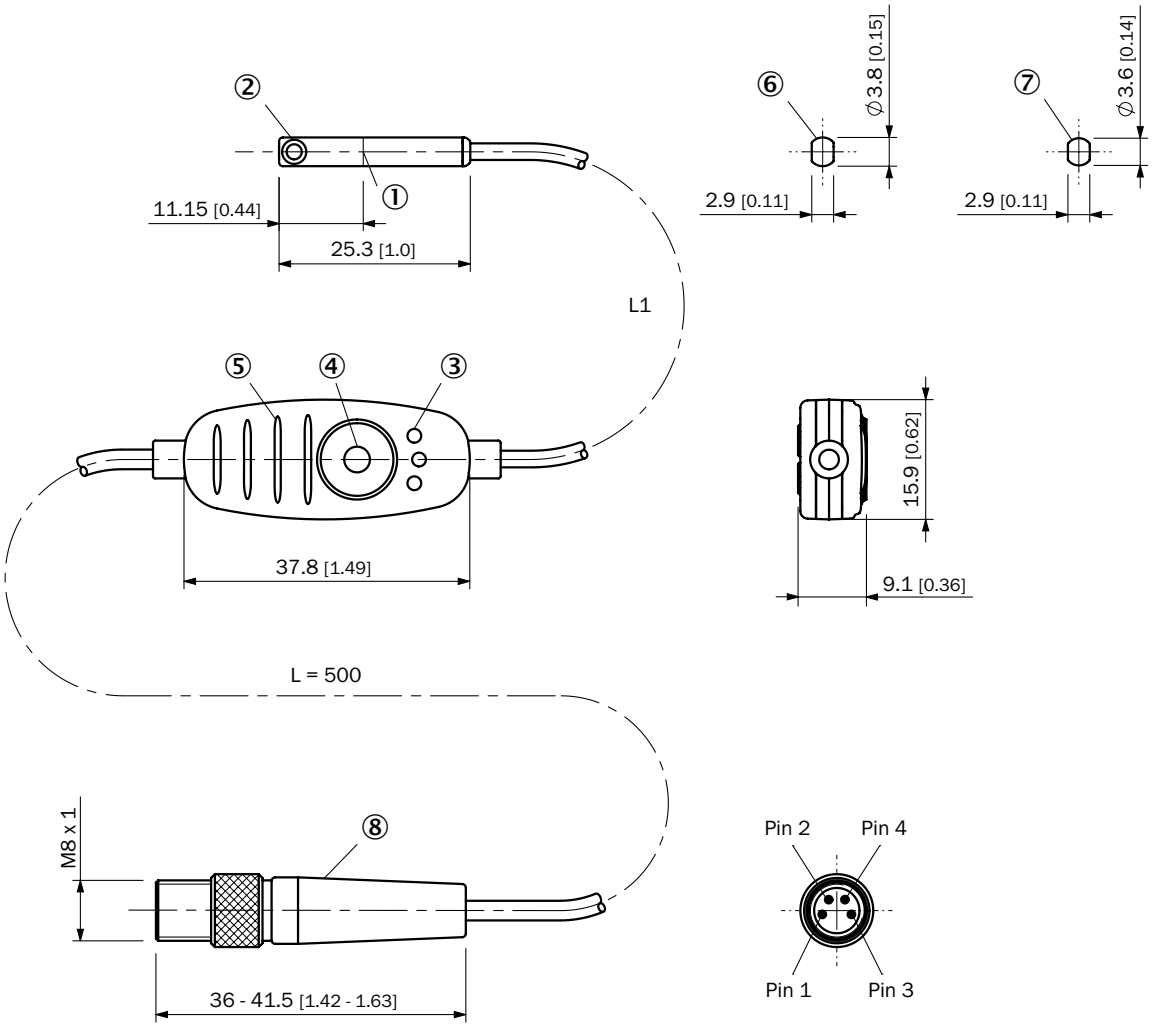
INSTALLATION NOTE



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/1108681

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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.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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