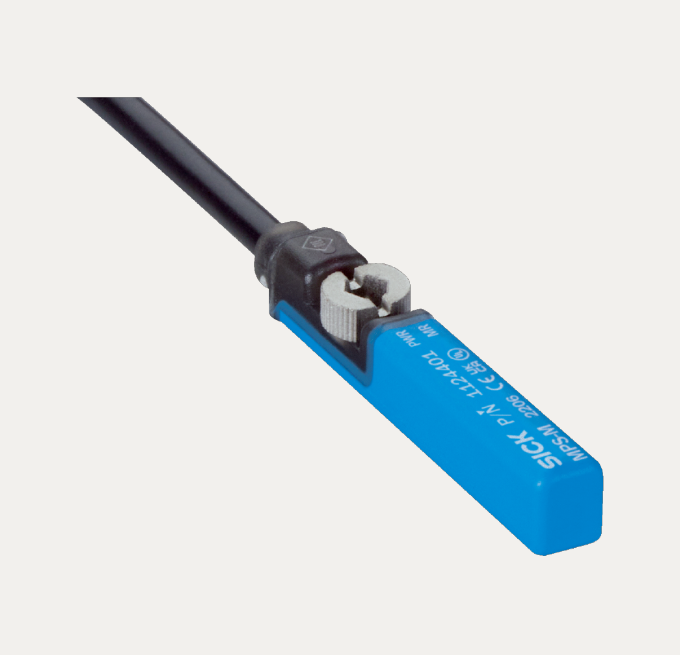
SICK.COM

DATA SHEET

MPS-M50TUH0BA45CZZ

MPS-M
Cylinder sensors

SICK Sensor Intelligence



CYLINDER SENSORS

MPS-M50TUH0BA45CZZ

ORDERING INFORMATION

Type	part no.
MPS-M50TUH0BA45CZZ	1124403

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

DETAILED TECHNICAL DATA

FEATURES

Cylinder type	T-slot
Detection zone	0 mm ... 50 mm [1]
Cylinder types with adapter	Profile cylinder Tie rod cylinder Round body cylinder Dovetail groove cylinder SMC rail CDQ2 SMC rail ECDQ2
Measuring range	50 mm
Housing length	32.5 mm
Output function	Analog, IO-Link
Electrical wiring	DC 4-wire
Analog output (voltage)	0 V ... 10 V
Enclosure rating	IP67
Diagnostic functionality	Actuator diagnosis

[1] Deviations are possible depending on the drive.

MECHANICS/ELECTRONICS

Supply voltage	13 V DC ... 30 V DC [1]
Min. load resistance	≥ 10 kΩ
Protection class	III

[1] 12 V DC ... 30 V DC for deactivated out-of-range display.

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

[3] IO-Link: The resolution is always 0.01 mm; analog output: at measuring range > 0.014 mm applies for the measuring range resolution / 3723.

[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.

[6] The UL certification of the sensor is only valid up to +65 °C.

Time delay before availability	0.15 s
Power consumption	≤ 550 mW
Required magnetic field sensitivity, typ.	2 mT ... 20 mT [2]
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
Measuring range LED	Yes
Status indicator LED	Yes
Teach-in	Yes
Ambient operating temperature	–20 °C ... +70 °C [6]
Shock and vibration resistance	30 g, 11 ms / 10 ... 55 Hz, 1 mm
EMC	According to EN 60947-5-2
Connection type	Cable, 4-wire, stripped, 2 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
Material	
Housing	Plastic, PA, strengthened
Cable	PUR

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SAFETY-RELATED PARAMETERS

$MTTF_D$	744 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 - Qint7 / Alerts Bit 8 ... 15 = scaling Bit 16 ... 31 = position (in x10 µm)

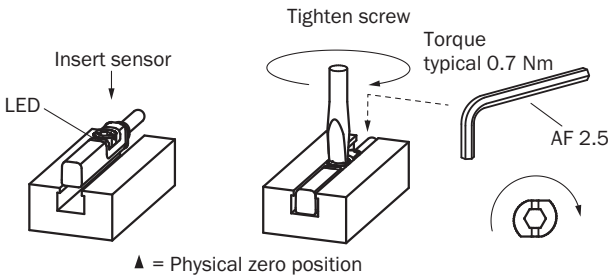
DIAGNOSIS

Actuator diagnosis	
Status data	Cycle count, travel time, cylinder travel, dwell time, piston velocity
Magnetic field strength	2 mT ... 18 mT

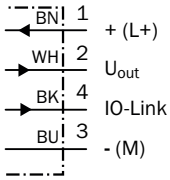
CERTIFICATES

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

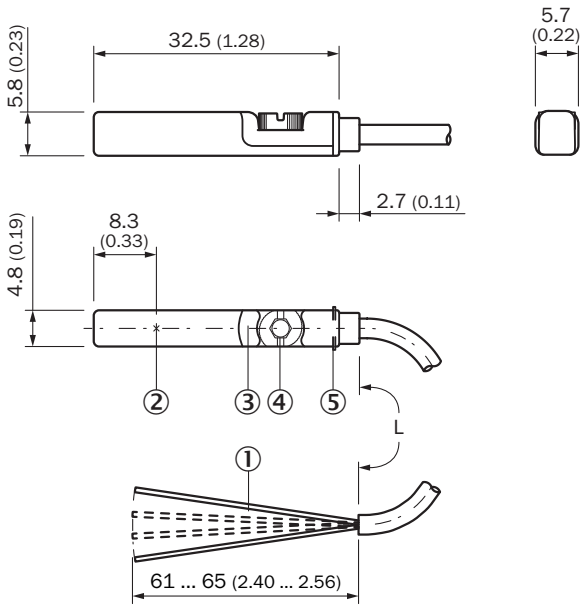
INSTALLATION NOTE



CONNECTION DIAGRAM CD-539



DIMENSIONAL DRAWING CABLE



Dimensions in mm (inch)
① Connection
② physical zero position
③ Display LED
④ Fixing screw SW 2.5
⑤ retaining ribs

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/1124403

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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

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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