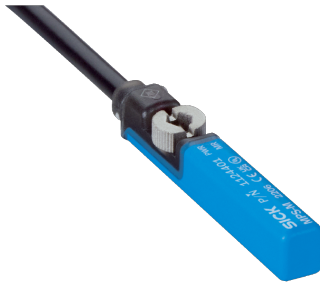


MPS-M

CYLINDER SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	part no.
MPS-M50TUH03E45CZZ	1124402

Other models and accessories → 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
Time delay before availability	0.15 s
Power consumption	≤ 550 mW
Required magnetic field sensitivity, typ.	2 mT ... 20 mT ²⁾

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.

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 with connector M12, 4-pin, with knurled nut, 0.3 m
Connection type Detail	
Conductor cross section	0.08 mm ²
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

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.

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

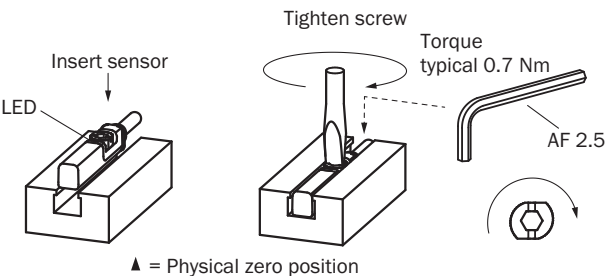
Certificates

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

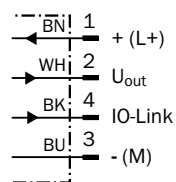
Classifications

ECLASS 5.0	27270104
ECLASS 5.1.4	27270104
ECLASS 6.0	27270104
ECLASS 6.2	27270104
ECLASS 7.0	27270104
ECLASS 8.0	27270104
ECLASS 8.1	27270104
ECLASS 9.0	27270104
ECLASS 10.0	27270104
ECLASS 11.0	27270104
ECLASS 12.0	27274301
ETIM 5.0	EC002544
ETIM 6.0	EC002544
ETIM 7.0	EC002544
ETIM 8.0	EC002544
UNSPSC 16.0901	39122230

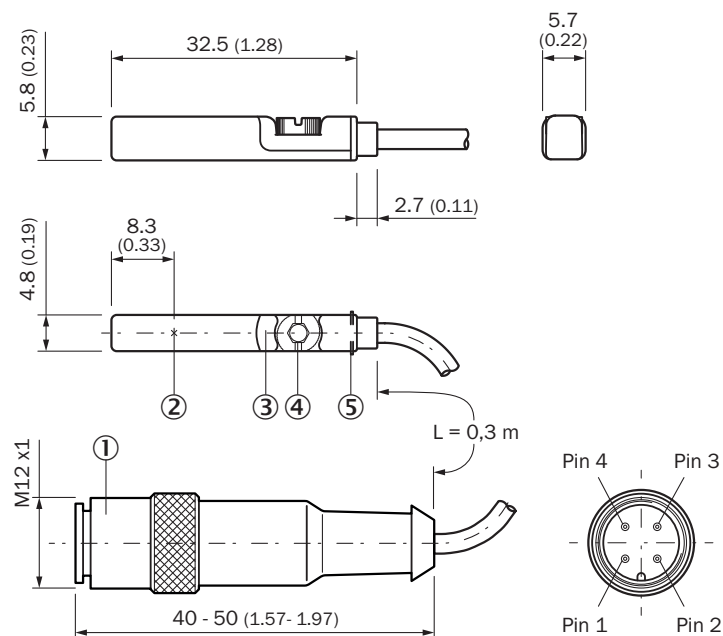
Installation note



Connection diagram Cd-493



Dimensional drawing Cable with connector M12, with knurled nut









Dimensions in mm (inch)

- ① Connection
- ② physical zero position
- ③ Display LED
- ④ Fixing screw SW 2.5
- ⑤ retaining ribs

Recommended accessories

Other models and accessories → www.sick.com/MPS-M

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"> Description: Mounting bracket for integrated profile cylinder/tie-rod cylinder Material: Zinc diecast Details: Zinc diecast Items supplied: Mounting hardware included 	BEF-KHZ-PT1	2022702
	<ul style="list-style-type: none"> Description: Mounting bracket for cylinder with dovetail slot Material: Aluminum Details: Aluminum Items supplied: Without mounting hardware 	BEF-KHZ-ST1	2022703
	<ul style="list-style-type: none"> Description: Mounting bracket for mounting on SMC rails ECDQ2 (T-slot) Material: Aluminum Details: Aluminum Items supplied: Without mounting hardware 	BEF-KHZ-TT1	2046439
	<ul style="list-style-type: none"> Description: Mounting bracket for mounting on SMC rails CDQ2 (T-slot) Material: Aluminum Details: Aluminum Items supplied: Without mounting hardware 	BEF-KHZ-TT2	2046440
	<ul style="list-style-type: none"> Description: Mounting bracket on round body cylinder with piston diameter of 8 mm ... 25 mm, ambient temperature min -30 °C max 80 °C Material: Stainless steel, Zinc cast Details: Stainless steel, Zinc cast Packing unit: 1 piece Suitable for: T-slot 	BEF-KHZ-RT1-25	2077682
	<ul style="list-style-type: none"> Description: Mounting bracket on round body cylinder with piston diameter of 8 mm ... 63 mm, ambient temperature min -30 °C max 80 °C Material: Stainless steel, Zinc cast Details: Stainless steel, Zinc cast Packing unit: 1 piece Suitable for: T-slot 	BEF-KHZ-RT1-63	2077683
	<ul style="list-style-type: none"> Description: Mounting bracket on round body cylinder with piston diameter of 8 mm ... 130 mm, ambient temperature min -30 °C max 80 °C Material: Stainless steel, Zinc cast Details: Stainless steel, Zinc cast Packing unit: 1 piece Suitable for: T-slot 	BEF-KHZ-RT1-130	2077684
	<ul style="list-style-type: none"> Description: Mounting bracket on round body cylinder with piston diameter of 63 mm, ambient temperature min 0 °C max 50 °C Dimensions (W x H x L): 73.9 mm Material: Plastic, Aluminum Details: Plastic, Aluminum Packing unit: 1 piece Suitable for: T-slot 	BEF-KHZ-RT-63	2077674
	<ul style="list-style-type: none"> Description: Mounting bracket on round body cylinder with piston diameter of 50 mm, ambient temperature min 0 °C max 50 °C Dimensions (W x H x L): 61.8 mm Material: Plastic, Aluminum Details: Plastic, Aluminum Packing unit: 1 piece Suitable for: T-slot 	BEF-KHZ-RT-50	2077675
	<ul style="list-style-type: none"> Description: Mounting bracket on round body cylinder with piston diameter of 40 mm, ambient temperature min 0 °C max 50 °C Dimensions (W x H x L): 50.9 mm Material: Plastic, Aluminum Details: Plastic, Aluminum Packing unit: 1 piece 	BEF-KHZ-RT-40	2077676

	Brief description	Type	part no.
	<ul style="list-style-type: none"> • Suitable for: T-slot • Description: Mounting bracket on round body cylinder with piston diameter of 32 mm, ambient temperature min 0 °C max 50 °C • Dimensions (W x H x L): 42.9 mm • Material: Plastic, Aluminum • Details: Plastic, Aluminum • Packing unit: 1 piece • Suitable for: T-slot 	BEF-KHZ-RT-32	2077677
	<ul style="list-style-type: none"> • Description: Mounting bracket on round body cylinder with piston diameter of 25 mm, ambient temperature min 0 °C max 50 °C • Dimensions (W x H x L): 35.7 mm • Material: Plastic, Aluminum • Details: Plastic, Aluminum • Packing unit: 1 piece • Suitable for: T-slot 	BEF-KHZ-RT-25	2077678
	<ul style="list-style-type: none"> • Description: Mounting bracket on round body cylinder with piston diameter of 20 mm, ambient temperature min 0 °C max 50 °C • Dimensions (W x H x L): 30.6 mm • Material: Plastic, Aluminum • Details: Plastic, Aluminum • Packing unit: 1 piece • Suitable for: T-slot 	BEF-KHZ-RT-20	2077679
	<ul style="list-style-type: none"> • Description: Mounting bracket on round body cylinder with piston diameter of 16 mm, ambient temperature min 0 °C max 50 °C • Dimensions (W x H x L): 26.6 mm • Material: Plastic, Aluminum • Details: Plastic, Aluminum • Packing unit: 1 piece • Suitable for: T-slot 	BEF-KHZ-RT-16	2077680
	<ul style="list-style-type: none"> • Description: Mounting bracket on round body cylinder with piston diameter of 12 mm, ambient temperature min 0 °C max 50 °C • Dimensions (W x H x L): 22.4 mm • Material: Plastic, Aluminum • Details: Plastic, Aluminum • Packing unit: 1 piece • Suitable for: T-slot 	BEF-KHZ-RT-12	2077681
device protection and care			
	<ul style="list-style-type: none"> • Description: Protective adapter • Material: Zinc diecast • Items supplied: Mounting hardware included • Suitable for: MZT7, RZT7, MZT8 	BEF-SG-MRZT	2077201

	Brief description	Type	part no.
network devices			
		IOLA2US-01101 (SiLink2 Master)	1061790
		SIG200-0A0512200	1089796
		SIG200-0A0412200	1089794
		SIG200-0A0G12200	1102605
		SIG350-0004AP100	6076871
		SIG350-0005AP100	6076923
		SIG350-0006AP100	6076924
		SIG300-0A0GAA100	1131014

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 3-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 3-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation 	YF2A13-020UB1XLEAX	2095604
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 3-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 3-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation 	YF2A13-050UB1XLEAX	2095605
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 3-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 3-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation 	YG2A13-020UB1XLEAX	2095752
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 3-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 3-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation 	YG2A13-050UB1XLEAX	2095753
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 3-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 0.6 m, 3-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation 	YF2A13-C60UB1XLEAX	2145767
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 3-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 3 m, 3-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation 	YF2A13-030UB1XLEAX	2145769
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 3-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 1 m, 3-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation 	YF2A13-010UB1XLEAX	2145768
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 3-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 0.6 m, 3-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation 	YG2A13-C60UB1XLEAX	2145770
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 3-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 1 m, 3-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation 	YG2A13-010UB1XLEAX	2145771
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 3-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 3 m, 3-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation 	YG2A13-030UB1XLEAX	2145772

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

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