



# MPS-G50CSH13E31DZZ

MPS-G

CYLINDER SENSORS

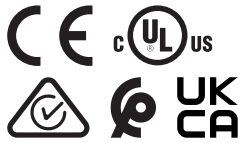
**SICK**  
Sensor Intelligence.



### Ordering information

Type	part no.
MPS-G50CSH13E31DZZ	1127846

Other models and accessories → [www.sick.com/MPS-G](http://www.sick.com/MPS-G)



### Detailed technical data

#### Features

<b>Cylinder type</b>	C-slot
<b>Preferred manufacturer slot</b>	SMC, Schunk, PHD, Bimba
<b>Detection zone</b>	0 mm ... 50 mm <sup>1)</sup>
<b>Cylinder types with adapter</b>	T-slot cylinders Round body cylinder Profile cylinders and tie-rod cylinders
<b>Measuring range</b>	50 mm
<b>Housing length</b>	25 mm
<b>Switching output</b>	2 x push-pull: PNP/NPN
<b>Output function</b>	IO-Link
<b>Electrical wiring</b>	DC 4-wire
<b>Enclosure rating</b>	IP67
<b>Adjustment</b>	
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
<b>Diagnostic functionality</b>	Actuator diagnosis
<b>Special features</b>	Completely embedded mounting in the slot, providing protection

<sup>1)</sup> Deviations are possible depending on the drive.

#### Mechanics/electronics

<b>Supply voltage</b>	10 V DC ... 30 V DC
<b>Voltage drop</b>	≤ 1 V
<b>Continuous current I<sub>a</sub></b>	≤ 200 mA <sup>1)</sup>
<b>Protection class</b>	III

<sup>1)</sup> ≤ 200 mA (PUSH); ≥ -200 mA (PULL).

<sup>2)</sup> The sensor must not be subjected to magnetic fields strengths of > 20 mT!

<sup>3)</sup> For measuring range > 37 mm, the following applies for the resolution: Measuring range / 3,723.

<sup>4)</sup> At 25 ° C, linearity error (maximum deviation) depending on response curve and minimal deviation function.

<sup>5)</sup> At 25 ° C, repeatability magnet movement in one direction.

<b>Time delay before availability</b>	0.175 s
<b>Power consumption</b>	≤ 550 mW
<b>Required magnetic field sensitivity, typ.</b>	2 mT ... 20 mT <sup>2)</sup>
<b>Overrun distance</b>	Configurable
<b>Hysteresis</b>	Configurable
<b>Resolution, typ.</b>	0,01 mm <sup>3)</sup>
<b>Linearity error, typ.</b>	0.3 mm <sup>4)</sup>
<b>Repeat accuracy, typ.</b>	0.05 mm <sup>5)</sup>
<b>Sampling rate, typ.</b>	1 ms
<b>Reverse polarity protection</b>	Yes
<b>Short-circuit protection</b>	Yes
<b>Status indicator LED</b>	Yes
<b>Digital switching output</b>	Yes
<b>Teach-in</b>	Yes
<b>Ambient operating temperature</b>	-20 °C ... +70 °C
<b>Shock and vibration resistance</b>	30 g, 11 ms / 10 ... 55 Hz, 1 mm
<b>EMC</b>	According to EN 60947-5-2
<b>Connection type</b>	Cable with connector M12, 4-pin, with knurled nut, 0.3 m
<b>Connection type Detail</b>	
Conductor cross section	0.08 mm <sup>2</sup>
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
<b>Control elements connection cable</b>	
Connection type	Cable, 4-wire, 0.1 m
<b>Control elements connection cable detail</b>	
Conductor size	0.09 mm <sup>2</sup>
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
<b>Material</b>	
Housing	Plastic, PA, strengthened
Cable	PUR
Control element	Plastic, TPU, reinforced

<sup>1)</sup> ≤ 200 mA (PUSH); ≥ -200 mA (PULL).

<sup>2)</sup> The sensor must not be subjected to magnetic fields strengths of > 20 mT!

<sup>3)</sup> For measuring range > 37 mm, the following applies for the resolution: Measuring range / 3,723.

<sup>4)</sup> At 25 °C, linearity error (maximum deviation) depending on response curve and minimal deviation function.

<sup>5)</sup> At 25 °C, repeatability magnet movement in one direction.

## Safety-related parameters

<b>MTTF<sub>D</sub></b>	358 years
<b>DC<sub>avg</sub></b>	0 %
<b>T<sub>M</sub> (mission time)</b>	20 years

## Communication interface

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

## Diagnosis

<b>Actuator diagnosis</b>	
Status data	Cycle count, travel time, cylinder travel, dwell time, piston velocity, alarm notifications
Magnetic field strength	2 mT ... 18 mT

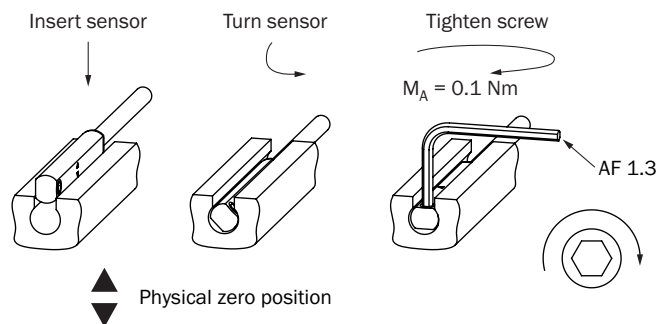
## Certificates

<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China-RoHS</b>	✓
<b>cULus certificate</b>	✓

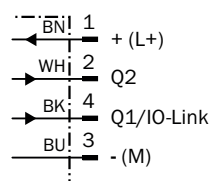
## Classifications

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

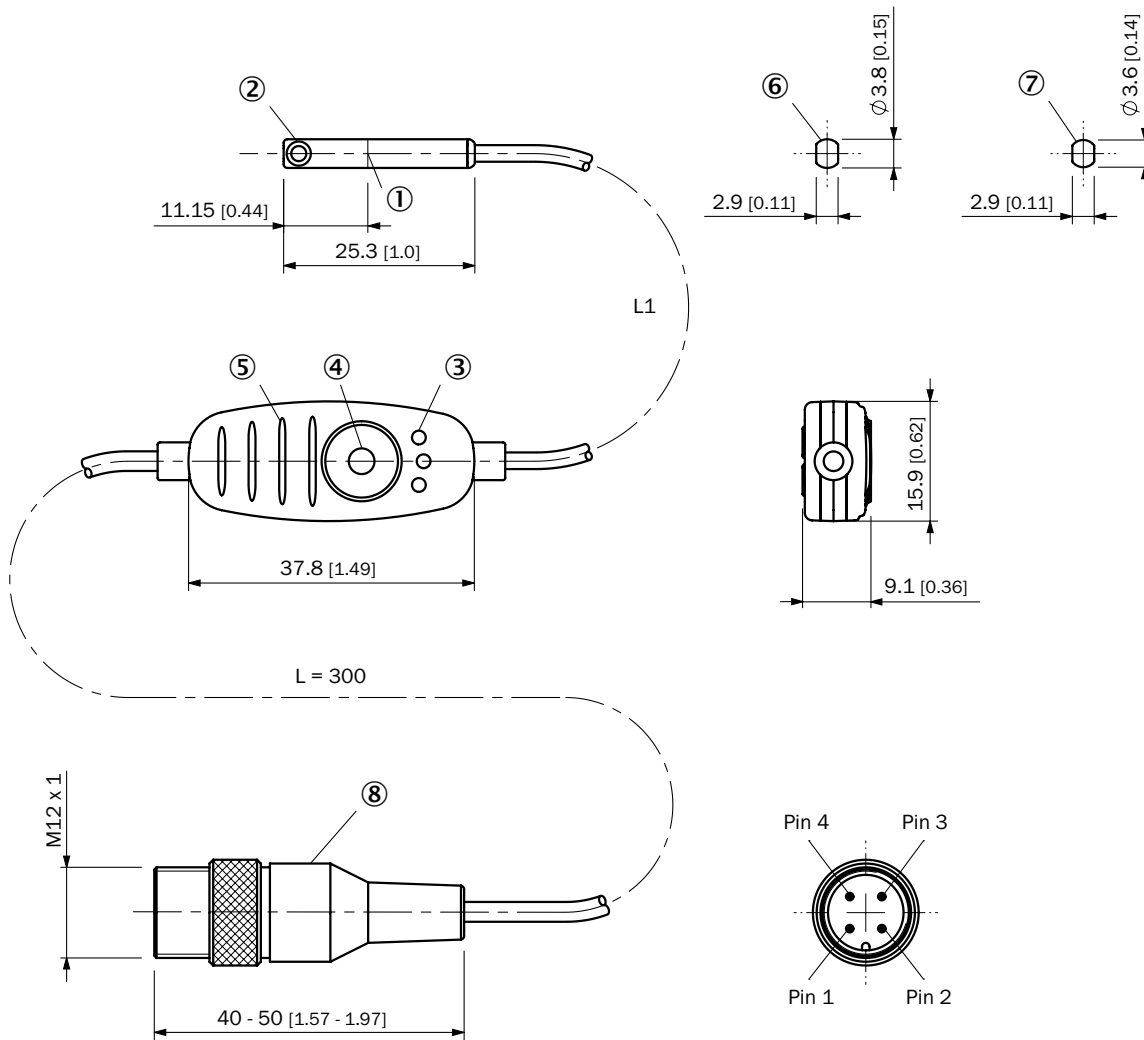
## Installation note



## Connection diagram Cd-466



### Dimensional drawing Cable with connector M12, 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
1127845	MPS-G50CFH13E31DZZ	100 mm	4
1127846	MPS-G50CSH13E31DZZ	100 mm	4
1127847	MPS-G50CSH53E31DZZ	500 mm	4
1149229	MPS-G50CSHA5D31DZZ	1000 mm	4


Recommended accessories

Other models and accessories → [www.sick.com/MPS-G](http://www.sick.com/MPS-G)

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"><li>• <b>Description:</b> Mounting is by means of the enclosed adhesive pad, 2x M3 countersunk screws or 2x cable ties</li><li>• <b>Material:</b> Plastic</li><li>• <b>Details:</b> Plastic</li><li>• <b>Items supplied:</b> Including double-sided adhesive pad</li><li>• <b>Usable for:</b> MPS-G</li></ul>	BEF-CPMPS-G	2117133
	<ul style="list-style-type: none"><li>• <b>Description:</b> Preferred manufacturer slot Festo, SMC, Pneumax, Airtec</li><li>• <b>Material:</b> Plastic</li><li>• <b>Details:</b> Plastic</li><li>• <b>Usable for:</b> MPS-G, MZC2, MZ2Q-C</li></ul>	BEF-KHZ-TC3	2117770

	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"><li>• <b>Connection type head A:</b> Male connector, M12, 4-pin, straight, A-coded</li><li>• <b>Description:</b> Unshielded</li><li>• <b>Connection systems:</b> Screw-type terminals</li><li>• <b>Permitted cross-section:</b> ≤ 0.75 mm²</li></ul>	STE-1204-G	6009932

## 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.”

## WORLDWIDE PRESENCE:

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