



# MPS-G50CSH15D31DZZ

MPS-G

POSITION SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
MPS-G50CSH15D31DZZ	1127849

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>	<table border="0"> <tr> <td style="vertical-align: top;">Teach-in button</td> <td>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</td> </tr> <tr> <td style="vertical-align: top;">IO-Link</td> <td>Configuration of up to 8 switching points</td> </tr> </table>	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
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IO-Link	Configuration of up to 8 switching points				
<b>Diagnostic functionality</b>	Vibration Orientation Temperature Maximum acceleration 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
<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 M8, with knurled nuts, 0.5 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>	

<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.

Housing	Plastic, PA, strengthened
Cable	PUR
Control element	Plastic, TPU, reinforced

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<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.

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### 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 8 ... 15 = scaling Bit 16 ... 31 = position (in x10 µm)

### Diagnosis

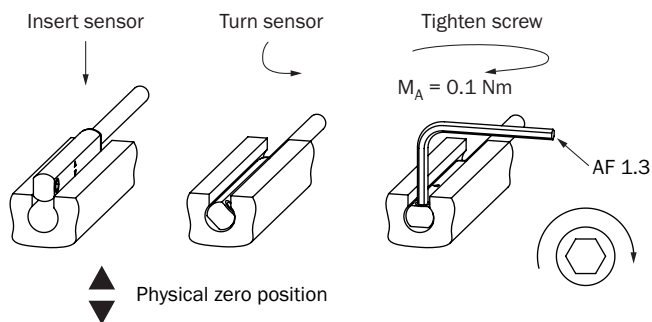
<b>Vibration</b>	
Number of axis	3
Measuring range a-RMS	0 g ... 5.6 g
Frequency range	Typ. 1.4 kHz
Noise	Typ. 14 mg
Update rate	1.25 Hz
Vibration analysis	A-RMS, kurtosis, pulse factor
<b>Orientation</b>	
Number of axis	2
Roll Euler angle measuring range	± 180°
Pitch Euler angle measuring range	± 90°
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
<b>Device temperature</b>	
Measuring range	-125 °C ... +125 °C
Accuracy	Typ. ± 1 °C
<b>Maximum acceleration</b>	
Measuring range	± 8 g

	Update rate	1 kHz
<b>Actuator diagnosis</b>	Status data	Cycle count, travel time, cylinder travel, dwell time, piston velocity
	Magnetic field strength	2 mT ... 18 mT

Classifications

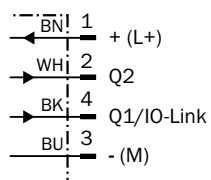
<b>ECLASS 5.0</b>	27270104
<b>ECLASS 5.1.4</b>	27270104
<b>ECLASS 6.0</b>	27270104
<b>ECLASS 6.2</b>	27270104
<b>ECLASS 7.0</b>	27270104
<b>ECLASS 8.0</b>	27270104
<b>ECLASS 8.1</b>	27270104
<b>ECLASS 9.0</b>	27270104
<b>ECLASS 10.0</b>	27270104
<b>ECLASS 11.0</b>	27270104
<b>ECLASS 12.0</b>	27274301
<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



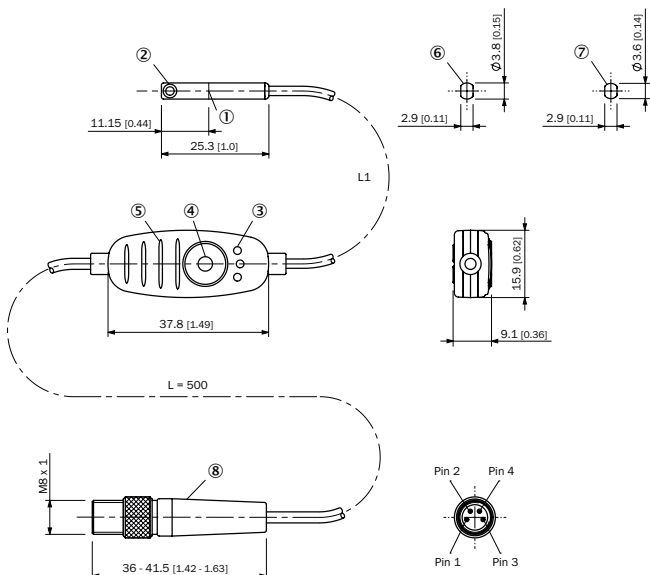
Connection diagram

Cd-466



### Dimensional drawing (Dimensions in mm (inch))

Cable with connector M8, with knurled nuts




- 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

### Recommended accessories

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

	Brief description	Type	Part no.
Connection modules			
	IO-Link V1.1 Class A port, USB2.0 port, optional external power supply 24V / 1A	IOLA2US-01101 (SiLink2 Master)	1061790

	Brief description	Type	Part no.
Brackets for cylinder sensors			
	Mounting is by means of the enclosed adhesive pad, 2x M3 countersunk screws or 2x cable ties, plastic, including double-sided adhesive pad	BEF-CPMPS-G	2117133
	Preferred manufacturer slot Festo, SMC, Pneumax, Airtec, plastic	BEF-KHZ-TC3	2117770
Sensor Integration Gateway			
	<ul style="list-style-type: none"> <li><b>Further functions:</b> Web server integrated, IIoT interface available (dual talk)</li> <li><b>Logic editor:</b> no</li> <li><b>Communication interface:</b> IO-Link, Ethernet, PROFINET, REST API, MQTT, OPC UA</li> <li><b>Product category:</b> IO-Link Master</li> </ul>	SIG350-0004AP100	6076871
	<ul style="list-style-type: none"> <li><b>Further functions:</b> Web server integrated, IIoT interface available (dual talk)</li> <li><b>Logic editor:</b> no</li> <li><b>Communication interface:</b> IO-Link, Ethernet, EtherNet/IP™, REST API, MQTT, OPC UA</li> <li><b>Product category:</b> IO-Link Master</li> </ul>	SIG350-0005AP100	6076923
	<ul style="list-style-type: none"> <li><b>Further functions:</b> Web server integrated, IIoT interface available (dual talk)</li> <li><b>Logic editor:</b> no</li> <li><b>Communication interface:</b> IO-Link, Ethernet, EtherCAT®, REST API, MQTT, OPC UA</li> <li><b>Product category:</b> IO-Link Master</li> </ul>	SIG350-0006AP100	6076924
	<ul style="list-style-type: none"> <li><b>Further functions:</b> Web server integrated, USB connection for easy configuration of the SIG200 Sensor Integration Gateway with SOPAS ET, the engineering tool from SICK, logic editor is available for easy configuration of logic functions</li> <li><b>Connection CONFIG:</b> 1 x M8, 4-pin female connector, USB 2.0 (USB-A)</li> <li><b>Logic editor:</b> yes</li> <li><b>Communication interface:</b> IO-Link, USB, Ethernet, PROFINET, REST API</li> <li><b>Product category:</b> IO-Link Master</li> </ul>	SIG200-0A0412200	1089794
	<ul style="list-style-type: none"> <li><b>Description:</b> The SIG200 Sensor Integration Gateway is an IO-Link master with 4 configurable ports through which the IO-Link devices or standard inputs or standard outputs can be connected to a PLC or cloud application using the REST API.</li> <li><b>Further functions:</b> Web server integrated, USB connection for easy configuration of the SIG200 Sensor Integration Gateway with SOPAS ET, the engineering tool from SICK, logic editor is available for easy configuration of logic functions</li> <li><b>Connection CONFIG:</b> 1 x M8, 4-pin female connector, USB 2.0 (USB-A)</li> <li><b>Logic editor:</b> yes</li> <li><b>Communication interface:</b> IO-Link, USB, Ethernet, EtherNet/IP™, REST API</li> <li><b>Product category:</b> IO-Link Master</li> </ul>	SIG200-0A0512200	1089796
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## 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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