



Magnetic Cylinder Sensors  
Analog positioning sensors

MPA-683THTP0



**Model Name** > [MPA-683THTP0](#)  
**Part No.** > [1059470](#)



**At a glance**

- Measured lengths from 107 to 1007 mm in 36 mm steps
- Output signals 4 to 20 mA as well as 0 to 10 V in a single sensor
- Can be mounted on various cylinders thanks to its universal housing with adapters, e.g., cylinders with T-slot, round and tie rod cylinders
- Linearity of 0.5 mm at a sample rate of 1.15 ms
- Accuracy of 0.03 % as well as reproducibility of 0.06 %
- IP 67 enclosure rating
- Flexible sensor settings, monitoring, advanced diagnostics, and visualization thanks to IO-Link

**Your benefits**

- High flexibility through measuring ranges from 107 to 1007 mm
- Increased machine performance thanks to the sensor's minimal blind zone
- Saves time due to configurable start and end points via intelligent Teach Pad
- A rugged aluminum housing, the capacitive Teach Pad and the anti-kink cable guarantees a long operational lifetime of the sensor and reduces maintenance costs
- Time savings through simple commissioning and diagnostics thanks to a 4-color LED display
- Analog power, voltage signal and IO-Link in a single sensor reduces the range of variants and thereby lowers warehousing costs
- IO-Link provides easy data access from the PLC
- Quick and easy configuration



**Features**

Output function:	Analog
Electrical wiring:	DC 4-wire
Enclosure rating:	IP 65, IP 67
Cylinder types with adapter:	Roundbody cylinder T-slot Tie rod cylinder
Teach-in:	1
Analog output (voltage):	0 V ... 10 V
Analog output (current):	4 mA ... 20 mA
Housing length:	685 mm
Measuring range:	683 mm <sup>1)</sup>
IO-Link functions:	Standard functions

1)  $\pm 1$  mm

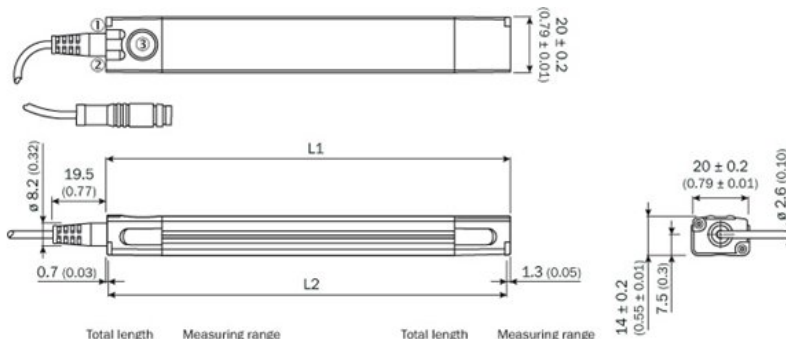
## Mechanics/electronics

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Connection type:	Cable with connector M8, 4-pin, 300 mm <sup>1)</sup>
Supply voltage:	15 V DC ... 30 V DC
EMC:	According to EN 60947-5-7 <sup>2)</sup>
Cable material:	PUR
Conductor cross-section:	0.14 mm <sup>2</sup>
Reverse polarity protection:	✓
Short-circuit protection:	✓
Housing material:	Aluminium
Housing cap material:	PA, strengthened
Ambient operating temperature:	-20 °C ... 70 °C
Load resistance, max.:	500 $\Omega$ <sup>3)</sup>
Min. load resistance:	2 k $\Omega$ <sup>4)</sup>
Magnetic field sensitivity, min.:	2 mT
Output indicator:	✓
Linearity typ.:	0.5 mm
Protection class:	III
Resolution typ.:	0.03 % FSR (max. $\geq 0.06$ mm) <sup>5)</sup>
Repeat accuracy typ.:	0.06 % FSR ( $\geq 0.1$ mm) <sup>6)</sup>
Shock/vibration:	30 g, 11 ms/10 Hz ... 55 Hz, 1 mm
IO-Link:	✓
Sampling rate:	1 ms

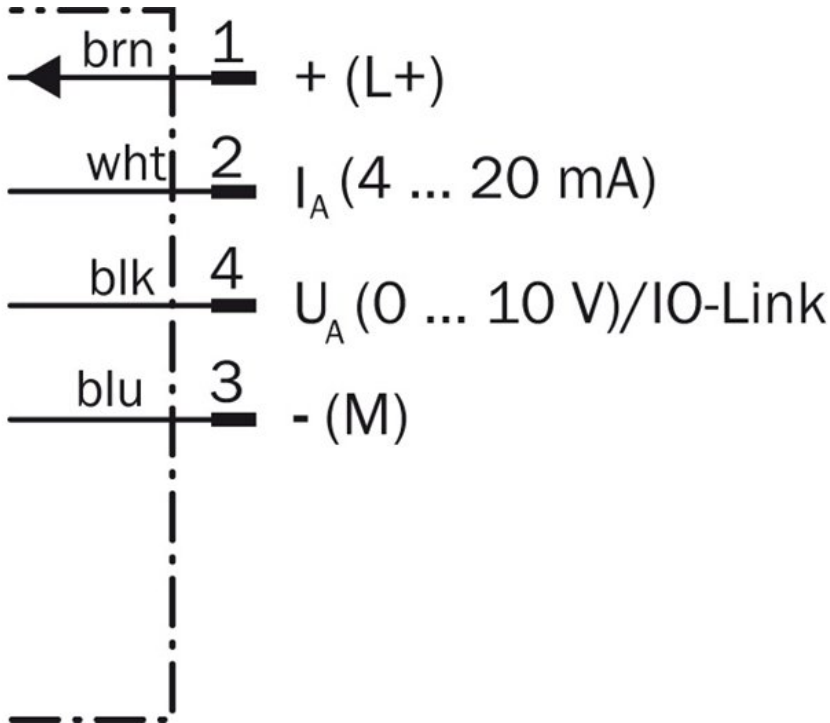
1) Do not bend below 0 °C <sup>2)</sup> The analog measured value can deviate under transient conditions <sup>3)</sup> Power output <sup>4)</sup> Voltage output <sup>5) 6)</sup> FSR: Full Scale Range; max. measuring range

## Dimensional drawing



	Total length (L1) mm	Measuring range (L2) mm		Total length (L1) mm	Measuring range (L2) mm
<b>MPA-107</b>	109	107	<b>MPA-575</b>	577	575
<b>MPA-143</b>	145	143	<b>MPA-611</b>	613	611
<b>MPA-179</b>	181	179	<b>MPA-647</b>	649	647
<b>MPA-215</b>	217	215	<b>MPA-683</b>	685	683
<b>MPA-251</b>	253	251	<b>MPA-719</b>	721	719
<b>MPA-287</b>	289	287	<b>MPA-755</b>	757	755
<b>MPA-323</b>	325	323	<b>MPA-791</b>	793	791
<b>MPA-359</b>	361	359	<b>MPA-827</b>	829	827
<b>MPA-395</b>	397	395	<b>MPA-863</b>	865	863
<b>MPA-431</b>	433	431	<b>MPA-899</b>	901	899
<b>MPA-467</b>	469	467	<b>MPA-935</b>	937	935
<b>MPA-503</b>	505	503	<b>MPA-971</b>	973	971
<b>MPA-539</b>	541	539	<b>MPA-1007</b>	1,009	1,007

## Connection diagram



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