



Magnetic Cylinder Sensors  
Analog positioning sensors

MPA-431THTU0



**Model Name** > [MPA-431THTU0](#)  
**Part No.** > [1059461](#)



**At a glance**

- Analog positioning sensor that can be mounted with adapters on various cylinders thanks to its universal housing, e.g., cylinders with T-slot, round and tie rod cylinders
- Measuring lengths from 107 mm to 1,007 mm in 36 mm steps
- Output signals 4 mA to 20 mA as well as 0 V to 10 V in a single sensor
- Linearity of 0.5 mm at a sample rate of 1.15 ms and an resolution of 0.06 mm
- Electric setting of zero point and end point via teach-in button
- IP 67 enclosure rating

**Your benefits**

- Maximum flexibility through measuring ranges from 107 mm to 1,007 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
- Flexible sensor settings, monitoring, advanced diagnostics, and visualization thanks to IO-Link save time and money



**Features**

Output function:	Analog, IO-Link
Electrical wiring:	DC 4-wire
Teach-in:	1
Cylinder types with adapter:	Roundbody cylinder T-slot Tie rod cylinder
Measurement range:	431 mm <sup>1)</sup>
Housing length:	433 mm
Analog output (voltage):	0 V ... 10 V
Analog output (current):	4 mA ... 20 mA
Enclosure rating:	IP 65 IP 67 <sup>2)</sup> IP 68
IO-Link functions:	Standard functions

1)  $\pm 1$  mm 2) According to EN 60529

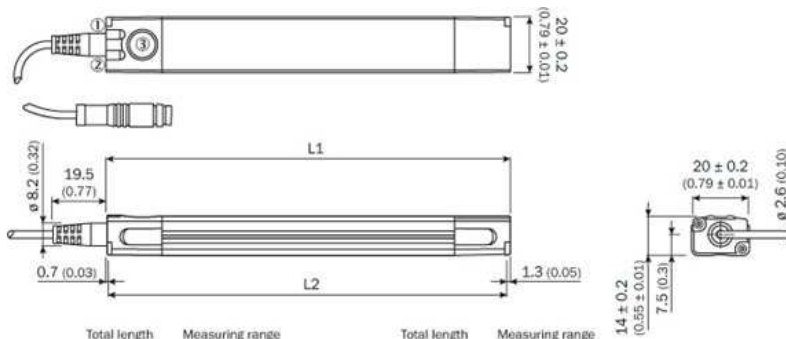
## Mechanics/electronics

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Connection type:	Cable, 2 m <sup>1)</sup>
Supply voltage:	15 V DC ... 30 V DC
EMC:	According to EN 60947-5-2 <sup>2)</sup>
Load resistance, max.:	500 $\Omega$ <sup>3)</sup>
Min. load resistance:	2 k $\Omega$ <sup>4)</sup>
Cable material:	PUR
Conductor cross-section:	0.14 mm <sup>2</sup>
Reverse polarity protection:	✓
Short-circuit protection:	✓
Housing cap material:	PA, strengthened
IO-Link:	✓
Output indicator:	✓
Linearity typ.:	0.5 mm
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 and vibration resistance:	30 g, 11 ms/10 Hz ... 55 Hz, 1 mm
Ambient operating temperature:	-20 °C ... +70 °C
Protection class:	III
Magnetic field sensitivity, typ.:	2 mT
Sampling rate typ.:	1.15 ms
Housing material:	Aluminum

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

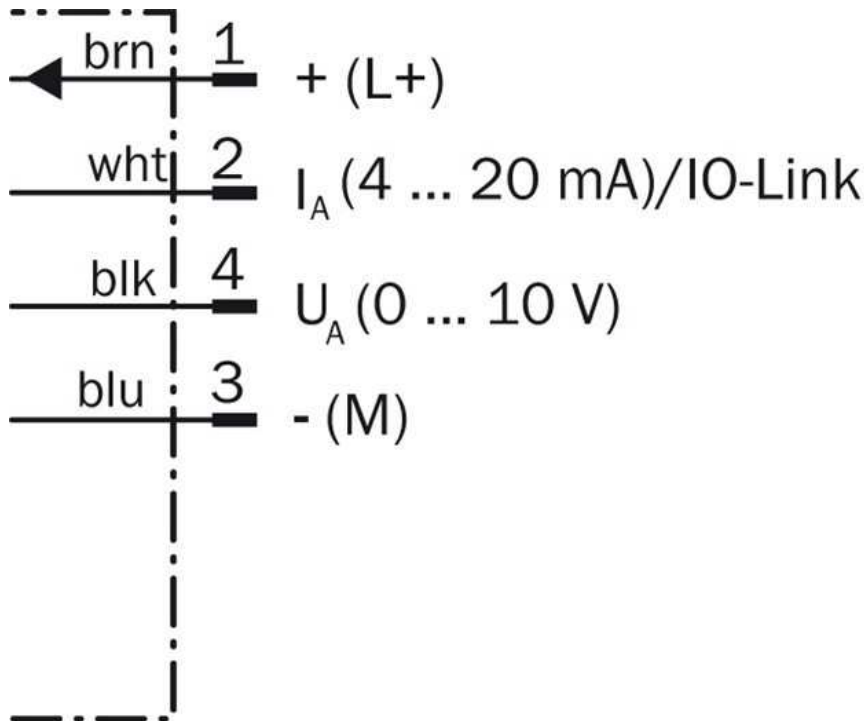
## Dimensional drawing



- |1| Function signal indicator 1
- |2| Function signal indicator 2
- |3| Teach-Pad

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

## Connection diagram



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