



Magnetic Cylinder Sensors
Analog positioning sensors

MPA-431THTP0



Model Name > [MPA-431THTP0](#)
Part No. > [1059460](#)



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:	433 mm
Measuring range:	431 mm ¹⁾
IO-Link functions:	Standard functions

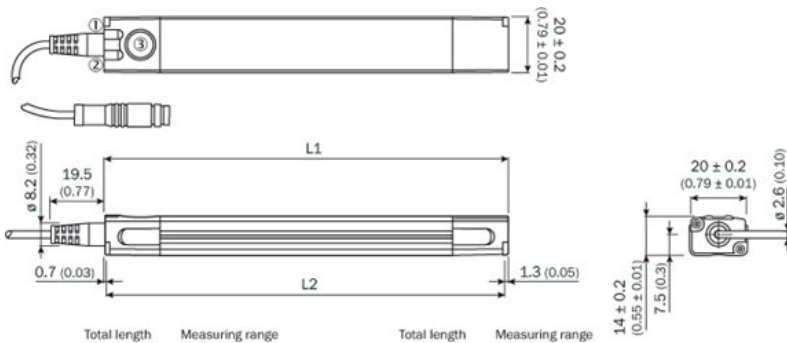
1) ± 1 mm

Mechanics/electronics

Connection type:	Cable with connector M8, 4-pin, 300 mm ¹⁾
Supply voltage:	15 V DC ... 30 V DC
EMC:	According to EN 60947-5-7 ²⁾
Cable material:	PUR
Conductor cross-section:	0.14 mm ²
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 Ω ³⁾
Min. load resistance:	2 k Ω ⁴⁾
Magnetic field sensitivity, min.:	2 mT
Output indicator:	✓
Linearity typ.:	0.5 mm
Protection class:	III
Resolution typ.:	0.03 % FSR (max. ≥ 0.06 mm) ⁵⁾
Repeat accuracy typ.:	0.06 % FSR (≥ 0.1 mm) ⁶⁾
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 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

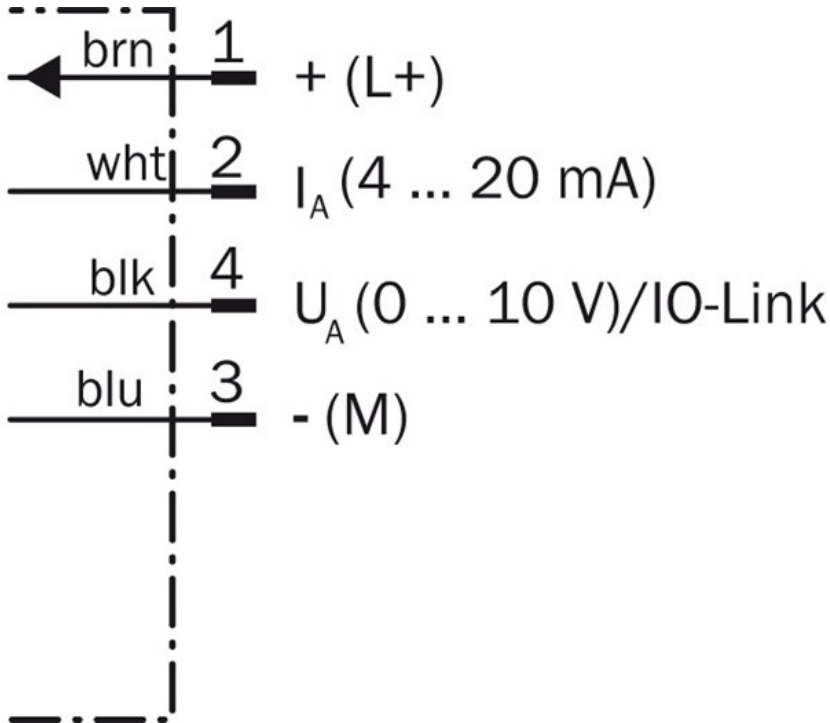
Dimensional drawing



- |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	575
MPA-143	145	143	MPA-611	613	611
MPA-179	181	179	MPA-647	649	647
MPA-215	217	215	MPA-683	685	683
MPA-251	253	251	MPA-719	721	719
MPA-287	289	287	MPA-755	757	755
MPA-323	325	323	MPA-791	793	791
MPA-359	361	359	MPA-827	829	827
MPA-395	397	395	MPA-863	865	863
MPA-431	433	431	MPA-899	901	899
MPA-467	469	467	MPA-935	937	935
MPA-503	505	503	MPA-971	973	971
MPA-539	541	539	MPA-1007	1,009	1,007

Connection diagram



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