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DATA SHEET

# MPA-539THTP0

MPA
Cylinder sensors

SICK
Sensor Intelligence



## CYLINDER SENSORS

# MPA-539THTP0

### ORDERING INFORMATION

| Type | part no. |
|---|---|
| MPA-539THTP0 | 1059466 |

Further device versions and accessories at www.sick.com/MPA

## DETAILED TECHNICAL DATA

### FEATURES

| | |
|---|---|
| Cylinder type | Universal |
| Cylinder types with adapter | Round body cylinder<br>Tie rod cylinder<br>T-slot cylinders<br>Festo cylinders DSBC<br>SMC cylinders CP96 |
| Measuring range | 539 mm [1] |
| Housing length | 541 mm |
| Output function | Analog, IO-Link |
| Electrical wiring | DC 4-wire |
| Analog output (voltage) | 0 V ... 10 V |
| Analog output (current) | 4 mA ... 20 mA [2] |
| Enclosure rating | IP65 [3]<br>IP67<br>IP68 |
| Adjustment | |
| Teach-in control panel | Teaching in the measuring range<br>Selecting the current/voltage output or IO-Link<br>Resetting the measuring range to factory settings |
| IO-Link | Teaching in the measuring range<br>Resetting the measuring range |
| IO-Link functions | Standard functions |

[1] ± 1 mm.

[2] Default setting: Current output active.

[3] According to EN 60529.

## MECHANICS/ELECTRONICS

| | |
|---|---|
| Supply voltage | 15 V DC ... 30 V DC |
| Power consumption | 35 mA, without load |
| Max. load resistance | ≤ 500 Ω Power Output, at 24 V |
| Min. load resistance | ≥ 2 kΩ [1] |
| Protection class | III |
| Required magnetic field sensitivity, typ. | 2 mT ... 15 mT |
| Resolution, typ. | 0.03 % FSR (max. ≥ 0.06 mm) [2] [3] |
| Linearity error, typ. | 0.5 mm [4] |
| Repeat accuracy, typ. | 0.06 % FSR (≥ 0.1 mm) [5] |
| Sampling rate, typ. | 1.15 ms [6] |
| Reverse polarity protection | Yes |
| Short-circuit protection | Yes |
| Status indicator LED | Yes |
| Teach-in | Yes |
| Ambient operating temperature | –20 °C ... +70 °C |
| Shock and vibration resistance | 30 g, 11 ms/10 Hz ... 55 Hz, 1 mm |
| EMC | According to EN 60947-5-2 [7] |
| Connection type | Cable with M8 male connector, 4-pin, 0.3 m |
| Connection type Detail | |
| Deep-freeze property | Do not bend below 0 °C |
| Conductor cross section | 0.08 mm² |
| Cable diameter | Ø 2.6 mm |
| Bending radius | With fixed installation > 5 x cable diameter<br>For flexible use > 10 x cable diameter |
| Cable outlet | Axial |
| Material | |
| Housing | Metal, Aluminum<br>Plastic |
| Cable | PUR |
| UL File No. | NRKH.E181493 & NRKH7.E181493 |

[1] Voltage output.

[2] FSR: Full Scale Range; max. measuring range.

[3] When using IO-Link, the resolution is 0.25 mm.

[4] At 25 ° C, linearity error (maximum deviation) depending on response curve and minimal deviation function.

[5] At 25 ° C, repeatability magnet movement in one direction.

[6] Only in standard mode, not in IO-Link mode.

[7] The analog measured value can deviate under transient conditions.

## SAFETY-RELATED PARAMETERS

| | |
|---|---|
| $MTTF_D$ | 123 years |
| $DC_{avg}$ | 0 % |
| $T_M$ (mission time) | 20 years |

## COMMUNICATION INTERFACE

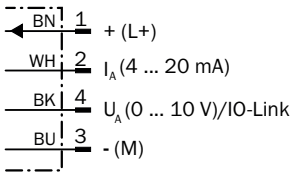
| | |
|---|---|
| Communication interface | IO-Link V1.0.1 |
| Communication Interface detail | COM2 |
| Cycle time | 2.3 ms |

| | |
|---|---|
| Process data length | 16 Bit |
| Process data structure | Bit 0 ... 3 = reserved<br>Bit 4 ... 5 = position (after decimal point)<br>Bit 6 ... 15 = position (before decimal point) |

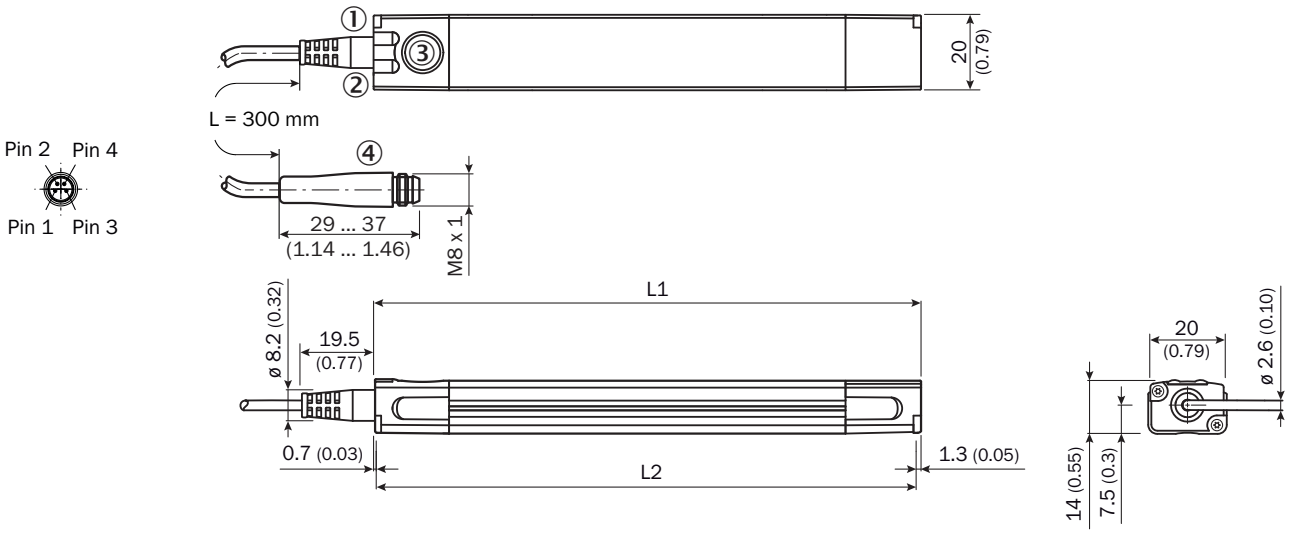
## CERTIFICATES

| | |
|---|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| ACMA declaration of conformity | ✓ |
| Moroccan declaration of conformity | ✓ |
| China RoHS | ✓ |
| China Compulsory Product Certification (CCC) exempt | ✓ |
| cULus certificate | ✓ |
| IO-Link certificate | ✓ |
| Information according to Art. 3 of Data Act (Regulation EU 2023/2854) | ✓ |

## CONNECTION DIAGRAM CD-230



**DIMENSIONAL DRAWING CABLE WITH M8 MALE CONNECTOR, 4-PIN**




| | Total length (L1) mm | Measuring range (L2) mm |
|---|---|---|
| **MPA-107** | 109 | 107 |
| **MPA-143** | 145 | 143 |
| **MPA-179** | 181 | 179 |
| **MPA-215** | 217 | 215 |
| **MPA-251** | 253 | 251 |
| **MPA-287** | 289 | 287 |
| **MPA-323** | 325 | 323 |
| **MPA-359** | 361 | 359 |
| **MPA-395** | 397 | 395 |
| **MPA-431** | 433 | 431 |
| **MPA-467** | 469 | 467 |
| **MPA-503** | 505 | 503 |
| **MPA-539** | 541 | 539 |

| | Total length (L1) mm | Measuring range (L2) mm |
|---|---|---|
| **MPA-575** | 577 | 575 |
| **MPA-611** | 613 | 611 |
| **MPA-647** | 649 | 647 |
| **MPA-683** | 685 | 683 |
| **MPA-719** | 721 | 719 |
| **MPA-755** | 757 | 755 |
| **MPA-791** | 793 | 791 |
| **MPA-827** | 829 | 827 |
| **MPA-863** | 865 | 863 |
| **MPA-899** | 901 | 899 |
| **MPA-935** | 937 | 935 |
| **MPA-971** | 973 | 971 |
| **MPA-1007** | 1,009 | 1,007 |

Dimensions in mm (inch)
① Function signal indicator 1
② Function signal indicator 2
③ Teach-Pad
④ Connection

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1059466

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