



MPA-251THTU0

MPA

POSITION SENSORS

SICK
Sensor Intelligence.



Ordering information

| Type | Part no. |
|--------------|----------|
| MPA-251THTUO | 1059451 |

Other models and accessories → www.sick.com/MPA



Detailed technical data

Features

| | |
|------------------------------------|---|
| Cylinder types with adapter | Round body cylinder Tie rod cylinder T-slot cylinders Festo cylinders DSBC SMC cylinders CP96 |
| Measuring range | 251 mm ¹⁾ |
| Housing length | 253 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 |
| Teach-in | ✓ |
| Enclosure rating | IP65, IP67, IP68 ²⁾ |
| IO-Link functions | Standard functions |

¹⁾ , ± 1 mm.

²⁾ According to EN 60529.

Mechanics/electronics

| | |
|-----------------------|-----------------------------------|
| Supply voltage | 15 V DC ... 30 V DC ¹⁾ |
|-----------------------|-----------------------------------|

¹⁾ Reverse-polarity protected, operation in short-circuit protected network: max. 8 A.

²⁾ Without load.

³⁾ Power Output, at 24 V.

⁴⁾ Voltage output.

⁵⁾ FSR: Full Scale Range; max. measuring range.

⁶⁾ At 25 ° C, linearity error (maximum deviation) depending on response curve and minimal deviation function.

⁷⁾ At 25 ° C, repeatability magnet movement in one direction.

⁸⁾ Only in standard mode, not in IO-Link mode.

⁹⁾ The analog measured value can deviate under transient conditions.

¹⁰⁾ Do not bend below 0 ° C.

| | |
|--|---|
| Power consumption | ≤ 35 mA ²⁾ |
| Max. load resistance | ≤ 500 Ω ³⁾ |
| Min. load resistance | ≥ 2 kΩ ⁴⁾ |
| Protection class | III |
| Required magnetic field sensitivity, typ. | 2 mT |
| Resolution, typ. | 0.03 % FSR (max. ≥ 0.06 mm) ⁵⁾ |
| Linearity error, typ. | 0.5 mm ⁶⁾ |
| Repeat accuracy, typ. | 0.06 % FSR (≥ 0.1 mm) ⁷⁾ |
| Sampling rate, typ. | 1.15 ms ⁸⁾ |
| IO-Link | ✓ |
| Status indicator LED | ✓ |
| Reverse polarity protection | ✓ |
| Short-circuit protection | ✓ |
| 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 ⁹⁾ |
| Housing material | Metal, Aluminum, Plastic |
| Connection type | Cable, 2 m ¹⁰⁾ |
| Cable material | PUR |
| Conductor cross-section | 0.08 mm ² |
| UL File No. | NRKH.E181493 |

- 1) Reverse-polarity protected, operation in short-circuit protected network: max. 8 A.
- 2) Without load.
- 3) Power Output, at 24 V.
- 4) Voltage output.
- 5) FSR: Full Scale Range; max. measuring range.
- 6) At 25 °C, linearity error (maximum deviation) depending on response curve and minimal deviation function.
- 7) At 25 °C, repeatability magnet movement in one direction.
- 8) Only in standard mode, not in IO-Link mode.
- 9) The analog measured value can deviate under transient conditions.
- 10) Do not bend below 0 °C.

Classifications

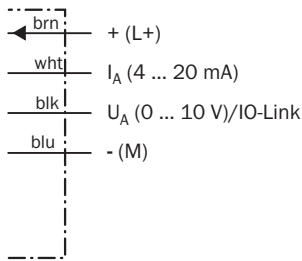
| | |
|---------------------|----------|
| ECI@ss 5.0 | 27270104 |
| ECI@ss 5.1.4 | 27270104 |
| ECI@ss 6.0 | 27270104 |
| ECI@ss 6.2 | 27270104 |
| ECI@ss 7.0 | 27270104 |
| ECI@ss 8.0 | 27270104 |
| ECI@ss 8.1 | 27270104 |
| ECI@ss 9.0 | 27270104 |
| ETIM 5.0 | EC002544 |
| ETIM 6.0 | EC002544 |

UNSPSC 16.0901

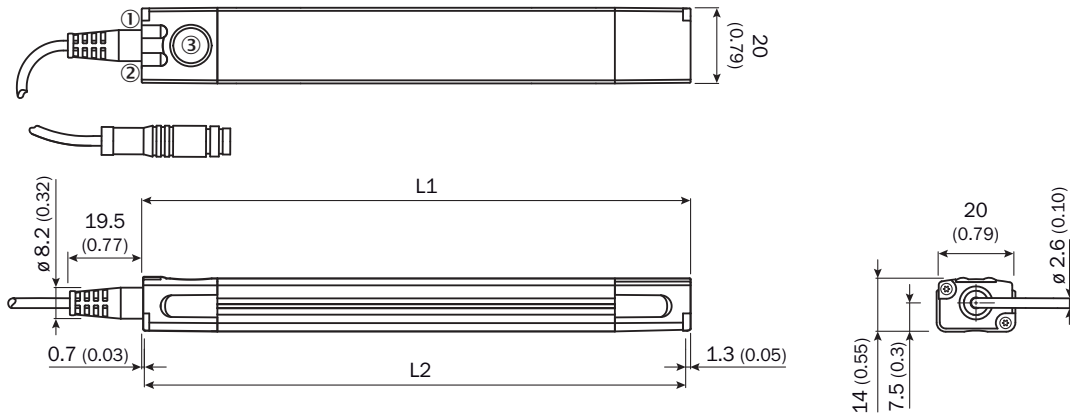
39122230

Connection diagram

Cd-354



Dimensional drawing (Dimensions in mm (inch))










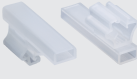

| | Total length (L1) mm | Measuring range (L2) mm |
|----------------|----------------------|-------------------------|
| MPA-107 | 109 | 107 |
| MPA-143 | 145 | 143 |
| MPA-179 | 181 | 179 |
| MPA-215 | 217 | 215 |
| MPA-251 | 253 | 251 |
| MPA-287 | 289 | 287 |
| MPA-323 | 325 | 323 |
| MPA-359 | 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 |

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

Recommended accessories

Other models and accessories → www.sick.com/MPA

| | Brief description | Type | Part no. |
|---|--|-----------------|----------|
| Brackets for cylinder sensors | | | |
|  | Sensor adapter DSBC-32, Stainless steel V2A | BEF-KHZPF032MPA | 2086744 |
|  | For tie-rod cylinder (diameter tie-rod max. 18 mm), Aluminum alloy (adapter), Stainless steel V2A (mounting-/fixing screw) | BEF-KHZPZ1MPA | 2065578 |
|  | For round body cylinders with diameter up to 85 mm, Stainless steel V2A | BEF-KHZR085MPA | 2066626 |
| | For round body cylinders with diameter up to 135 mm, Stainless steel V2A | BEF-KHZR135MPA | 2066627 |
| | For round body cylinders with diameter up to 210 mm, Stainless steel V2A | BEF-KHZR210MPA | 2066628 |
|  | Sensor adapter CP96-63, Stainless steel V2A | BEF-KHZTS063MPA | 2086756 |
| | Sensor adapter CP96-80, Stainless steel V2A | BEF-KHZTS080MPA | 2086757 |
| | Sensor adapter CP96-100, Stainless steel V2A | BEF-KHZTS100MPA | 2086758 |
| | Sensor adapter CP96-125, Stainless steel V2A | BEF-KHZTS125MPA | 2086759 |
|  | For T-slot cylinders, Stainless steel V2A (bracket/mounting screw), Brass (fixing screw/sliding nut) | BEF-KHZT01MPA | 2065575 |
| Mounting brackets and plates | | | |
|  | Bracket for low mounting, Stainless steel V2A (bracket/mounting screw), Brass (fixing screw) | BEF-WNLO1MPA | 2065973 |
|  | Bracket for lateral mounting, Stainless steel V2A (bracket/mounting screw), Brass (fixing screw) | BEF-WNZO1MPA | 2065577 |
| Other mounting accessories | | | |
|  | 10 pieces, Label Holder, 2.5 mm to 3.5 mm, 10 pcs., TPU | LABEL HOLDER | 2086019 |
| Magnets | | | |
|  | Magnet with mounting hole for M3 countersunk screw, Ø 15.2 mm, height 6 mm | Magnet | 5327349 |

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.”

WORLDWIDE PRESENCE:

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