

# LINEAR POTENTIOMETER



## LME12 / LMI12 Series

### Key-Features:

- Linear displacement transducer with magnetic cursor drag
- Suitable for harsh environment applications (IP67)
- Up to 20 bar for pneumatic cylinders (LME12)
- Up to 250 bar for hydraulic cylinders (LMI12)
- Displacement speed  $\leq 5$  m/s
- Linearity up to  $\pm 0.05$  %
- Working temperature  $-30 \dots +100$  °C
- Life cycle  $> 25 \times 10^6$  meter or  $100 \times 10^6$  operations, whichever is less
- Simple apparatus according to the EN 60079-11 standard

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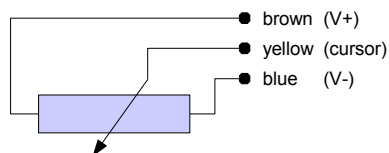
## TECHNICAL DATA

|   |  |
|---|--|
| Measurement range                               | 50 / 100 / 150 / 200 / 250 / 300 / 350 / 400 / 450 / 500 / 550 / 600 / 650 / 700 / 750 / 800 / 850 / 900 / 950 / 1000 mm |
| Displacement speed                              | ≤5 m/s   |
| Cursor dragging force                           | ≤0.5 N   |
| Tolerance on resistance                         | ±20 %  |
| Maximum acceleration                            | ≤10 m/s <sup>2</sup>   |
| Resolution                                      | Resolution depends on the signal quality of the reference voltage respectively supply voltage.                           |
| Repeatability                                   | ≤0.08 mm   |
| Recommended cursor current                      | <0.1 μA  |
| Max. permitted dissipation                      | <10 mW   |
| Max. cursor current in case of bad performances | <0.1 μA  |
| Hysteresis                                      | ≤ 0.25 mm  |
| Temperature coefficient of the resistance       | ±200 ppm/°C  |
| Temperature coefficient output voltage          | <1.5 ppm/°C  |
| Electrical isolation                            | >100 MΩ at 500V=, 1 bar, 2 s   |
| Dielectric strength                             | <100 μA at 500 V~, 50 Hz, 1 bar, 2 s   |
| Working temperature                             | -30...+100 °C  |
| Storage temperature                             | -50...+120 °C  |
| Housing material                                | anodised aluminium, PSU (LME12) / high grade steel AISI 304 (LMI12)  |
| Mounting  | flange/brackets  |
| Displacement sensitivity                        | from 0.05 to 0.1 mm (hysteresis not considered)  |
| DIN vibration IEC68T2-6                         | 12 g, 10...2000 Hz   |
| Shock test DIN IEC68T2-27                       | 50 g, 11 ms, single shock  |
| Protection class LME12                          | IP67, pressure sealed up to 20 bar   |
| Protection class LMI12                          | IP67, pressure sealed up to 250 bar  |

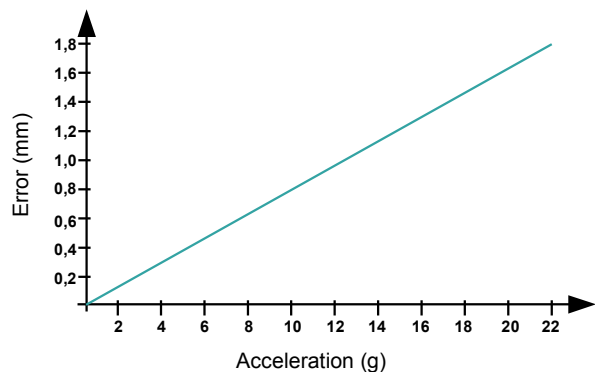
## ELECTRICAL AND MECHANICAL DATA

|  |        |        |     |     |     |     |      |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
|--|--------|--------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Measurement range/useful electrical stroke (B) | [mm]   | 50     | 100 | 150 | 200 | 250 | 300  | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 |
| Theoretical electrical stroke (C)              | [mm]   | B + 1  |     |     |     |     |      |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| Resistance                                     | [kOhm] | 5      |     |     |     |     | 10   |     |     |     |     | 20  |     |     |     |     |     |     |     |     |      |
| Linearity                                      | [±%]   | 0.1    |     |     |     |     | 0.05 |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| Dissipation at 40 °C (0 W at 120 °C)           | [W]    | 1      | 2   | 3   |     |     |      |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| Maximum applicable voltage                     | [V]    | 40     | 60  |     |     |     |      |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| Mechanical stroke (D)                          | [mm]   | B + 5  |     |     |     |     |      |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| Case length (A) LME12                          | [mm]   | B + 65 |     |     |     |     |      |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| Case length (A) LMI12                          | [mm]   | B + 97 |     |     |     |     |      |     |     |     |     |     |     |     |     |     |     |     |     |     |      |

### Electrical Connection

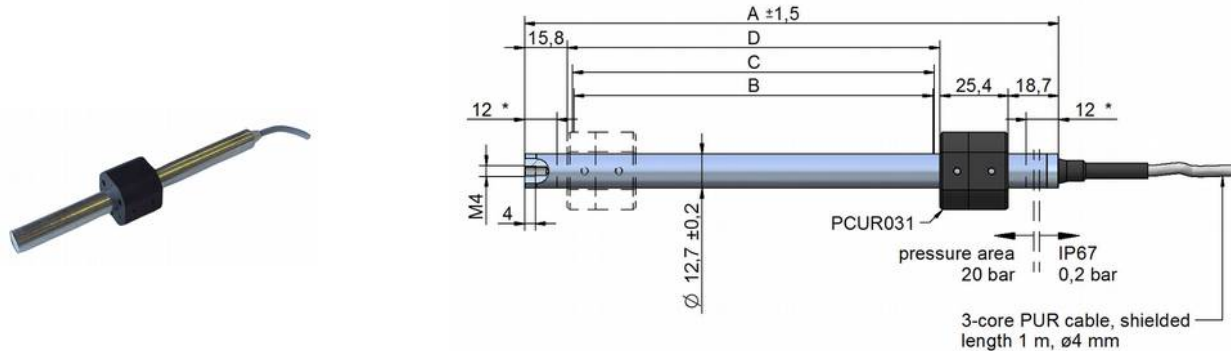


### Tracking Error



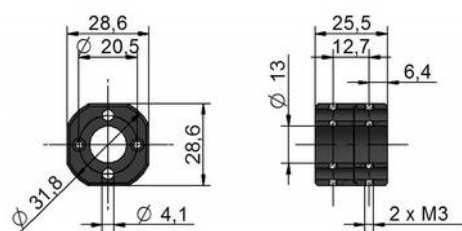
# TECHNICAL DRAWING

LME12

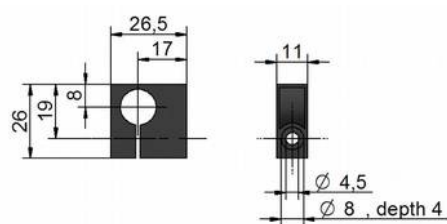


Included in delivery: 1 magnet PCUR031 and 2 brackets STA001

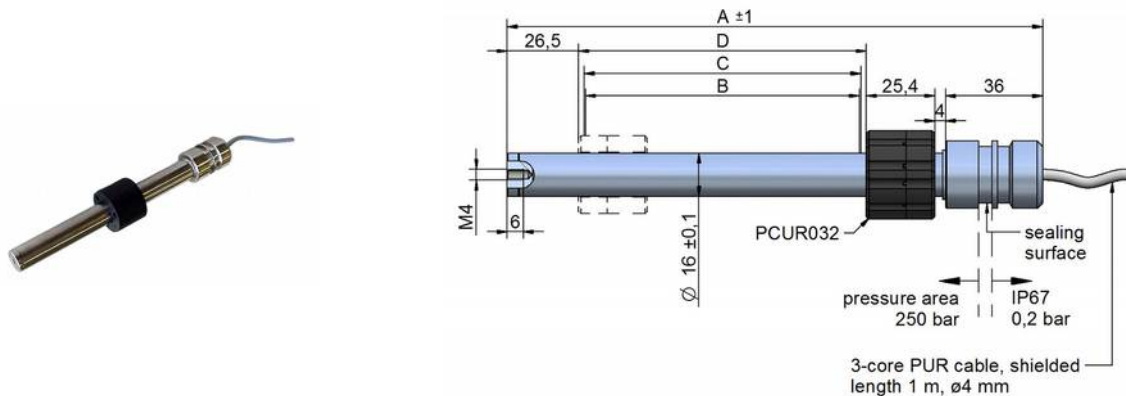
Magnet PCUR031



Bracket STA001

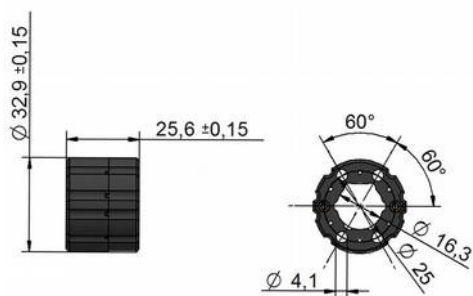


LMI12

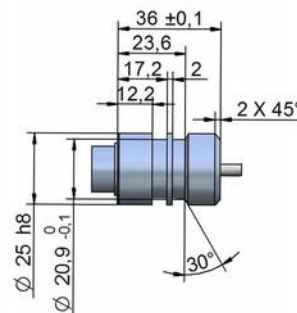


Included in delivery: 1 magnet PCUR032

Magnet PCUR032

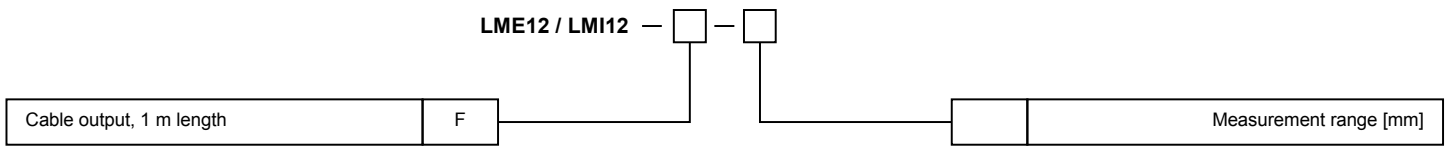


Flange dimensions



**Instruction for installation:** After the installation of the sensor, the ring magnet has to be placed onto the sensor rod. In order to link the magnet to the sensor element, the magnet has to be pushed once fully to the end of the sensor rod (up to flange/cable connection).

## ORDER CODE



LME12: Included in delivery: 1 magnet PCUR031 and 2 brackets STA001

LMI12: Included in delivery: 1 magnet PCUR032

## ACCESSORIES

STA001 (for LME12) 1 bracket (2 units included in delivery)

PCUR031 (for LME12) 1 magnet (1 piece included in delivery)

PCUR032 (for LMI12) 1 magnet (1 piece included in delivery)

### Signal conditioner

PMX-24 converts the potentiometer signal into an analog output

For further information please contact WayCon or [download](#) the data sheet.



Subject to change without prior notice.

**WayCon Positionsmesstechnik GmbH**

email: [info@waycon.de](mailto:info@waycon.de)

internet: [www.waycon.de](http://www.waycon.de)

**Head Office**

Mehlbeerenstr. 4

82024 Taufkirchen

Tel. +49 (0)89 67 97 13-0

Fax +49 (0)89 67 97 13-250

**Office Köln**

Auf der Pehle 1

50321 Brühl

Tel. +49 (0)2232 56 79 44

Fax +49 (0)2232 56 79 45