

# MDL41

## Core Separated DC LVDT Displacement Sensor

**MeasureX**

### Features

- High Accuracy Non-contact Sensing Technology
- Measurement Range of 2.5mm to 500mm
- Compact and Rugged Model Suitable for Displacement, Position, Stroke and Thickness Measurement
- Absolute Displacement Output



### Description

MDL41 series with stainless steel sensor rod is a rugged linear variable differential transformer (LVDT) technology based displacement sensor with hermitically sealed integrated circuit (IP67) for harsh dynamic environments. This compact sensor offers great flexibility and reliability for a wide range of applications with highly competitive pricing.



MDL41 is available in displacement ranges from 2.5 to 500mm with an output of mA or V without requirement of any additional signal conditioner (digital and wireless outputs are available as well, for high quantity applications). It is suitable for displacement measurement for industrial applications that demand high accuracy. While the standard Precision is 0.5% FS, you can optionally get a precision of 0.25% FS. The robust construction of MDL41 with its high performance makes it ideal for demanding long term industrial applications such as tolerance control systems and automation systems. MDL41 is equipped with extension rod with flexible thread size and length based on your request. Non-conductive mounting block is optionally available for fast and easy installation.

### Applications

- Automation
- Hydraulic cylinder positioning
- Construction and mining industry
- Aerospace, automotive and rail
- Gap and tolerance control systems
- Industrial machinery positioning
- Valve position control
- Inspection and quality control systems

### Technical Specifications

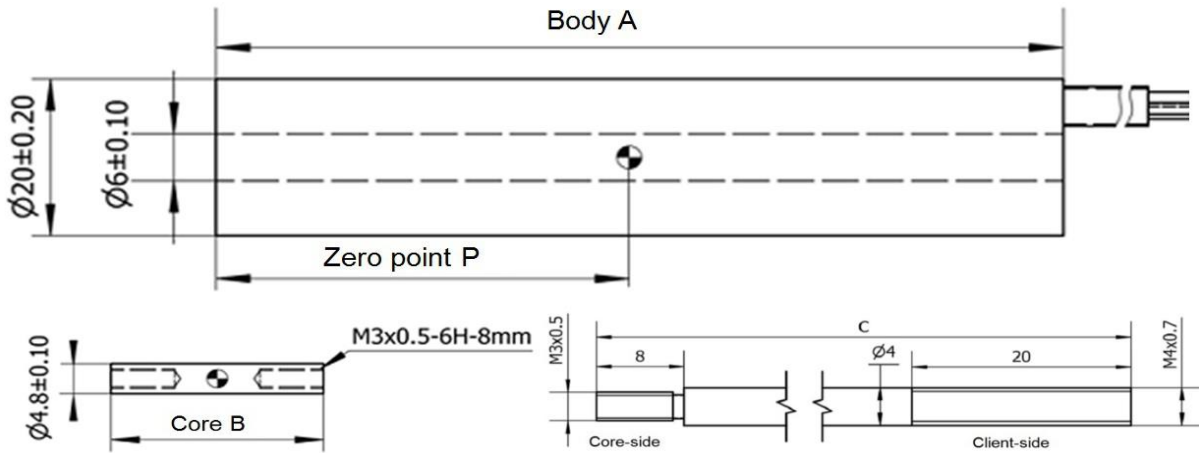
- **Ranges:** 2.5 to 500mm
- **Output:** 4/20mA (24VDC  $\pm$ 20% input voltage)  
0/10V (15VDC input voltage)  
0/5VDC (12VDC  $\pm$ 20%input voltage)  
0.5/4.5VDC (5VDC input voltage)  
other
- **Current consumption:**  $\leq$ 10mA for VDC output
- **Nonlinearity:**  $\pm$ 0.5% FS (standard),  $\pm$ 0.25% FS
- **Mechanical Repeatability:**  $\leq$  0.01% FS
- **Frequency response:** 250Hz
- **Noise Level (Ripple):** <15mVrms or 25 $\mu$ Arms
- **Protection level:** IP67
- **Operating temp. range:** -20 to +85°C
- **Temp. coefficient of zero:**  $\leq$  0.01% FS/°C
- **Temp. coefficient of span:** 0.025% FS /°C
- **Load resistance (4/20mA output):** 500 $\Omega$  at 24VDC input
- **Mounting block:** available as option
- **Electrical connection:** 2 or 3-wire shielded cable
- **Body material:** SS304
- **Core extension rod material:** non-magnetic SS304 or SS304L
- **Core extension rod size:** as per table 1 (next page) or other options

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### Dimensions



MDL41 dimension

Table 1: Sensor dimension

| Measuring range (mm) | 2.5 | 5  | 10  | 15  | 25  | 50  | 100 | 250 | 500 | Wiring        |                     |
|----------------------|-----|----|-----|-----|-----|-----|-----|-----|-----|---------------|---------------------|
| Body A               | 80  | 90 | 110 | 130 | 170 | 210 | 290 | 498 | 800 | <b>Red:</b>   | Power +             |
| Core B               | 20  | 30 | 40  | 50  | 70  | 80  | 120 | 150 | 180 | <b>Black:</b> | Power -<br>Signal - |
| Zero point P         | 21  | 26 | 36  | 46  | 66  | 86  | 126 | 230 | 381 | <b>Blue:</b>  | Signal +            |
| Extension rod C      | 58  | 58 | 68  | 78  | 98  | 128 | 168 | 346 | 618 |               |                     |

### Ordering Code

| MDL41     |              |  |                |       |
|-----------|--------------|--|----------------|-------|
| MDL41     | Range        | 2.5, 5, 10, 15, 25, 50, 100, 250, 500mm<br>or any other ranges in mm |                |       |
|           | Nonlinearity | 0.5%   |                | 0.25% |
|           |              | Output Signal  |                |       |
|           | 4/20mA       |  | 0/5V volts     |       |
|           | 0/10V volts  |  | 0.5/4.5V volts |       |
| or others |              | Electrical Connection  |                |       |
|           |              | 1m Cable   |                |       |
|           |              | others   |                |       |
| MDL41     | 25mm         | 0.5%   | 4/20mA         | 1m    |

**Note:** All specifications are subject to change without prior notice  
Mounting block is available as an option for this product.

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