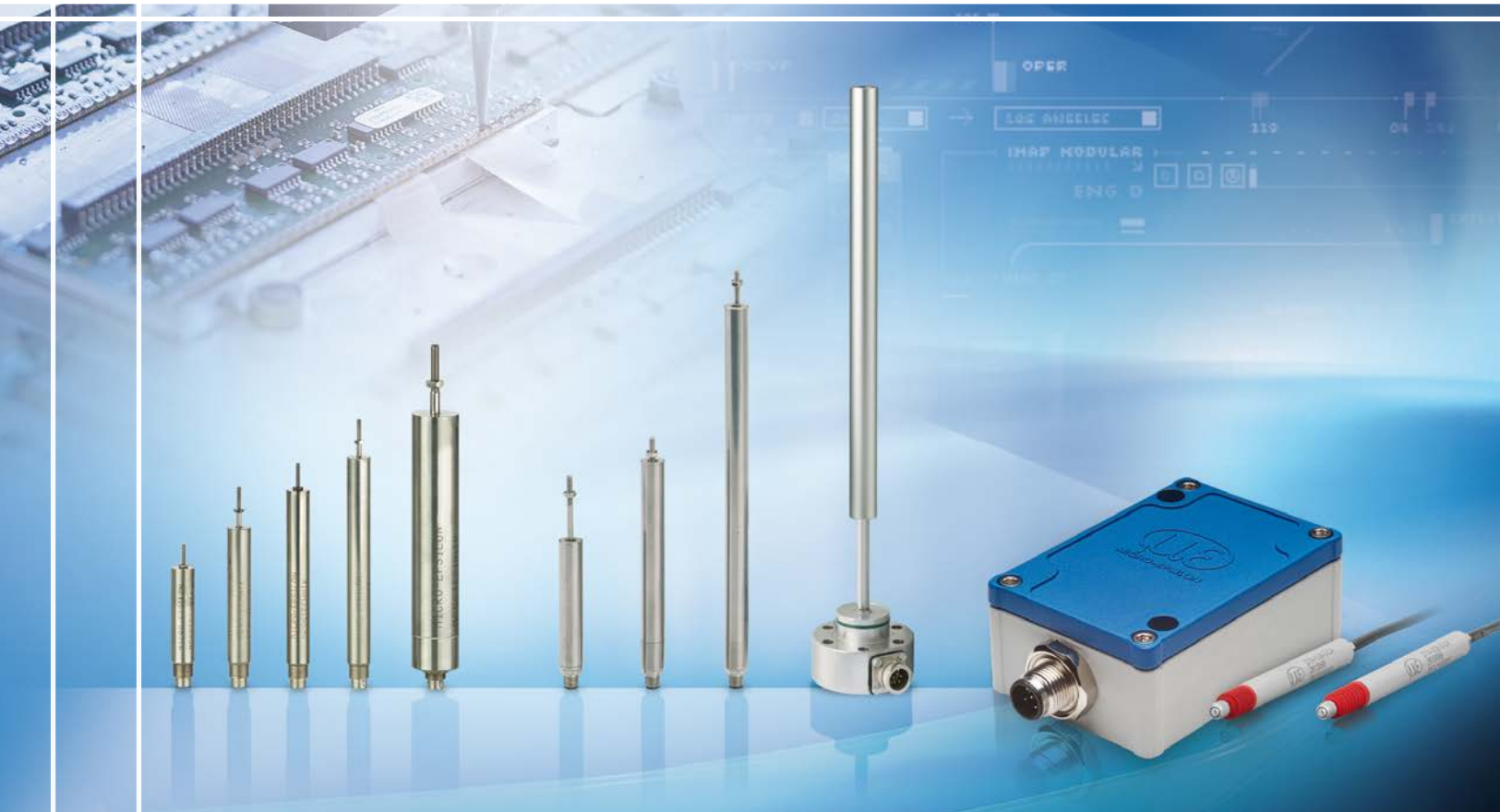




# More Precision

**induSENSOR** // Linear inductive displacement sensors





- *Wear-free and maintenance-free*
- *Temperature stability*
- *Operating temperature range up to 160 °C*
- *Compact design – short installation length*
- *Small sensor diameter*
- *High measurement signal quality*

The specific sensor configuration of the LDR series of linear displacement sensors is characterized by its short, compact design and small diameter. Three connections are required as an interface to the sensor. The compact design and the small sensor diameter facilitate the installation of the measuring systems in locations where space is restricted.

#### **Typical applications**

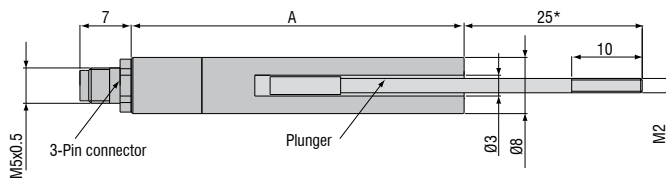
Low-cost LDR sensors are also particularly suitable for large-scale installation under restricted spatial conditions and in industrial environments with a high measuring rate.

| Model   | LDR-10-   |   | LDR-25-               |           | LDR-50-               |           |
|---|---|---|-----------------------|-----------|-----------------------|-----------|
| Connection  | SA  | CA  | SA                    | CA        | SA                    | CA        |
| Measuring range                                   | 10 mm   |   | 25 mm                 |           | 50 mm                 |           |
| Measuring principle                               | LDR - sensor  |   |                       |           |                       |           |
| Linearity   | typ. $\pm 0.30\%$ FSO                               |   | typ. $\pm 0.35\%$ FSO |           | typ. $\pm 0.5\%$ FSO  |           |
|   | $\pm 0.030$ mm                                      |   | $\pm 0.088$ mm        |           | $\pm 0.35$ mm         |           |
|   | max. $\pm 0.50\%$ FSO                               |   |                       |           | max. $\pm 0.70\%$ FSO |           |
| Excitation frequency                              | 16 kHz  |   | 12 kHz                |           | 8 kHz                 |           |
| Excitation amplitude                              | 1 V <sub>eff</sub>                                  |   | 1 V <sub>eff</sub>    |           | 2.6 V <sub>eff</sub>  |           |
| Sensitivity                                       | 51 mV/Vmm   |   | 21 mV/Vmm             |           | 5.5 mV/Vmm            |           |
| Temperature range                                 | SA  | Storage: -40 ... +80 °C / Operation: -15 ... +80 °C                       |                       |           |                       |           |
|   | CA  | Storage: -40 ... +160 °C / Operation: -40 ... +160 °C                     |                       |           |                       |           |
| Temperature stability <sup>1)</sup>               | Zero  | 30 ppm / °C   |                       |           | 40 ppm / °C           |           |
|   | Max. temp. error                                    | 100 ppm / °C  |                       |           | 150 ppm / °C          |           |
| Housing (material)                                | ferromagnetic stainless steel                       |   |                       |           |                       |           |
| Weight sensor (without plunger)                   | 9 g   | 24 g  | 14 g                  | 28 g      | 23 g                  | 37 g      |
| Weight (plunger)                                  | 1.5 g   |   | 2.2 g                 |           | 3.5 g                 |           |
| Minimum bending radius (sensor cable fixed/moved) | 8 / 15 mm   | 10 / 30mm   | 8 / 15 mm             | 10 / 30mm | 8 / 15 mm             | 10 / 30mm |
| Outer diameter (sensor cable)                     | 3.1 mm  | 1.8 mm  | 3.1 mm                | 1.8 mm    | 3.1 mm                | 1.8 mm    |
| Protection class                                  | IP67  |   |                       |           |                       |           |
| Shock   | 40 g, 3000 shocks / axis                            |   |                       |           |                       |           |
|   | 100 g radial, 300 g axial                           |   |                       |           |                       |           |
| Vibration   | 5 ... 44 Hz $\pm 2.5$ mm / 44 ... 500 Hz $\pm 20$ g |   |                       |           |                       |           |
| Electrical connection                             | SA  | 3-pin plug-in connection (accessory cable, article 0157047/047, 3 or 5 m) |                       |           |                       |           |
|   | CA  | integral axial cable (shielded), 2 m                                      |                       |           |                       |           |
| Suitable controller                               | MSC7401 (pages 10 - 11)                             |   |                       |           |                       |           |

FSO = Full Scale Output SA = connector axial CA = cable axial

<sup>1)</sup> Determined according to box method (-40 ... +160 °C)

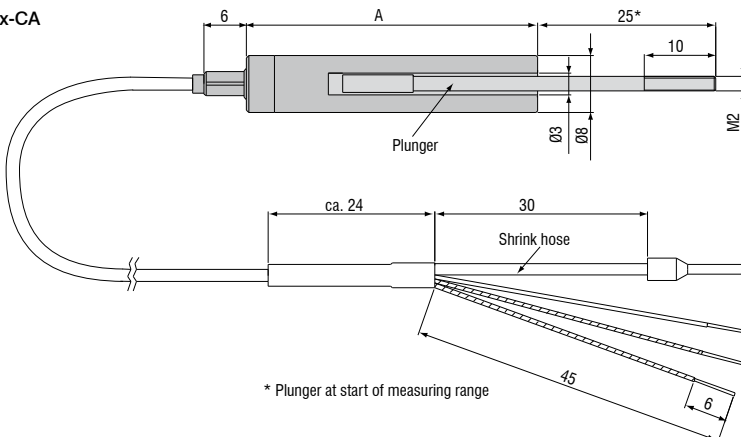
#### LDR-x-SA



\* Plunger at start of measuring range

| Model     | A      |
|-----------|--------|
| LDR-10-SA | 47 mm  |
| LDR-25-SA | 73 mm  |
| LDR-50-SA | 127 mm |

#### LDR-x-CA



\* Plunger at start of measuring range

| Model     | A      |
|-----------|--------|
| LDR-10-CA | 41 mm  |
| LDR-25-CA | 67 mm  |
| LDR-50-CA | 121 mm |

**General accessories**

|         |        |   |
|---------|--------|---|
| 2960031 | MC25D  | Digital micrometer calibration fixture  |
| 2420062 | PS2020 | Power supply on DIN rail,<br>input 100 - 240 VAC, output 24 VDC / 2.5 A   |
| 2984026 |        | Function and linearity inspection certificate incl. protocol<br>with listed measurement data of the linearity inspection<br>and documentation |
| 2213034 |        | IF7001 single-channel USB/RS485 converter   |

**Accessories for LDR series****Connection cables**

|         |              |   |
|---------|--------------|---|
| 0157047 | C7210-5/3    | Sensor cable, 5 m, with cable connector     |
| 0157048 | C7210/90-5/3 | Sensor cable, 5 m, with 90° cable connector |

**Supply cable**

|         |           |                          |
|---------|-----------|--------------------------|
| 2901087 | PC710-6/4 | Supply/output cable, 6 m |
|---------|-----------|--------------------------|

**Spare plungers**

|         |        |               |
|---------|--------|---------------|
| 0800136 | LDR-10 | Spare plunger |
| 0800137 | LDR-25 | Spare plunger |
| 0800138 | LDR-50 | Spare plunger |

**Service**

Connector installation and adjustment

**Accessories for EDS series****Service**

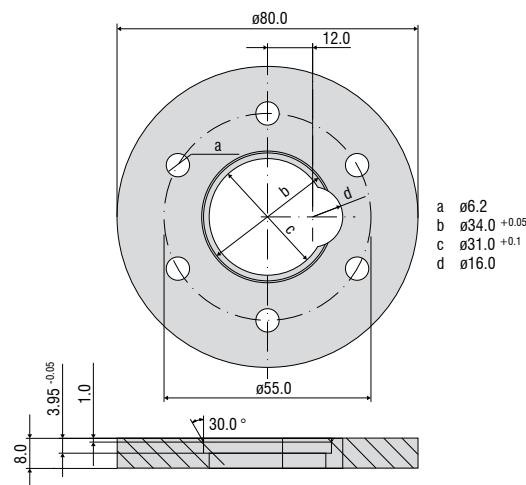
|         |  |   |
|---------|--|---|
| 2985001 |  | Function and linearity inspection for EDS series incl. pressure inspection<br>and documentation without recalibration |
|---------|--|---|

**Connection cables**

|         |           |  |
|---------|-----------|--|
| 0157043 | C703-5    | VIP/LVP/EDS 7-pin connection cable for S series, 5 m                               |
| 2902084 | C703-5/U  | VIP/LVP/EDS 7-pin connection cable for S series, 5 m<br>for voltage output 1 - 5 V |
| 0157050 | C703/90-5 | VIP/LVP/EDS 7-pin connection cable for S series, 5 m<br>with 90° cable connector   |
| 2901143 | C705-5    | VIP-/LVP-/EDS 5-pin connection cable for F series, 5 m                             |
| 2901160 | C705-15   | VIP-/LVP-/EDS 5-pin connection cable for F series, 15 m                            |

**Installation ring**

|         |  |                   |
|---------|--|-------------------|
| 0483326 |  | EDS mounting ring |
|---------|--|-------------------|



Linearity inspection certificate

## High performance sensors made by Micro-Epsilon



Sensors and systems for displacement and position



Sensors and measurement devices for non-contact temperature measurement



2D/3D profile sensors (laser scanner)



Optical micrometers, fiber optic sensors and fiber optics



Color recognition sensors, LED analyzers and color online spectrometer



Measurement and inspection systems