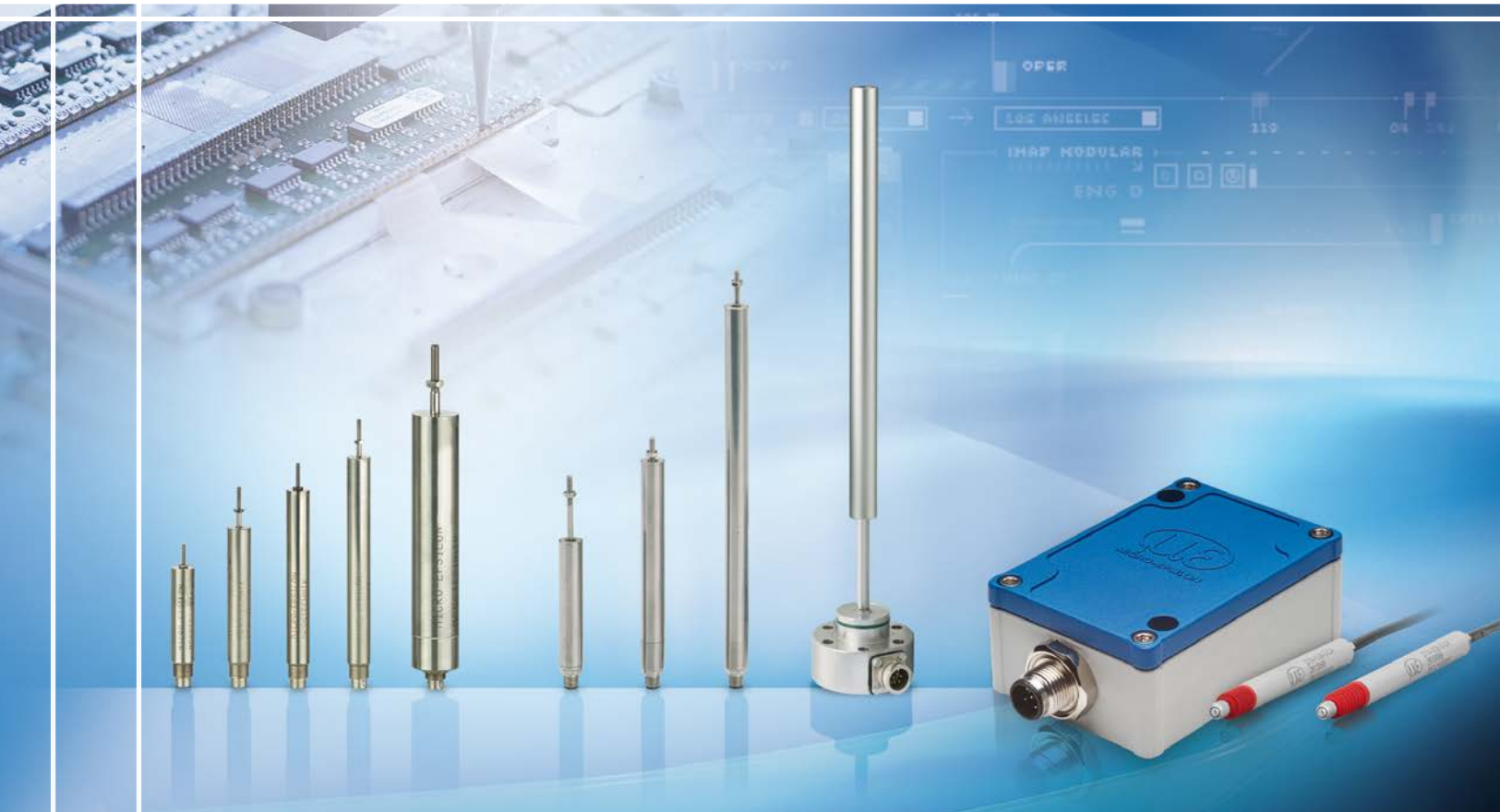




# More Precision

**induSENSOR** // Linear inductive displacement sensors





- *Measuring ranges from 75 ... 630 mm*
- *Linearity:  $\pm 0.3$  % FSO*
- *Integrated microelectronics*
- *Robust design: pressure-resistant, oil-resistant and maintenance-free*
- *Short offset ranges*

The sensor elements of the EDS series are protected by a pressure resistant stainless steel housing. The sensor electronics and signal conditioning are completely integrated in a sensor flange.

As a target an aluminum tube is used which is integrated into the piston rod and is passed over the sensor rod in a non-contact, wear-free manner.

Due to the eddy current principle applied, no permanent magnets need to be mounted inside the cylinder.

Its robust design make the EDS long-stroke sensor ideal for the integration into hydraulic and pneumatic cylinders, especially under harsh industrial conditions.

#### Typical applications

Long-stroke EDS sensors are designed for industrial use in hydraulic and pneumatic cylinders for the displacement and position measurement of pistons or valves, e.g. for the measurement of

- displacement, distance, position, gap
- deflection
- movement, stroke
- filling level, immersion depth and spring travel

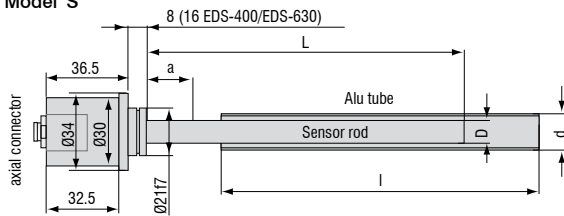


EDS series: integration in a hydraulic cylinder

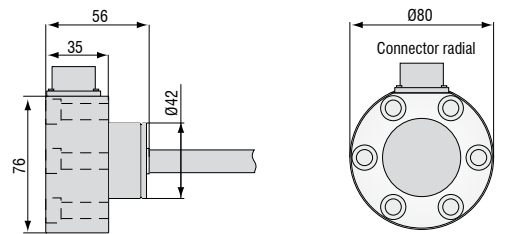
| Model                               | EDS-75   | EDS-100  | EDS-160 | EDS-200 | EDS-250 | EDS-300  | EDS-400 | EDS-500 | EDS-630 |          |
|-------------------------------------|--|--|---------|---------|---------|----------|---------|---------|---------|----------|
| Series                              | S  | S, F   | S, F    | S       | S, F    | S, F     | S, F    | S       | S, F    |          |
| Measuring range                     | 75 mm  | 100 mm   | 160 mm  | 200 mm  | 250 mm  | 300 mm   | 400 mm  | 500 mm  | 630 mm  |          |
| Linearity                           | ± 0.3 % FSO  | 0.23 mm  | 0.3 mm  | 0.48 mm | 0.6 mm  | 0.75 mm  | 0.9 mm  | 1.2 mm  | 1.5 mm  | 1.89 mm  |
| Resolution                          | 0.05 % FSO   | 0.038 mm   | 0.05 mm | 0.08 mm | 0.1 mm  | 0.125 mm | 0.15 mm | 0.2 mm  | 0.25 mm | 0.315 mm |
| Temperature range                   | -40 ... +85 °C   |  |         |         |         |          |         |         |         |          |
| Temperature stability               | ± 200 ppm / °C   |  |         |         |         |          |         |         |         |          |
| Frequency response (-3 dB)          | 150 Hz   |  |         |         |         |          |         |         |         |          |
| Output signal                       | 4 ... 20 mA  |  |         |         |         |          |         |         |         |          |
| Output load                         | 500 Ω  |  |         |         |         |          |         |         |         |          |
| Supply voltage                      | 18 ... 30 VDC  |  |         |         |         |          |         |         |         |          |
| Current consumption                 | max. 40mA  |  |         |         |         |          |         |         |         |          |
| Connection                          | S Series   | 7-pin connector (sensor cable as an option) with either radial or axial output |         |         |         |          |         |         |         |          |
|                                     | F series   | 5-pin radial bayonet-connector with mating plug                                |         |         |         |          |         |         |         |          |
| Pressure resistance                 | 450 bar (sensor rod, flange)   |  |         |         |         |          |         |         |         |          |
| Protection class                    | IP67   |  |         |         |         |          |         |         |         |          |
| Electromagnetic compatibility (EMC) | DIN EN 61326-1:2006 interference emission<br>DIN EN 61326-2-3:2007 interference immunity |  |         |         |         |          |         |         |         |          |
| Shock <sup>1)</sup>                 | 40 g, 3000 shocks / axis<br>100 g radial, 300 g axial                                    |  |         |         |         |          |         |         |         |          |
| Vibration                           | 5 ... 44 Hz ± 2.5 mm<br>44 ... 500 Hz ± 23 g   |  |         |         |         |          |         |         |         |          |
| Material                            | V4A-Steel 1.4571   |  |         |         |         |          |         |         |         |          |

FSO = Full Scale Output <sup>1)</sup> Half sinusoid 6 ms

**Model S**

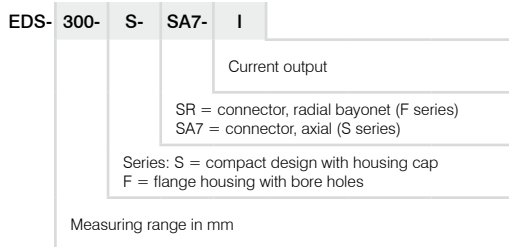


**Model F**



6 mounting holes ø9mm on pitch circle ø63mm

**Article designation**



| Measuring ranges | Sensor rod |    | Aluminum tube   |               | Offset |
|------------------|------------|----|-----------------|---------------|--------|
|                  | L          | D  | l               | d             |        |
| 75               | 110        | 10 | 110             | 16            | 15     |
| 100              | 140        | 10 | 140             | 16            | 20     |
| 160              | 200        | 10 | 200             | 16            | 20     |
| 200              | 240        | 10 | 240             | 16            | 20     |
| 250              | 290        | 10 | 290             | 16            | 20     |
| 300              | 340        | 10 | 340             | 16            | 20     |
| 400              | 450        | 12 | 450 (S) 460 (F) | 18 (S) 26 (F) | 25     |
| 500              | 550        | 12 | 550             | 18            | 25     |
| 630              | 680        | 12 | 680 (S) 690 (F) | 18 (S) 26 (F) | 25     |

**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**

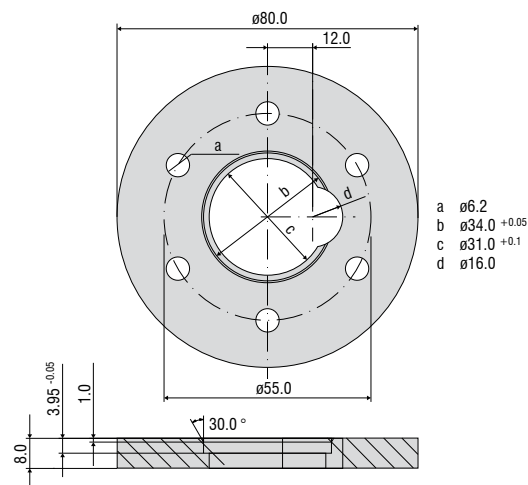
|         |  |   |
|---------|--|---|
| 2985001 |  | Function and linearity inspection for EDS series incl. pressure inspection<br>and documentation without recalibration |
|---------|--|---|

**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