More Precision

induSENSOR // Linear inductive displacement sensors
InduSENSOR EDS long-stroke sensors are designed for industrial use in hydraulic and pneumatic cylinders for displacement and position measurements of pistons or valves, e.g., to measure:

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

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

An aluminum tube is used as target, which is guided over the sensor rod in a non-contact and wear-free manner.

Due to their robust, constructional design, the EDS long-stroke sensors have proven invaluable for integration into hydraulic and pneumatic cylinders and for position monitoring in harsh industrial environments. Due to the eddy current principle applied, no permanent magnets need to be mounted inside the cylinder.

InduSENSOR EDS sensors impress with an optimal ratio of compact design and large measuring range. Due to their small offset, the measuring range starts very close to the flange.
<table>
<thead>
<tr>
<th>Model</th>
<th>EDS-75</th>
<th>EDS-100</th>
<th>EDS-160</th>
<th>EDS-200</th>
<th>EDS-250</th>
<th>EDS-300</th>
<th>EDS-400</th>
<th>EDS-500</th>
<th>EDS-630</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>S</td>
<td>S, F</td>
<td>S, F</td>
<td>S</td>
<td>S, F</td>
<td>S, F</td>
<td>S</td>
<td>S, F</td>
<td>S, F</td>
</tr>
<tr>
<td>Measuring range</td>
<td>75 mm</td>
<td>100 mm</td>
<td>160 mm</td>
<td>200 mm</td>
<td>250 mm</td>
<td>300 mm</td>
<td>400 mm</td>
<td>500 mm</td>
<td>630 mm</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.038 mm</td>
<td>0.05 mm</td>
<td>0.08 mm</td>
<td>0.1 mm</td>
<td>0.125 mm</td>
<td>0.15 mm</td>
<td>0.2 mm</td>
<td>0.25 mm</td>
<td>0.315 mm</td>
</tr>
<tr>
<td>Frequency response (-3dB)</td>
<td>150 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measuring rate</td>
<td>600 Sa/s</td>
<td>500 Sa/s</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Linearity</td>
<td>$\leq 0.3%$ FSO</td>
<td>$\leq 0.23%$</td>
<td>$\leq 0.3%$</td>
<td>$\leq 0.48%$</td>
<td>$\leq 0.6%$</td>
<td>$\leq 0.75%$</td>
<td>$\leq 0.9%$</td>
<td>$\leq 1.2%$</td>
<td>$\leq 1.5%$</td>
</tr>
<tr>
<td>Temperature stability</td>
<td>$\leq 200$ ppm FSO/K</td>
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<tr>
<td>Supply voltage</td>
<td>18 … 30 VDC</td>
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<tr>
<td>Max. current consumption</td>
<td>40 mA</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Analog output</td>
<td>S Series - 7-pin M9 screw/plug connection (Binder); axial, radial on request (see accessories for connection cable)</td>
<td>F series - Bayonet 5-pin screw/plug connection; radial output (see accessories for connection cable)</td>
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<tr>
<td>Temperature range</td>
<td>-40 … +100 °C</td>
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<td></td>
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<tr>
<td>Pressure resistance</td>
<td>450 bar (front)</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shock (DIN EN 60068-2-27)</td>
<td>40 g / 6 ms in 3 axes, 1000 shocks each</td>
<td>100 g / 6 ms radial, 3 shocks each</td>
<td>300 g / 6 ms axial, 3 shocks each</td>
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</tr>
<tr>
<td>Vibration (DIN EN 60068-2-6)</td>
<td>$\pm 2.5$ mm / $5$ … $44$ Hz, 10 cycles each</td>
<td>$\pm 23$ g / $44$ … $500$ Hz, 10 cycles each</td>
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<tr>
<td>Protection class (DIN EN 60529)</td>
<td>IP65 (F series) / IP67 (S series)</td>
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<tr>
<td>Material</td>
<td>Stainless steel (housing); aluminum (measuring tube)</td>
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</tbody>
</table>

**Article designation**

<table>
<thead>
<tr>
<th>EDS-300- S- SA7-</th>
<th>Measuring ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sensor rod</td>
</tr>
<tr>
<td></td>
<td>L</td>
</tr>
<tr>
<td>75</td>
<td>110</td>
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<tr>
<td>100</td>
<td>140</td>
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<tr>
<td>160</td>
<td>200</td>
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<td>200</td>
<td>240</td>
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<td>250</td>
<td>290</td>
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<td>300</td>
<td>340</td>
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<td>400</td>
<td>450</td>
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<tr>
<td>500</td>
<td>550</td>
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<tr>
<td>630</td>
<td>680</td>
</tr>
</tbody>
</table>

**Model S**

- Measuring range: 75 mm to 630 mm
- Connection: 7-pin M9 screw/plug connection (Binder); axial, radial on request (see accessories for connection cable)
- Temperature range: Storage -40 … +100 °C, Operation -40 … +85 °C
- Pressure resistance: 450 bar (front)
- Shock: 40 g / 6 ms in 3 axes, 1000 shocks each
- Vibration: $\pm 2.5$ mm / $5$ … $44$ Hz, 10 cycles each
- Protection class: IP65 (F series) / IP67 (S series)
- Material: Stainless steel (housing); aluminum (measuring tube)

**Model F**

- Measuring range: 75 mm to 630 mm
- Connection: Bayonet 5-pin screw/plug connection; radial output (see accessories for connection cable)
- Temperature range: Storage -40 … +100 °C, Operation -40 … +85 °C
- Pressure resistance: 450 bar (front)
- Shock: 40 g / 6 ms in 3 axes, 1000 shocks each
- Vibration: $\pm 2.5$ mm / $5$ … $44$ Hz, 10 cycles each
- Protection class: IP65 (F series) / IP67 (S series)
- Material: Stainless steel (housing); aluminum (measuring tube)

**Article designation**

**EDS-300- S- SA7-**

- Current output
- **SR** = connector, radial bayonet (F series)
- **SA7** = connector, axial (S series)
- **Series:** S = compact design with housing cap
- F = flange housing with bore holes

**Measuring range in mm**
Mounting options and accessories

**Accessories for S series**

**Connection cables**
- C703-5: EDS connection cable for S series, 7-pin, length 5 m
- C703-5/U: EDS connection cable for S series, 7-pin, length 5 m, for voltage output 1 - 5 V
- C703/90-5: EDS connection cable for S series, 7-pin, length 5 m with 90° angled cable connector

**Mating plug, S series**

**Spare tubes**
- Measuring tube for EDS-75-S: Spare tube
- Measuring tube for EDS-100-S: Spare tube
- Measuring tube for EDS-160-S: Spare tube
- Measuring tube for EDS-200-S: Spare tube
- Measuring tube for EDS-250-S: Spare tube
- Measuring tube for EDS-300-S: Spare tube
- Measuring tube for EDS-400-F: Spare tube
- Measuring tube for EDS-630-F: Spare tube

**Installation ring**
- 0483326: EDS mounting ring

**Accessories for the F series**

**Connection cables**
- C705-5: EDS connection cable for F series, 5-pin, length 5 m
- C705-15: EDS connection cable for F series, 5-pin, length 15 m

**EDS connector kit, F series**

**Spare tubes**
- Measuring tube for EDS-100-F: Spare tube
- Measuring tube for EDS-160-F: Spare tube
- Measuring tube for EDS-200-F: Spare tube
- Measuring tube for EDS-250-F: Spare tube
- Measuring tube for EDS-300-F: Spare tube
- Measuring tube for EDS-400-F: Spare tube
- Measuring tube for EDS-630-F: Spare tube
EDS-S: Lift height measurement in pneumatic cylinders; flange outside the cylinder

EDS-Z: Integration in hydraulic cylinders; integrated flange and M12 built-in plug

EDS-F: Measuring the grinding gap in crushers

EDS-Z: Integration in hydraulic cylinders; integrated flange and M12 built-in plug
Sensors and Systems from Micro-Epsilon

Sensors and systems for displacement, distance and position

Sensors and measurement devices for non-contact temperature measurement

Measuring and inspection systems for metal strips, plastics and rubber

Optical micrometers and fiber optics, measuring and test amplifiers

Color recognition sensors, LED analyzers and inline color spectrometers

3D measurement technology for dimensional testing and surface inspection