Cylinder Position Sensors
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What is a magneto-resistive sensor?

Turck cylinder position sensors are used for the detection of magnet equipped pistons on pneumatic cylinders through a nonmagnetic wall. A patented, state of the art electronic magnetic circuit is the basis of operation for these sensors. The sensors are manufactured using a polypropylene over-molding technology, which allows the product to be completely sealed into small sizes without compromising durability. The small size also allows for very low profiles that reduce the chance of damage when mounted to the outside of the cylinder.

Turck has taken the approach of using two sensor styles, along with various adapter brackets, to fit individual cylinders for the majority of applications. The “UNT” and “UNR” housings were designed to fit into specific grooves found in extruded profile type cylinders, as well as standalone devices without the need for any additional brackets. The UNT style was made to fit into a standard “T” groove and the UNR was made for the “C” groove, neither requiring additional hardware for standard mounting. Both of these designs allow the sensor to be dropped in from above anywhere along the span of the cylinder.

Where can I use a magneto-resistive sensor?

- Material handling
- Automated assembly
- Stamping
- Conveying
- Sorting
- Product positioning
- Industrial robots

Why Choose Turck magneto-resistive sensors?

**Reliable mounting**
The sensor is mounted in the cylinder's groove and tightened with a screw. Located near the cable outlet, the screw helps make sure the sensor doesn't move during vibration or if the cable is pulled.

**Secure installation**
A wing screw made of tool steel requires only a quarter-turn to tighten securely.

**Compact housing style**
UNT models measure only 28 mm, while UNR models measure only 18 mm, making them the most compact sensors available on the market. Since the active sensing face is located at the end of the sensor, the piston can be detected up to the end, even on compact short stroke cylinders.

**Visible LED**
A bright LED indicates the current switching status, and is visible from any position.

**Standards**
Magneto-resistive technology enables the sensor to detect the exact position of the magnet, while avoiding multiple switching points. It also exceeds IEC standards EN60947-5-2 and EN61000-4-6, making it immune to high levels of EMC.

**Optional accessories**
A large range of accessories, such as clips for cable routing, are available for mounting, adjustment and installation.
### Technical Specifications:

- **Ambient Temperature:** -25° to +70 °C (-13° to 158 °F)
- **Operating Voltage:** 10-30 VDC
- **Ripple Vpp:** ≤ 10% Uss
- **No-load Current Io:** ≤ 15 mA
- **Off-state Current:** ≤ 0.1 mA
- **Switching Frequency:**
  - UNT: ≤ 1 kHz
  - UNR: ≤ 0.3 kHz
- **Rated Operating Current:**
  - UNT: DC ≤ 150 mA
  - UNR: DC ≤ 100 mA
- **Output Function:** 3-wire, N.O., PNP/NPN
- **Short-circuit Protection:** Yes / Cyclic
- **Voltage Drop Ie:** ≤ 1.8 V

- **Vibration Resistance:** 55 Hz (1mm)
- **Shock Resistance:** 30 g (11 ms)
- **Degree of Protection:** IP67
- **Overtravel Speed:**
  - UNT: 10 m/s
  - UNR: 3 m/s
- **Wire-break/Reverse Polarity Protection:** Yes

### Note:

- **PTFE Tubing:** Add S1144 to part number
- **weldguard® & PTFE:** Add S1154 to part number
- **weldguard® Protection:** Add S1589 to part number
### Mounting Accessories

#### KLRC-UNT*

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Cylinder Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>KLRC-UNT1</td>
<td>.315–0.984 in [8-25 mm]</td>
</tr>
<tr>
<td>KLRC-UNT2</td>
<td>.984–2.480 in [25-63 mm]</td>
</tr>
<tr>
<td>KLRC-UNT3</td>
<td>2.480–5.118 in [63-130 mm]</td>
</tr>
</tbody>
</table>

#### KLZ*M-UNT

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Tie Rod Diameter ‘A’</th>
</tr>
</thead>
<tbody>
<tr>
<td>KLZ1M-UNT</td>
<td>.295 in [7.5 mm]</td>
</tr>
<tr>
<td>KLZ2M-UNT</td>
<td>.350 in [8.9 mm]</td>
</tr>
<tr>
<td>KLZ3M-UNT</td>
<td>.480 in [12.2 mm]</td>
</tr>
</tbody>
</table>

#### KLDT-UNT*

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Groove Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>KLDT-UNT2</td>
<td>.276 in [7.0 mm]</td>
</tr>
<tr>
<td>KLDT-UNT3</td>
<td>.370 in [9.4 mm]</td>
</tr>
<tr>
<td>KLDT-UNT4</td>
<td>.453 in [11.5 mm]</td>
</tr>
<tr>
<td>KLDT-UNT5</td>
<td>.496 in [12.6 mm]</td>
</tr>
</tbody>
</table>

* To be used with ASB strap on round cylinders

#### ASB-* STRAP

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Cylinder Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASB-1 STRAP</td>
<td>.276-.433 in [7-11 mm]</td>
</tr>
<tr>
<td>ASB-2 STRAP</td>
<td>.433-.748 in [11-19 mm]</td>
</tr>
<tr>
<td>ASB-3 STRAP</td>
<td>.709-1.142 in [18-29 mm]</td>
</tr>
<tr>
<td>ASB-4 STRAP</td>
<td>1.102-1.535 in [28-39 mm]</td>
</tr>
<tr>
<td>ASB-5 STRAP</td>
<td>1.496-1.929 in [38-49 mm]</td>
</tr>
<tr>
<td>ASB-6 STRAP</td>
<td>1.890-2.323 in [48-59 mm]</td>
</tr>
<tr>
<td>ASB-7 STRAP</td>
<td>2.283-2.717 in [58-69 mm]</td>
</tr>
<tr>
<td>ASB-8 STRAP</td>
<td>2.677-3.110 in [68-79 mm]</td>
</tr>
<tr>
<td>ASB-9 STRAP</td>
<td>3.071-3.504 in [78-89 mm]</td>
</tr>
</tbody>
</table>

#### SG-UNT

#### KLTR-2UNR

#### KLT-UNT1

#### KLR-2UNR

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28 subsidiaries and over 60 representations worldwide!

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