Non-contacting inductive technology to eliminate wear
- Travel set to customer’s requirement
- Compact 19 mm diameter body,
- High accuracy and stability
- Sealing to IP67

As a leading designer and manufacturer of linear, rotary, tilt and intrinsically safe position sensors, Positek® has the expertise to supply a sensor to suit a wide variety of applications.

Our P117 LIPS® (Linear Inductive Position Sensor) is an affordable, durable, high-accuracy position sensor designed for industrial and scientific feedback applications.

It is particularly suitable for OEMs seeking good sensor performance for arduous applications such as industrial machinery where cost is important.

Overall performance, repeatability and stability are outstanding over a wide temperature range. The unit is very compact and space-efficient with a small 19mm diameter body. The sensor is very robust, the body and push rod being made of stainless steel. The sensor is easy to install with mounting options including M5 male stud and M5 rod eye bearing. The push rod can be supplied free or captive, with male M5 thread or M5 rod eye. Like all Positek® sensors, the P117 provides a linear output proportional to travel. Each unit is supplied with the output calibrated to the travel required by the customer, from 5 to 350mm and with full EMC protection built in. The P117 offers a range of mechanical and electrical options, environmental sealing is IP67.

Do you need a position sensor made to order to suit a particular installation requirement or specification? We’ll be happy to modify any of our designs to suit your needs - please contact us with your requirements.

SPECIFICATION

**Dimensions**
- Body diameter: 19 mm
- Body Length: calibred travel + 109.7 mm
- (Axial version) calibred travel + 115 mm - cable
- (Radial version) calibred travel + 118.5 mm - connector

**Independent Linearity**
- ≤ ± 0.25% FSO @ 20°C
- ≤ ± 0.1% FSO @ 20°C* available upon request.

*Sensors with calibred travel of 10 mm and above.

**Temperature Coefficients**
- < ± 0.01%/°C Gain &
- < ± 0.01%/°C Offset

**Frequency Response**
- > 10 kHz (-3dB)

**Resolution**
- Infinite

**Noise**
- < 0.02% FSO

**Environmental Temperature Limits**
- Operating: -40°C to +125°C standard
- -20°C to +85°C buffered
- -40°C to +125°C
- Storage: IP67

**Sealing**
- IP67

**EMC Performance**
- EN 61000-6-2, EN 61000-6-3
- EN 61000-6-2
- EN 61000-6-3
- IEC 68-2-29: 40 g

**MTBF**
- 350,000 hrs 40°C Gf

**Drawing List**
- P117-11

Drawings, in AutoCAD® dwg or dxf format, available on request.
**How Positek’s PIPS® technology eliminates wear for longer life**

Positek’s PIPS® technology (Positek Inductive Position Sensor) is a major advance in displacement sensor design. PIPS®-based displacement transducers have the simplicity of a potentiometer with the life of an LVDT/RVDT.

PIPS® technology combines the best in fundamental inductive principles with advanced micro-electronic integrated circuit technology. A PIPS® sensor, based on simple inductive coils using Positek’s ASIC control technology, directly measures absolute position giving a DC analogue output signal. Because there is no contact between moving electrical components, reliability is high and wear is eliminated for an exceptionally long life.

PIPS® overcomes the drawbacks of LVDT technology – bulky coils, poor length-to-stroke ratio and the need for special magnetic materials. It requires no separate signal conditioning.

Our LIPS® range are linear sensors, while RIPS® are rotary units and TIPS® are for detecting tilt position. Ask us for a full technical explanation of PIPS® technology.

We also offer a range of ATEX-qualified intrinsically-safe sensors.

---

**TABLE OF OPTIONS**

**CALIBRATED TRAVEL:** Factory set to any length from 0-5mm to 0-350mm (e.g. 76mm).

**ELECTRICAL INTERFACE OPTIONS**

<table>
<thead>
<tr>
<th>OUTPUT SIGNAL</th>
<th>SUPPLY INPUT</th>
<th>OUTPUT LOAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.5-4.5V dc</td>
<td>+5V dc nom.</td>
<td>± 0.5V.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buffered:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.5-4.5V dc</td>
<td>+24V dc nom.</td>
<td>+ 9-28V.</td>
</tr>
<tr>
<td>0.5-9.5V dc</td>
<td>+24V dc nom.</td>
<td>+ 13-28V.</td>
</tr>
<tr>
<td>Supply Current</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10mA typical, 20mA maximum.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CONNECTOR/CABLE OPTIONS**

- Connector - Hirschmann ELWIK A 41 02 Axial or Radial, IP67
- Cable with Pg 9 gland Axial, IP67
- Cable with boot. Radial, IP67
- Cable length >50 cm – please specify length in cm

**MOUNTING OPTIONS**

- M5 rod eye bearing or M5x0.8 male thread (radial versions), Body Tube Clamp/s (axial or radial versions).

**PUSH ROD OPTIONS** – standard retained with M5x0.8 male thread, M5 rod eye bearing or Free.
<table>
<thead>
<tr>
<th>Issue Change Author Date</th>
<th>RAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>D ACS Logo replaces Lloyds</td>
<td>RDS 11/12/12 RAN397</td>
</tr>
<tr>
<td>E Body Clamp option added.</td>
<td>PDM 25/07/14 RAN505</td>
</tr>
<tr>
<td>F Range changed 5-350 was 10-300.</td>
<td>RDS 23/11/15 RAN1056</td>
</tr>
<tr>
<td>G Independent linearity option added.</td>
<td>PDM 23/01/17 RAN1139</td>
</tr>
<tr>
<td>H Measurement range wording amended</td>
<td>AKS 18/10/17 RAN1200</td>
</tr>
</tbody>
</table>