- Non-contacting inductive technology to eliminate wear
- Travel set to customer’s requirement
- Compact and self-contained
- High durability and reliability
- High accuracy and stability
- Sealing to IP65/IP67 as required

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 P101 LIPS® (Linear Inductive Position Sensor) is an affordable, durable, high-accuracy position sensor designed for industrial and scientific feedback applications. The unit is highly compact and space-efficient, being responsive along almost its entire length.

The P101, like all Positek® sensors, provides a linear output proportional to travel. Each unit is supplied with the output calibrated to the travel required by the customer, any stroke from 0-5mm to 0-800mm and with full EMC protection built in. The sensor is very robust, the body and push rod being made of stainless steel for long service life and environmental resistance. 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 sensor is easy to install with mounting options including M5 rod eye bearings and body clamps. The push rod can be supplied free or captive, with female M5 thread, an M5 rod eye, or dome end. Captive push rods can be sprung loaded, in either direction, on sensors up to 250mm of travel. The P101 also offers a wide range of mechanical and electrical options, environmental sealing is to IP65 or IP67, depending on selected cable or connector options.

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: 35 mm
- Body length (Axial version): calibrated travel + 163 mm
- Body length (Radial version): calibrated travel + 186 mm
- Push rod extension: calibrated travel + 9 mm, OD 9.5 mm

For full mechanical details see drawing P101-11

Independent Linearity
- ≤ ± 0.25% FSO @ 20°C - up to 450 mm
- ≤ ± 0.5% FSO @ 20°C - over 450 mm
- ≤ ± 0.1% FSO @ 20°C* available upon request.

* Sensors with calibrated travel from 10 mm up to 400 mm.

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

Frequency response
- > 10 kHz (-3dB)
- > 300 Hz (-3dB) 2 wire 4 to 20 mA

Resolution
- Infinite

Noise
- < 0.02% FSO

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

Sealing
- IP65/IP67 depending on connector / cable option

EMC Performance
- EN 61000-6-2, EN 61000-6-3

Vibration
- IEC 68-2-6: 10 g

Shock
- IEC 68-2-29: 40 g
- 350,000 hrs 40°C Gf

Drawing List
- P101-11: Sensor Outline

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 0-800mm (e.g. 254mm) |
| ELECTRICAL INTERFACE OPTIONS |

<table>
<thead>
<tr>
<th>OUTPUT SIGNAL</th>
<th>SUPPLY INPUT</th>
<th>OUTPUT LOAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard: 0.5-4.5V dc ratiometric</td>
<td>+5V dc nom. ± 0.5V.</td>
<td>5kΩ min.</td>
</tr>
<tr>
<td>Buffered: 0.5-4.5V dc</td>
<td>+24V dc nom. + 9-28V.</td>
<td>5kΩ min.</td>
</tr>
<tr>
<td>±5V dc</td>
<td>±15V dc nom. ± 9-28V.</td>
<td>5kΩ min.</td>
</tr>
<tr>
<td>0.5-9.5V dc</td>
<td>+24V dc nom. + 13-28V.</td>
<td>5kΩ min.</td>
</tr>
<tr>
<td>±10V dc</td>
<td>±15 V dc nom. ± 13.5-28V.</td>
<td>5kΩ min.</td>
</tr>
<tr>
<td>Supply Current</td>
<td>10mA typical, 20mA maximum.</td>
<td></td>
</tr>
<tr>
<td>4-20mA (2 wire)</td>
<td>+24 V dc nom. + 18-28V.</td>
<td>300Ω @ 24V.</td>
</tr>
<tr>
<td>(3 wire sink)</td>
<td>+24 V dc nom. + 13-28V.</td>
<td>950Ω @ 24V.</td>
</tr>
<tr>
<td>(3 wire source)</td>
<td>+24 V dc nom. + 13-28V.</td>
<td>3000Ω max.</td>
</tr>
</tbody>
</table>

Axial sensors supplied with access to output ‘zero’ and ‘span’ calibration adjustments as standard. No access option available.

CONNECTOR/CABLE OPTIONS

Connector - Hirschmann GD series | Axial, IP65 |
Connector - Hirschmann ELWIK A 4102 Radial, IP67 |
Cable with M12 gland or short gland | Axial, IP67 |
Cable with Pg 9 gland | Radial, IP67 |
Cable length >50 cm – please specify length in cm

MOUNTING OPTIONS

M5 rod eye bearing (radial versions), Body Tube Clamp/s (axial or radial versions).

PUSH ROD OPTIONS – standard retained with M5x0.8 female thread, M5 rod eye bearing, Dome end, Sprung loaded (retraction or extension) or Free.