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 P111 LIPS® (Linear Inductive Position Sensor) is a heavy-duty version of the P101 sensor with a stronger 12.6mm push rod, recommended for applications where vibration is an issue or there is a need for longer travel sensors, mounted horizontally, and supported between rod eyes. It remains 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. Like all Positek® sensors, the P111 provides a linear output proportional to travel. Each sensor 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 M8 rod eye bearings and body clamps. The push rod can be supplied free or captive, with female M8 thread, an M8 rod eye, or dome end. Captive push rods can be sprung loaded, in either direction, on sensors up to 300mm of travel. The P111 also offers a wide range of mechanical and electrical options, environmental sealing is to IP65 or IP67, depending on cable/connector options.

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 + 7 mm, OD 12.6 mm

For full mechanical details see drawing P111-11

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 < ± 0.01%/°C Gain &
< ± 0.01%/°C Offset

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

Resolution Infiniti

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

MTBF 350,000 hrs 40°C Gf

Drawing List P111-11

Sensor Outline

Drawings, in AutoCAD® dwg or dxf format, available on request.

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.
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

<table>
<thead>
<tr>
<th>CALIBRATED TRAVEL:</th>
<th>Factory set to any length from 0-5mm to 0-800mm (e.g. 254mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECTRICAL INTERFACE OPTIONS</td>
<td>SUPPLY INPUT</td>
</tr>
<tr>
<td>OUTPUT SIGNAL</td>
<td>Standard:</td>
</tr>
<tr>
<td></td>
<td>Buffered:</td>
</tr>
<tr>
<td></td>
<td>0.5-9.5V dc</td>
</tr>
<tr>
<td></td>
<td>+10V dc</td>
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<tr>
<td>Supply Current</td>
<td>10mA typical, 20mA maximum.</td>
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<tr>
<td></td>
<td>(3 wire sink)</td>
</tr>
<tr>
<td></td>
<td>(3 wire source)</td>
</tr>
<tr>
<td>CONNECTOR/CABLE OPTIONS</td>
<td>Connector - Hirschmann GD series Axial, IP65</td>
</tr>
<tr>
<td></td>
<td>Connector - Hirschmann ELWIKA 4102 Radial, IP67</td>
</tr>
<tr>
<td></td>
<td>Cable length &gt;50 cm – please specify length in cm</td>
</tr>
<tr>
<td>PUSH ROD OPTIONS – standard retained with M8x1.25 female thread, M8 rod eye bearing, Dome end, Sprung loaded (retraction or extension) or Free.</td>
<td>M8 rod eye bearing ( radial versions), Body Tube Clamp/s (axial or radial versions).</td>
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