LIPS P118
Short stroke contactless slim line linear position sensor

- Non-contacting inductive technology to eliminate wear
- Travel set to customer’s requirement
- Compact 19 mm diameter body
- High durability and reliability
- 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 P118 LIPS® (Linear Inductive Position Sensor) is an affordable, durable, accurate position sensor designed for a wide range of industrial applications. It is particularly suitable for OEMs seeking good sensor performance in situations where a small diameter, short-bodied sensor is needed and cost is important. The unit is compact and space-efficient, being responsive along almost its entire length, and 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, from 2 to 50mm and with full EMC protection built in.

Overall performance, repeatability and stability are outstanding over a wide temperature range.

The sensor has a compact 19 mm diameter stainless steel body, is easy to install and set up. Mounting options include body clamps or a stainless steel mounting flange with two 3.2 mm by 30 degree wide slots on a 25 mm pitch. The stainless steel plunger can be supplied free or captive, with female M4 thread, or spring-loaded with a ball end. The P118 also offers a range of mechanical and electrical options, environmental sealing is to 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: Dependant on calibrated travel & mounting option
- Calibrated Travel:
  - 2 mm to 10 mm: 72.5 mm, 78 mm
  - 11 mm to 20 mm: 82.5 mm, 88 mm
  - 21 mm to 30 mm: 92.5 mm, 98 mm
  - 31 mm to 50 mm: 112.5 mm, 118 mm
- Plunger: Ø 6mm

For full mechanical details see drawing P118-11

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

* Sensors with calibrated travel of 10 mm and above.

Temperature Coefficients
- ≤ 0.01%/°C Gain & Offset
- > 0.01%/°C Offset & Gain
- > 10 kHz (-3dB)

Frequency Response
Infinite

Resolution
Infinite

Noise
< 0.02% FSO

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

Sealing
IP67

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
P118-11 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.

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**TABLE OF OPTIONS**

**CALIBRATED TRAVEL:** Factory set to any length from 0-2mm to 0-50mm (e.g. 36mm).

**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>0.5-4.5V dc</td>
<td>+5V dc nom. + 0.5V. 5kΩ min.</td>
</tr>
<tr>
<td>Buffered:</td>
<td>0.5-4.5V dc</td>
<td>+24V dc nom. + 9-28V. 5kΩ min.</td>
</tr>
<tr>
<td>0.5-9.5V dc</td>
<td>+24V dc nom. + 13-28V. 5kΩ min.</td>
<td></td>
</tr>
<tr>
<td>Supply Current</td>
<td>10mA typical, 20mA maximum.</td>
<td></td>
</tr>
</tbody>
</table>

**CONNECTOR/CABLE OPTIONS**

- Connector - M8 IEC 60947-5-2 IP67
- Cable with M8 gland IP67
- Cable length >50 cm – please specify length in cm

**MOUNTING OPTIONS**
- Flange, Body Tube Clamp.

**PUSH ROD OPTIONS** – standard retained with M4x0.7 female thread
- Sprung loaded (spring supplied loose), Dome end (sprung loaded) or Free.

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**Output Characteristic - Standard**

**Output Characteristic - Reverse option**