

# LIPS<sup>®</sup> P113 SLIM-LINE LINEAR POSITION SENSOR

Position feedback for industrial and scientific applications

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



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

Our P113 LIPS<sup>®</sup> (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 P113 provides a linear output proportional to displacement. Each unit is supplied with the output calibrated to the travel required by the customer, from 10 to 300mm and with full EMC protection built in. The P113 offers a range of mechanical options, environmental sealing is IP67.

## SPECIFICATION

### DIMENSIONS

Body diameter	19 mm
Body length	
(Axial cable version)	measurement length + 134 mm
(Axial connector version)	measurement length + 134 mm
(Radial cable version)	measurement length + 139 mm
(Radial connector version)	measurement length + 142 mm
For full mechanical details see drawing P113-11	
Power Supply	+5V dc nom. $\pm 0.5V$ , 10mA typ 20mA max
Output Signal	0.5-4.5V dc ratiometric, Load: 2k $\Omega$ min.
Independent linearity	< $\pm 0.25\%$ @ 20°C
Temperature coefficients	< $\pm 0.01\%/^{\circ}C$ Gain & < $\pm 0.01\%FS/^{\circ}C$ Offset
Frequency response	> 10 KHz (-3dB)
Resolution	Infinite
Noise	< 0.02% FSO
Environmental Temperature Limits	
Operating	-40 to +125°C
Storage	-40 to +125°C
Sealing	IP67
EMC Performance	EN 61000-6-2, EN 61000-6-3
Vibration	IEC 68-2-6: 10g
Shock	IEC 68-2-29: 40 g
MTBF	350,000 hrs 40°C Gf
Drawing List	
P113-11	Sensor Outline
<i>Drawings, in AutoCAD<sup>®</sup> dwg or dxf format, available on request.</i>	

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.

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## How Positek's PIPS® technology eliminates wear for longer life

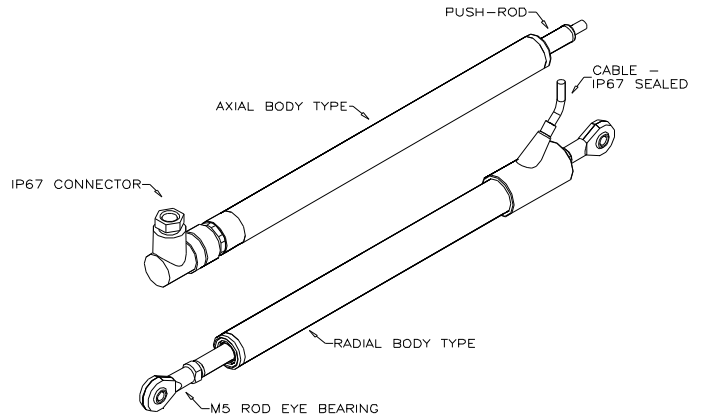
Positek's PIPS® technology (Positek Inductive Position Sensor) is a major advance in displacement sensor design. PIPS®-based displacement transducers have the simplicity of a potentiometer with the life of an LVDT/RVDT.

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

**MEASUREMENT RANGE:** Factory-set to any length from 10 to 300 mm in increments of 1mm.

#### CONNECTOR/CABLE OPTIONS

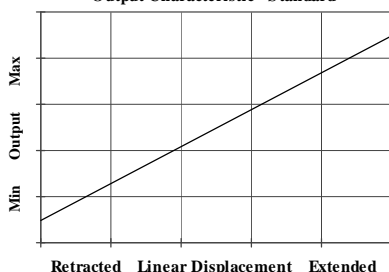
Connector - Hirschmann ELWIK 4102 Axial, IP67  
 Connector - Hirschmann ELWIK 4102 Radial, IP67  
 Cable with PG9 gland Axial, IP67  
 Cable with boot. Radial, IP67  
 Cable length >50cm – please specify length in cm

#### MOUNTING OPTIONS

M5 rod eye bearing or M5x0.8 male thread ( radial versions).

**PUSH ROD OPTIONS** – standard retained with M5x0.8 male thread, M5 rod eye bearing or Free.

Output Characteristic - Standard



Output Characteristic - Reverse option

