

# LIPS<sup>®</sup> P112 GAUGE HEAD POSITION SENSOR

Position feedback for industrial and scientific applications

- Gauge head positioning for industrial and scientific applications
- Non-contacting inductive technology to eliminate wear
- Travel set to customer's requirement
- Compact 19 mm diameter body
- 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 P112 LIPS<sup>®</sup> (Linear Induction Position Sensor) is an affordable, durable high-accuracy sensor for gauge head positioning in industrial and scientific applications. The P112, like all Positek<sup>®</sup> sensors, provides a linear output proportional to travel. Each sensor is supplied with the output calibrated to the travel required by the customer, from 5mm to 50mm and with full EMC protection built in.

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 very robust, the body and plunger being made of stainless steel for long service life and environmental resistance.

The plunger is spring loaded with a domed end. The P112 is easy to install with a long 1/2 inch UNF mounting thread and is supplied with two lock nuts for positioning. Environmental sealing is to IP67.

## SPECIFICATION

<b>Dimensions</b>	
Body diameter	19 mm
Body Length (excluding thread)	
(Axial version)	160.7 mm
(Radial version)	166 mm cable
(Radial version)	169.5 mm connector
Mounting Thread Length	59 mm
<i>For full mechanical details see drawing P112-11</i>	
<b>Spring Force</b>	1.5 - 4.5 N approx.
<b>Independent Linearity</b>	≤ ± 0.25% FSO @ 20°C ≤ ± 0.1% FSO @ 20°C* available upon request.
*Sensors with calibrated travel of 10 mm and above.	
<b>Temperature Coefficients</b>	< ± 0.01%/°C Gain & < ± 0.01%FS/°C Offset
<b>Frequency Response</b>	> 10 kHz (-3dB)
<b>Resolution</b>	Infinite
<b>Noise</b>	< 0.02% FSO
<b>Environmental Temperature Limits</b>	
Operating	-40°C to +125°C standard -20°C to +85°C buffered
Storage	-40°C to +125°C
<b>Sealing</b>	IP67
<b>EMC Performance</b>	EN 61000-6-2, EN 61000-6-3
<b>Vibration</b>	IEC 68-2-6: 10 g
<b>Shock</b>	IEC 68-2-29: 40 g
<b>MTBF</b>	350,000 hrs 40°C Gf
<b>Drawing List</b>	
P112-11	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.

For further information please contact:

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## How Positek's PIPS<sup>®</sup> technology eliminates wear for longer life

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

PIPS<sup>®</sup> technology combines the best in fundamental inductive principles with advanced micro-electronic integrated circuit technology. A PIPS<sup>®</sup> 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<sup>®</sup> 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<sup>®</sup> range are linear sensors, while RIPS<sup>®</sup> are rotary units and TIPS<sup>®</sup> are for detecting tilt position. Ask us for a full technical explanation of PIPS<sup>®</sup> technology.

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

## TABLE OF OPTIONS

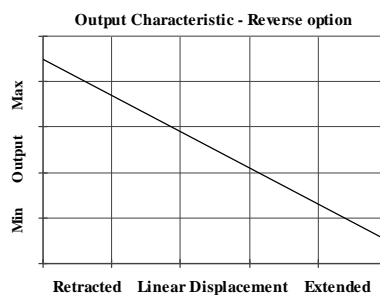
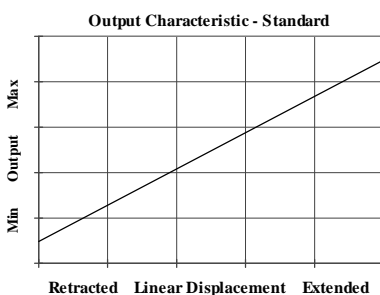
**CALIBRATED TRAVEL:** Factory-set to any length from 5 to 50 mm in increments of 1 mm.

### ELECTRICAL INTERFACE OPTIONS

OUTPUT SIGNAL	SUPPLY INPUT	OUTPUT LOAD
Standard:		
0.5-4.5V dc ratiometric	+5V dc nom. ± 0.5V.	5kΩ min.
Buffered:		
0.5-4.5V dc	+24V dc nom. + 9-28V.	5kΩ min.
0.5-9.5V dc	+24V dc nom. + 13-28V.	5kΩ min.
Supply Current	10mA typical, 20mA maximum.	

### CONNECTOR/CABLE OPTIONS

Connector - Hirschmann ELWIKA 4102 Axial, IP67  
 Connector - Hirschmann ELWIKA 4102 Radial, IP67  
 Cable with Pg 9 gland Axial, IP67  
 Cable with boot. Radial, IP67  
 Cable length >50 cm – please specify length in cm



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