

## Position feedback for industrial and scientific applications

- 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 displacement. Each unit is supplied with the output calibrated to the travel required by the customer, from 50 to 600mm 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.

## SPECIFICATION

### DIMENSIONS

Body diameter	35 mm
Body length (Axial version)	measurement length + 163 mm
Body length (Radial version)	measurement length + 186 mm
Push rod extension	measurement length + 9mm, OD 9.45mm

*For full mechanical details see drawing P101-11*

<b>Independent linearity</b>	< ± 0.25% up to 450mm @ 20°C < ± 0.5% over 450mm @ 20°C
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<b>Temperature coefficients</b>	< ± 0.01%/°C Gain & < ± 0.01%FS/°C Offset
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<b>Frequency response</b>	> 10 kHz (-3dB) > 300 Hz (-3dB) 2 wire 4 to 20 mA
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<b>Resolution</b>	Infinite
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<b>Noise</b>	< 0.02% FSO
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### Environmental Temperature Limits

<b>Operating</b>	-40 to +125°C standard -20 to +85°C buffered
<b>Storage</b>	-40 to +125°C

<b>Sealing</b>	IP65/IP67 depending on connector / cable option
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<b>EMC Performance</b>	EN 61000-6-2, EN 61000-6-3
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<b>Vibration</b>	IEC 68-2-6: 10g
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<b>Shock</b>	IEC 68-2-29: 40 g
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<b>MTBF</b>	350,000 hrs 40°C Gf
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### Drawing List

P101-11	Sensor Outline
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*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.**



For pricing or any further information, please contact Omni Instruments Ltd.

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## Position feedback for industrial and scientific applications

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

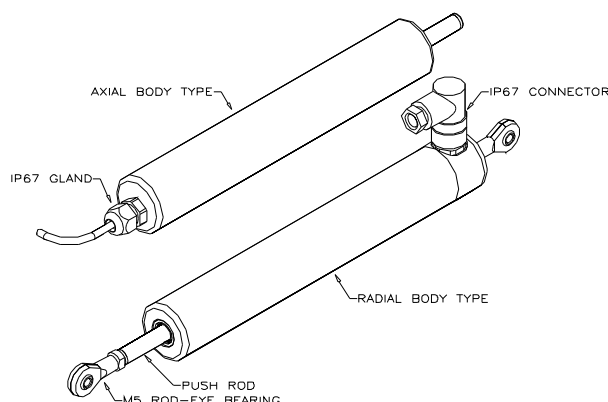
Positek's PIPS® technology (Positek Inductive Position Sensor) is a major advance in displacement sensor design. PIPS®-based displacement transducers have the simplicity of a potentiometer with the life of an LVDT/RVDT.

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 50 to 600 mm in increments of 1mm.

#### ELECTRICAL INTERFACE OPTIONS

OUTPUT SIGNAL	SUPPLY INPUT	OUTPUT LOAD
Standard:		
0.5-4.5V dc ratiometric	+5V dc nom. $\pm$ 0.5V.	5k $\Omega$ min.
Buffered:		
0.5-4.5V dc	+24V dc nom. + 9-28V.	5k $\Omega$ min.
$\pm$ 5V dc	$\pm$ 15V dc nom. $\pm$ 9-28V.	5k $\Omega$ min.
0.5-9.5V dc	+24V dc nom. + 13-28V.	5k $\Omega$ min.
$\pm$ 10V dc	$\pm$ 15 V dc nom. $\pm$ 13.5-28V.	5k $\Omega$ min.
Supply Current	10mA typical, 20mA maximum.	
4-20mA (2 wire)	+24 V dc nom. + 18-28V.	300 $\Omega$ @ 24V.
(3 wire sink)	+24 V dc nom. + 13-28V.	950 $\Omega$ @ 24V.
(3 wire source)	+24 V dc nom. + 13-28V.	300 $\Omega$ max.

Option for output 'zero' and 'span' adjustment available (axial version).

#### CONNECTOR/CABLE OPTIONS

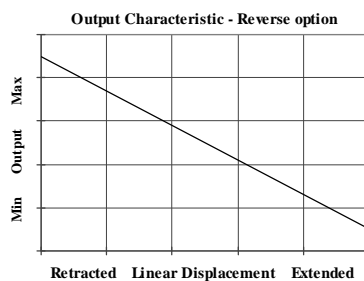
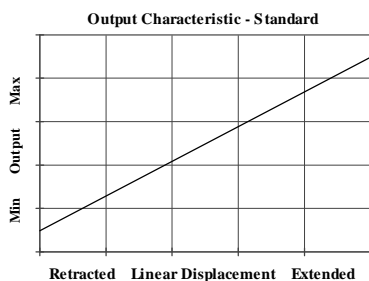
Connector - Hirschmann GD series	Axial, IP65
Connector - Hirschmann ELWIK 4102	Radial, IP67
Cable with M12 gland or short gland	Axial, IP67
Cable with PG9 gland	Radial, IP67

Cable length >50cm – 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.



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