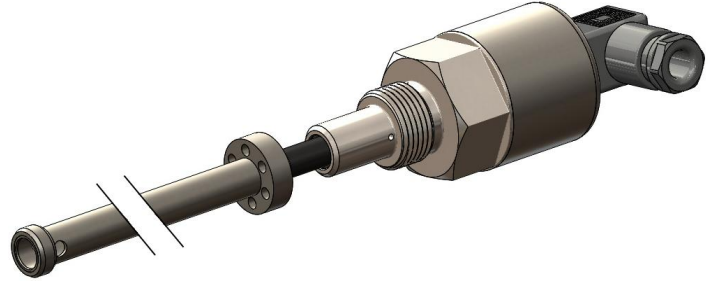


# LIPS<sup>®</sup> P130 LONG STROKE IN-CYLINDER LINEAR POSITION SENSOR

High-resolution position feedback for hydraulic and pneumatic cylinders

- 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<sup>®</sup> has the expertise to supply a sensor to suit a wide variety of applications.

Our P130 LIPS<sup>®</sup> (Linear Inductive Position Sensor) is an affordable, durable, high-accuracy position sensor designed for demanding hydraulic or pneumatic cylinder position feedback applications where service life, environmental resistance and cost are important. It is particularly suitable for OEMs seeking good sensor performance for arduous applications such as industrial machinery.

Overall performance, repeatability and stability are outstanding over a wide temperature range. The unit is highly compact and space-efficient, being responsive along almost its entire length. Like all Positek<sup>®</sup> sensors it provides a linear output proportional to travel. Each unit is supplied with the output calibrated to the travel required by the customer, any stroke from 0-400mm to 0-1485mm and with full EMC protection built in.

The sensor is very rugged, being made of stainless steel with an inert fluoropolymer-sheathed probe with the option of either an aluminium or stainless steel target tube. The sensor is easy to install in cylinders and has a wide range of mechanical and electrical options. Environmental sealing is to IP65 or IP67 depending on selected cable or connector options.

## SPECIFICATION

<b>Dimensions</b>	
Body diameter	35 mm
Body Length (to seal face)	43 mm standard, 48 mm buffered
Probe Length (from seal face)	calibrated travel + 58 mm
Target Tube Length	calibrated travel + 30 mm
<i>For full mechanical details see drawing P130-11</i>	
<b>Independent Linearity</b>	
	≤ ± 0.25% FSO @ 20°C - up to 1000 mm
	≤ ± 0.5% FSO @ 20°C - over 1000 mm
<b>Temperature Coefficients</b>	
	< ± 0.01%/°C Gain &
	< ± 0.01%FS/°C Offset
<b>Frequency Response</b>	
	> 10 kHz (-3dB)
	> 300 Hz (-3dB) 2 wire 4 to 20 mA
<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>	
	IP65/IP67 depending on connector / cable option
<b>Hydraulic Pressure</b>	
	350Bar
<b>EMC Performance</b>	
	EN 61000-6-2, EN 61000-6-3
<b>Vibration (Electronics)</b>	
	IEC 68-2-6: 10 g
<b>Shock (Electronics)</b>	
	IEC 68-2-29: 40 g
<b>MTBF</b>	
	350,000 hrs 40°C Gf

### Drawing List

P130-11	Sensor Outline & Typical Target Installation details
P100-15	Mounting Thread details

*Drawings, in AutoCAD<sup>®</sup> 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.

# LIPS<sup>®</sup> P130 LONG STROKE IN-CYLINDER LINEAR POSITION SENSOR

High-resolution position feedback for hydraulic and pneumatic cylinders

## 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 0-400mm to 0-1485mm (e.g. 508mm)

### 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.
±5V dc	±15V dc nom. ± 9-28V.	5kΩ min.
0.5-9.5V dc	+24V dc nom. + 13-28V.	5kΩ min.
±10V dc	±15 V dc nom. ± 13.5-28V.	5kΩ min.

Supply Current		
4-20mA (2 wire)	+24 V dc nom. + 18-28V.	300Ω @ 24V.
(3 wire sink)	+24 V dc nom. + 13-28V.	950Ω @ 24V.
(3 wire source)	+24 V dc nom. + 13-28V.	300Ω max.

Sensors supplied with access to output 'zero' and 'span' calibration adjustments as standard. No access option available.

### CONNECTOR/CABLE OPTIONS

Connector - Hirschmann GD series	IP65
Cable with M12 gland or short gland	IP67
Cable length >50 cm – please specify length in cm	

### MOUNTING THREAD OPTIONS

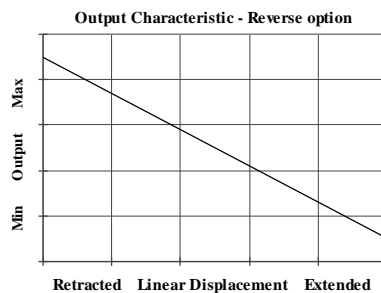
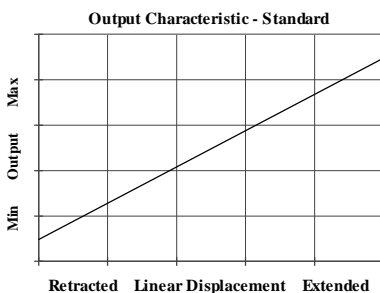
M18, M20, ¾ UNF	30 mm hex A/F, Ø 30 mm seal face.
Supplied with O-ring seal.	

### TARGET TUBE

Stainless Steel (316)	OD: 9.45 mm install in 12.7 mm bore.
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### FLANGE OPTIONS

'Circlip Fit' style
'Screw Fit' style



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