

LIPS® P116 INTERNALLY MOUNTED CYLINDER SENSOR

High-resolution position feedback for hydraulic and pneumatic cylinders

- **Non-contacting inductive technology to eliminate wear**
- **Fully integrated electronics**
- **Travel set to customer's requirement**
- **Compact and easy to install**
- **High durability and reliability**
- **High accuracy and stability**
- **Sealing to IP67**
- **Frequency response of 10kHz**
- **Can be modified and supplied as drop in replacements for competitor products**

The P116 linear sensor is designed to be fitted inside hydraulic or pneumatic cylinders allowing the external cylinder design to be unaffected.

It is an extremely durable, high-accuracy device providing position feedback for applications where service life, environmental resistance and cost are important.

It is particularly suitable for OEMs where very competitive volume pricing and unmatched overall performance make it a very attractive option. The sensor has fully integrated electronics with a variety of voltage and current outputs so no need for any external signal conditioning.

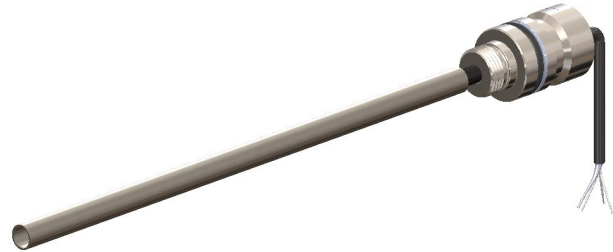
Overall performance, repeatability and stability are outstanding over a wide temperature range.

The sensor is compact and responsive along almost its entire probe length. Like all Positek® sensors each unit is supplied with the output calibrated to the exact travel required by the customer, which can be anything from 5mm up to a maximum of 600mm. It also has full EMC protection built in.

The P116 is stainless steel with an inert fluoropolymer-sheathed probe with a stainless steel target tube. Sealing is to IP67

The sensor is easy to install within cylinders and has a range of mechanical and electrical options.

The P116 can also be modified to match other products that are currently on the market or where the cylinder has already been machined to a specific size. they have major advantages over LVDT's, such as compact stroke to length ratio, 10kHz frequency response. In addition they have no electrically wearing parts so don't suffer the problems associated with potentiometer based devices. . Since there are no external electronics, it offers protection against accidental damage which can cause machinery downtime and increased costs.



SPECIFICATION

Dimensions

Body Diameter:	Ø27 mm
Body Length:	41.5 mm
Probe Length:	calibrated travel + 28 mm (nom.)
Target Tube Length	calibrated travel + 30 mm

For full mechanical details see drawings P116-11

Independent Linearity ≤ ± 0.25% FSO @ 20°C - up to 600 mm

Temperature Coefficients < ± 0.01%/°C Gain &

< ± 0.01%FS/°C Offset

Frequency Response > 10 kHz (-3dB)

Resolution Infinite

Noise < 0.02% FSO

Environmental Temperature Limits

Operating -40°C to +125°C standard

-20°C to +85°C buffered

Storage -40°C to +125°C

Sealing IP67

Hydraulic Pressure 350Bar

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

P116-11 Sensor Outline

TG24-11 Optional Target Tube Flange details
Drawings; in AutoCAD® dwg or dxf format or 3D .stp are 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.

TABLE OF OPTIONS

CALIBRATED TRAVEL: Manufactured mechanically and electrically for any measurement length from 5mm up to 600 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.
4-20mA	+24V dc nom. + 13-28V.	300R Max.
Supply Current	10mA typical, 20mA max. plus O/P current	

CONNECTION

Cable length: Supplied with 50 cm – please specify length required in cm.

TARGET TUBE OPTIONS

Stainless Steel (316) ID 7.7mm, OD 9.5mm (nom.)
Aluminium (6063) ID 7.1mm, OD 9.5mm (nom.)

FLANGE OPTIONS

Penny & Giles HLP100, Temposonics (M4 fixing) and Parker Hannifin cylinders versions available.
see drawing TG24-11

Sensor is supplied with oring and backup ring for sealing

