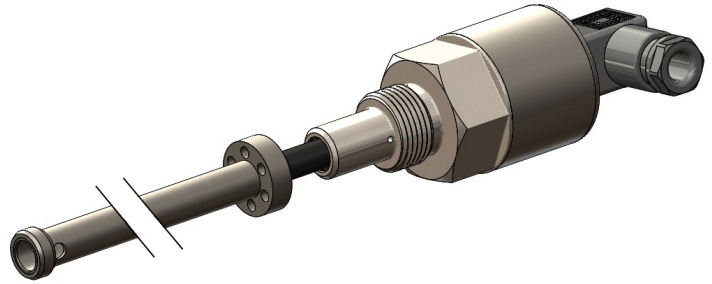




# P130 LONG STROKE IN-CYLINDER LINEAR POSITION SENSOR

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® has the expertise to supply a sensor to suit a wide variety of applications.

Our P130 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® 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

### Dimensions

|                               |                                |
|-------------------------------|--------------------------------|
| 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      |

*For full mechanical details see drawing P130-11*

### Independent Linearity

|  |
|--|
| $\leq \pm 0.25\%$ FSO @ 20°C - up to 1000 mm |
| $\leq \pm 0.5\%$ FSO @ 20°C - over 1000 mm   |

### Temperature Coefficients

|  |
|--|
| $< \pm 0.01\%/^{\circ}\text{C}$ Gain &           |
| $< \pm 0.01\%/\text{FS}/^{\circ}\text{C}$ Offset |

### Frequency Response

|                                     |
|-------------------------------------|
| $> 10$ kHz (-3dB)                   |
| $> 300$ Hz (-3dB) 2 wire 4 to 20 mA |

### 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

IP65/IP67 depending on connector / cable option

### Hydraulic Pressure

350Bar

### EMC Performance

EN 61000-6-2, EN 61000-6-3

### Vibration (Electronics)

IEC 68-2-6: 10 g

### Shock (Electronics)

IEC 68-2-29: 40 g

### MTBF

350,000 hrs 40°C Gf

### Drawing List

P130-11

Sensor Outline &  
Typical Target Installation details

P100-15

Mounting Thread details

*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 further information please contact:*

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

Positek's Inductive technology is a major advance in displacement sensor design. Our displacement transducers have the simplicity of a potentiometer with the life of an LVDT/RVDT.

Our technology combines the best in fundamental inductive principles with advanced micro-electronic integrated circuit technology. A Positek 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.

Our technology 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.

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:<br>0.5-4.5V dc ratiometric | +5V dc nom. ± 0.5V.         | 5kΩ min.    |
| Buffered:<br>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                       | 10mA typical, 20mA maximum. |             |
| 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

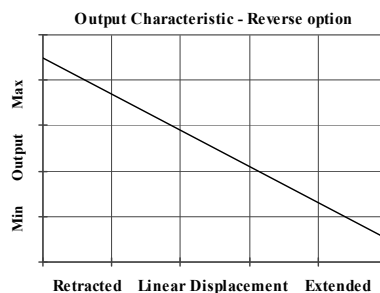
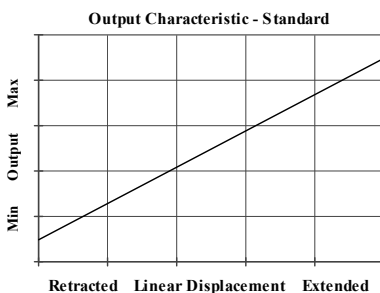
M18, M20, ¾ UNF 30 mm hex A/F, Ø 30 mm seal face.  
 Supplied with O-ring seal.

### TARGET TUBE

Stainless Steel (316) OD: 9.45 mm install in 12.7 min bore.

### FLANGE OPTIONS

'Circlip Fit' style  
 'Screw Fit' style



For further information please contact:

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