



# P138 MID STROKE SLIM-LINE LINEAR POSITION SENSOR

Position feedback for industrial and scientific applications

- **Non-contacting inductive technology to eliminate wear**
- **Travel set to customer's requirement**
- **Compact 19 mm diameter body**
- **High durability and reliability**
- **High accuracy and stability**
- **Sealing to IP67**



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 P138 is an affordable, durable, accurate position sensor designed for a wide range of industrial applications. It is particularly suitable for OEMs seeking good sensor performance in situations where a small diameter, short-bodied sensor is needed and cost is important. The unit is compact and space-efficient, being responsive along almost its entire length, and like all Positek® sensors provides a linear output proportional to travel. Each unit is supplied with the output calibrated to the travel required by the customer, from 51 to 100mm and with full EMC protection built in.

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

The sensor has a compact 19 mm diameter stainless steel body, is easy to install and set up. Mounting options include flange, M5 rod eye bearings and body clamps. The plunger can be supplied free or captive, with a female M4 thread, an M5 rod eye, magnetic tip, or spring-loaded with a dome end. The P138 also offers a range of mechanical options, environmental sealing is to IP67.

## SPECIFICATION

### Dimensions

Body diameter	19 mm	
Body Length:	Dependant on calibrated travel & mounting option	
Calibrated Travel	Standard	Flange mounted
51 mm to 70 mm	132.5 mm	138 mm
71 mm to 100 mm	162.5 mm	168 mm

Plunger Ø 6mm

For full mechanical details see drawing P138-11

### Independent Linearity

≤ ± 0.25% FSO @ 20°C

≤ ± 0.1% FSO @ 20°C available upon request.

< ± 0.01%/°C Gain &

< ± 0.01%FS/°C Offset

> 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

-40°C to +125°C

Storage IP67

### 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

P138-11 Sensor Outline

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:

[www.positek.com](http://www.positek.com) [sales@positek.com](mailto:sales@positek.com)

Tel: +44(0)1242 820027 fax: +44(0)1242 820615

Positek, Andoversford Industrial Estate, Cheltenham GL54 4LB. U.K.

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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 0-51mm to 0-100mm (e.g. 76mm).

### 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.
0.5-9.5V dc	+24V dc nom. + 13-28V.	5k $\Omega$ min.
4-20mA	+24V dc nom. + 13-28V.	300R Max.
Supply Current	10mA typical, 20mA max. plus O/P current	

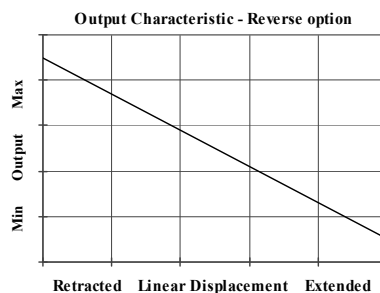
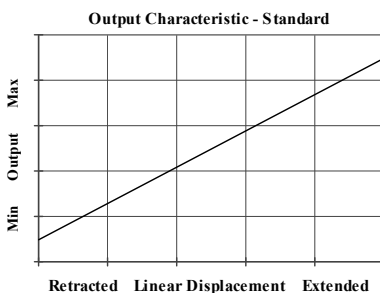
### CONNECTOR/CABLE OPTIONS

Connector - 4-pole M8 IEC 61067-2-104	Axial/ Radial, IP67
Cable <sup>†</sup> with M8 gland	Axial/Radial, IP67
Cable length >50 cm – please specify length in cm	

### MOUNTING OPTIONS

Flange, Body Tube Clamp (axial or radial versions), M5 rod eye bearings (radial versions only).

**PUSH ROD OPTIONS** – Retained<sup>†</sup> or Free with M4x0.7 female thread, M5 rod eye bearing or Magnetic tip, Spring loaded with or without<sup>#</sup> Dome end.  
<sup>†</sup> standard, retained with female thread.  
<sup>#</sup> spring supplied loose.



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