

LIPS[®] 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 LIPS[®] (Linear Inductive Position Sensor) 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 body clamps or a stainless steel mounting flange with two 3.2 mm by 30 degree wide slots on a 25 mm pitch. The stainless steel plunger can be supplied free or captive, with female M4 thread, or spring-loaded with a ball 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.

Temperature Coefficients

< ± 0.01%/°C Gain &
 < ± 0.01%FS/°C Offset
 > 10 kHz (-3dB)

Frequency Response

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

Sealing

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.

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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: 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. ± 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	

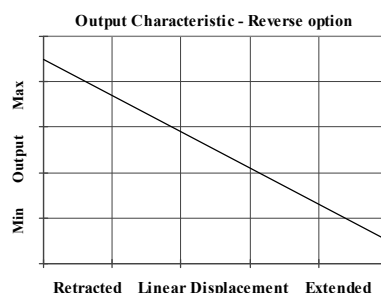
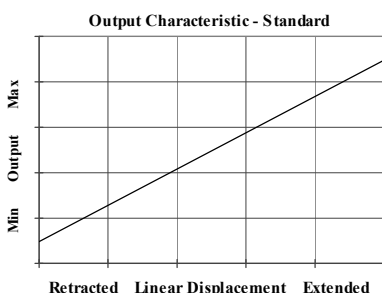
CONNECTOR/CABLE OPTIONS

Connector - M8 IEC 60947-5-2 IP67
 Cable with M8 gland IP67
 Cable length >50 cm – please specify length in cm

MOUNTING OPTIONS

Flange, Body Tube Clamp.

PUSH ROD OPTIONS – standard retained with M4x0.7 female thread
 Sprung loaded (spring supplied loose), Dome end (sprung loaded) or Free.



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