



# P133 MID STROKE LINEAR POSITION SENSOR

Position feedback for industrial and scientific applications

- **Non-contacting inductive technology to eliminate wear**
- **Travel set to customer's requirement**
- **Short body length**
- **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 P133 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 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 rugged stainless steel body and plunger. It 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 P133 also offers 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:	Dependant on calibrated travel & mounting option
Calibrated Travel	Standard Flange mounted
51 mm to 70 mm	125 mm 141.3 mm
71 mm to 100 mm	155 mm 171.3 mm
Plunger	Ø 6mm
For full mechanical details see	drawing P133-11
<b>Power Supply</b>	+5V dc nom. ± 0.5V, 10mA typ 20mA max
<b>Output Signal</b>	0.5-4.5V dc ratiometric, Load: 5kΩ min.
<b>Independent Linearity</b>	≤ ± 0.25% FSO @ 20°C ≤ ± 0.1% FSO @ 20°C available upon request.
<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 -40°C to +125°C
Storage	-40°C to +125°C
<b>Sealing</b>	IP65/IP67 depending on connector / cable option
<b>EMC Performance</b>	EN 61000-6-2, EN 61000-6-3
<b>Vibration</b>	IEC 68-2-6: 10 g
<b>Shock</b>	IEC 68-2-29: 40 g
<b>MTBF</b>	350,000 hrs 40°C Gf
<b>Drawing List</b>	
P133-11	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:

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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.
$\pm$ 5V dc	$\pm$ 15V dc nom. $\pm$ 9-28V.	5k $\Omega$ min.
0.5-9.5V dc	+24V dc nom. + 13-28V.	5k $\Omega$ min.
$\pm$ 10V dc	$\pm$ 15 V dc nom. $\pm$ 13.5-28V.	5k $\Omega$ min.
Supply Current	10mA typical, 20mA maximum.	
4-20mA (2 wire)	+24 V dc nom. + 18-28V.	300 $\Omega$ @ 24V.
(3 wire sink)	+24 V dc nom. + 13-28V.	950 $\Omega$ @ 24V.
(3 wire source)	+24 V dc nom. + 13-28V.	300 $\Omega$ max.

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

### CONNECTOR/CABLE OPTIONS

Connector - 4-pole DIN 43650 C	Axial, IP65
Connector - 4-pole M12 IEC 61076-2-101	Radial, IP67
Cable with M12 gland or short gland	Axial, IP67
Cable with Pg 9 gland	Radial, IP67
Cable length >50 cm – please specify length in cm	

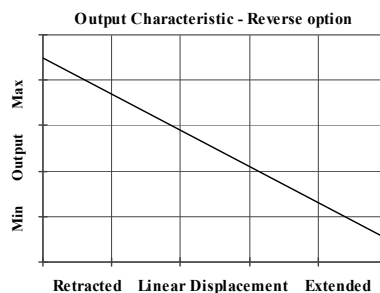
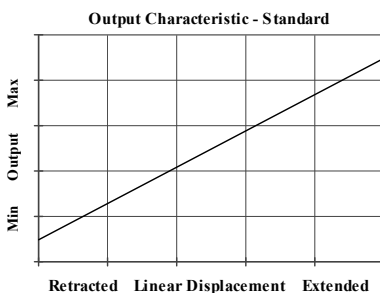
### MOUNTING OPTIONS

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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