Non-contacting inductive technology to eliminate wear
Angle set to customer’s requirement
Compact and self-contained
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 P603 TIPS® (Tilt Inductive Position Sensor) is an affordable, durable, high-accuracy tilt sensor designed for industrial and scientific feedback applications. The P603, like all Positek® sensors, is supplied with the output calibrated to the angle required by the customer, between 15 and 160 degrees and with full EMC protection built in. The sensor provides a linear output proportional with the rotation of the sensor. There is a machined registration mark to identify the calibrated mid point.

It is particularly suitable for OEMs seeking good sensor performance for arduous applications such as industrial machinery where cost is important.

Overall performance, repeatability and stability are outstanding over a wide temperature range. Electrical connections to the sensor are made via an industrial standard 4-pin M12 connector, with limited rotational capability to facilitate cable routing.

The sensor has a rugged stainless steel body and anodised aluminium mounting flange. The flange has two 4.5mm by 30 degree wide slots on a 48mm pitch to simplify mounting and position adjustment. The P603 offers a range of electrical options. Environmental sealing is to IP67.

SPECIFICATION

Dimensions
- Body diameter: 35 mm, Flange 60mm
- Body Length (to seal face): 44 mm standard, 50 mm buffered

Independent Linearity/Hysteresis
- (combined error): < ± 0.25° - up to 100°
- Temperature coefficients: < ± 0.01%/°C Gain &< ± 0.01%/FS/°C Offset

Response Time
- 250 ms @ 20°C typ.

Resolution
- Infinite

Damping Ratio
- 0.2 : 1 (0.6 nom. @ 25°C)

Noise
- < 0.02% FSO

Environmental Temperature Limits
- Operating: -20°C to +85°C all output options
- Storage: -40°C to +125°C

Sealing
- IP67

EMC Performance
- EN 61000-6-2, EN 61000-6-3
- IEC 68-2-6: 10 g
- IEC 68-2-29: 40 g

MTBF
- 350,000 hrs 40°C Gr

Drawings
- P603-11 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.
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 angle from ±7.5° to ±80° in increments of 1°.

**ELECTRICAL INTERFACE OPTIONS**

<table>
<thead>
<tr>
<th>OUTPUT SIGNAL</th>
<th>SUPPLY INPUT</th>
<th>OUTPUT LOAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard: 0.5-4.5V dc ratiometric</td>
<td>+5V dc nom. ± 0.5V.</td>
<td>5kΩ min.</td>
</tr>
<tr>
<td>Buffered: 0.5-4.5V dc</td>
<td>+24V dc nom. + 9-28V.</td>
<td>5kΩ min.</td>
</tr>
<tr>
<td>±5V dc</td>
<td>±15V dc nom. ± 9-28V.</td>
<td>5kΩ min.</td>
</tr>
<tr>
<td>0.5-9.5V dc</td>
<td>+24V dc nom. + 13-28V.</td>
<td>5kΩ min.</td>
</tr>
<tr>
<td>±10V dc</td>
<td>±15 V dc nom. ± 13.5-28V.</td>
<td>5kΩ min.</td>
</tr>
<tr>
<td>Supply Current</td>
<td>10mA typical, 20mA maximum.</td>
<td></td>
</tr>
<tr>
<td>4-20mA (2 wire)</td>
<td>+24 V dc nom. + 18-28V.</td>
<td>300Ω @ 24V.</td>
</tr>
<tr>
<td>(3 wire sink)</td>
<td>+24 V dc nom. + 13-28V.</td>
<td>950Ω @ 24V.</td>
</tr>
<tr>
<td>(3 wire source)</td>
<td>+24 V dc nom. + 13-28V.</td>
<td>300Ω max.</td>
</tr>
</tbody>
</table>

**CONNECTOR**

Connector - Hirschmann ELWIK A 41 02 IP67