P603
Large angle tilt Sensor

- 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 oflinear, rotary, tilt and intrinsically safe positionsensors, Positek® has the expertise to supply asensor 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 feedbackapplications. The P603, like all Positek® sensors,is supplied with the output calibrated to the anglerequired by the customer, between 15 and 160degrees and with full EMC protection built in. The sensor provides a linear output proportional-with the rotation of the sensor. There is amachined registration mark to identify thecalibrated mid point.

It is particularly suitable for OEMs seeking goodsensor performance for arduous applications suchas industrial machinery where cost is important.Overall performance, repeatability and stabilityare outstanding over a wide temperature range. Electrical connections to the sensor are made viaan industrial standard 4-pin M12 connector, withlimited rotational capability to facilitate cable routing.

The sensor has a rugged stainless steel bodyand anodised aluminium mounting flange. Theflange has two 4.5mm by 30 degree wide slots ona 48mm pitch to simplify mounting and positionadjustment. The P603 offers a range ofelectrical 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
For full mechanical details see drawing P603-11	
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
Vibration	IEC 68-2-6: 10 g
Shock	IEC 68-2-29: 40 g
MTBF	350,000 hrs 40°C Gf
Drawing List	
P603-11	Sensor Outline

Drawings, in AutoCAD® dwg or dxf format, available on request.

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PIPS® technology (Positek Inductive PositionSensor) is a major advance in displacement sensordesign. PIPS®-based displacement transducers havethe simplicity of a potentiometer with the life of an LVDT/RVDT.

PIPS® technology combines the best in fundamentalinductive principles with advanced micro-electronicintegrated circuit technology. A PIPS® sensor, basedon simple inductive coils using Positek's ASIC controltechnology, directly measures absolute position giving aDC analogue output signal. Because there is no contactbetween moving electrical components, reliability is highand wear is eliminated for an exceptionally long life.

PIPS® overcomes the drawbacks of LVDT technology– bulky coils, poor length-to-stroke ratio and the needfor special magnetic materials. It requires no separatesignal conditioning.

Our LIPS® range are linear sensors, while RIPS® arerotary 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 intrinsicallysafe-sensors.

OPTIONEN

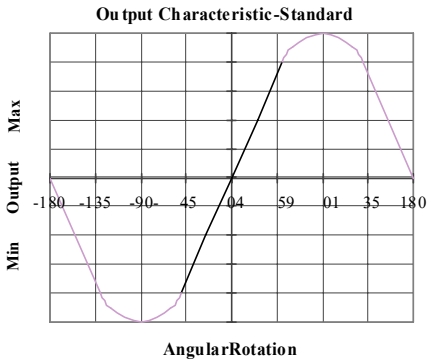
CALIBRATED TRAVEL: Factory-set to any angle from ±7.5° to ±80° in increments of 1°.

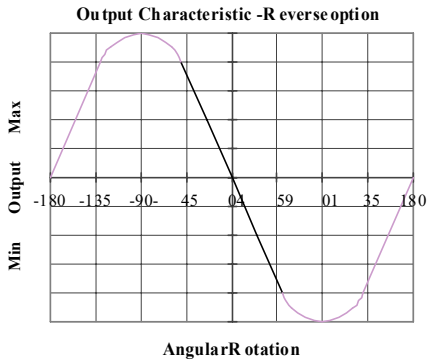
ELECTRICAL INTERFACE OPTIONS

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.
±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.

CONNECTOR
Connector - Hirschmann ELWIKA 4102 IP67

CE





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