

- **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 IP68 350 Bar**



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 S623 TIPS® (Tilt Inductive Position Sensor) is an affordable, durable, high-accuracy tilt sensor designed to provide feedback for arduous underwater applications such as ROVs. The S623, 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.

Overall performance, repeatability and stability are outstanding over a wide temperature range. Electrical connections to the sensor are made via a wet mate connector.

The sensor has a rugged 316 stainless steel body and mounting flange. The flange has two 5.5mm holes on a 54mm pitch to simplify mounting. The S623 offers a range of electrical options. Environmental sealing is to IP68 350 Bar.

SPECIFICATION

Dimensions

Body diameter	40 mm, Flange 69mm
Body Length (to seal face)	81 mm
For full mechanical details see drawing S623-11	

Independent Linearity/Hysteresis

(combined error) < ± 0.25° - up to 100°

Temperature coefficients < ± 0.01%/°C Gain &
< ± 0.01%FS/°C Offset
250 mS @ 20°C typ.

Response Time

Resolution

Infinite

Damping Ratio

0.2 : 1 (0.6 nom. @ 25°C)

Noise

< 0.02% FSO

Environmental Temperature Limits

Operating	-4°C to +50°C all output options
Storage	-4°C to +50°C

Sealing

IP68 350 Bar

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

S623-11	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 $\pm 7.5^\circ$ to $\pm 80^\circ$ in increments of 1° .

ELECTRICAL INTERFACE OPTIONS

OUTPUT SIGNAL	SUPPLY INPUT	OUTPUT LOAD
Standard: 0.5-4.5V dc ratiometric	+5V dc nom. $\pm 0.5V$.	5k Ω min.
Buffered: 0.5-4.5V dc	+24V dc nom. + 9-28V.	5k Ω min.
$\pm 5V$ dc	$\pm 15V$ dc nom. $\pm 9-28V$.	5k Ω min.
0.5-9.5V dc	+24V dc nom. + 13-28V.	5k Ω min.
$\pm 10V$ dc	$\pm 15V$ dc nom. $\pm 13.5-28V$.	5k Ω min.
Supply Current	10mA typical, 20mA maximum.	
4-20mA (2 wire)	+24 V dc nom. + 18-28V.	300 Ω @ 24V.
(3 wire sink)	+24 V dc nom. + 13-28V.	950 Ω @ 24V.
(3 wire source)	+24 V dc nom. + 13-28V.	300 Ω max.

CONNECTOR

Wet mate 4 pin MC BH-4-M (axial or radial).
Supplied with a connector and 0.5 m, 4x0.5mm² cable assembly as standard.
Mating connector with longer lengths available.

