

## Positek's displacement sensors comprehensively include ATEX, IECEx and UL intrinsically safe versions

*Positek Limited is an ISO9001:2015 designer and manufacturer of precision displacement sensors that feature its own PIPS® inductive position sensing technology. Available in three derived displacement measurement formats for linear, rotary- and tilt-angle position sensing, the comprehensive range covers high-precision linear position measurement up to 1500 mm and angle measurement up to 160°.*

*Positek sensors offer exceptionally long life and superior reliability through characteristically high shock and vibration resistance in a non-contacting and long-life design that scores favourably against, potentiometer, LVDT/RVDT and magneto-strictive sensor technologies. With 30 years' experience in supplying its sensors into oil & gas, mining, marine, hydraulics and numerous other harsh industrial and otherwise challenging environment applications directed the Company to develop several variant models that have ATEX/IECEx and CSA certified approvals for hazardous gas/vapour and hazardous dust atmospheres.*

Positek's **intrinsically safe sensors** are presented in groups covering ATEX/IECEx and CSA approved sensors for gas/vapour and for dust atmospheres. There is also a separate group for mining environment approved sensors. Almost all of Positek's standard linear and rotary sensors have optional intrinsically safe approved counterparts within these groups. Through each product series, options typically cover a choice of IP rated sealing, and some offer submersible versions with sealing to 350 bar. ATEX/IECEx sensors for gas/vapour have an 'X' designation whilst dust has an 'E' designation. CSA versions carry 'G' and 'H' designations respectively, whilst mining uses 'M'.

These designations are better described using an actual sensor product as an example. One of Positek's popular linear sensors is its P100-series hydraulic/pneumatic cylinder position sensor. In its standard product offering, this robust and durable 35 mm diameter in-cylinder mounted sensor for hydraulic pressures to 350 bar has a built-to-order measurement range up to 1485mm. It's fluoropolymer-sheathed probe and stainless-steel target tube construction has a choice of IP65 or IP67 environmental sealing. Providing an effectively infinite resolution and a precision linearity to 0.25% FSO (0.1% optional), the sensor can perform over a working temperature range of -40°C to +125°C depending on the type of electronic output selected. Its impressive

shock and vibration resistance of 40 g and 10 g to IEC-68-6 and -29 respectively is complemented with an MTBF of 350,000 hrs 40°C Gf.

This 100-series sensor is available across all the various intrinsically safe versions and is operated with Positek's X005 galvanically isolated amplifier which provides either 4-20mA or 0-10V output. With IP67 sealing, the mechanical precision, EMC performance, and shock/vibration resistance are consistent with the standard product. Intrinsically safe versions have a typically reduced temperature range over their standard counterparts of -40°C to +80°C. For each intrinsically safe product group, the applicable standards met for the 100-series are as follows:

- X100-series ATEX/IECEX approved sensors for gas/vapour - **Ex II 1G**
- E100-series ATEX/IECEX approved sensors for dust - **Ex II 1GD**
- G100-series CSA approved sensors for gas/vapour - **Class I, Zone 0 Ex ia IIC T4 / AEx ia IIC T4**
- H100-series CSA approved sensors for dust - **Class I, Zone 0 AEx ia IIC T4 / AEx ia IIC T4 AEx ia D IIIC T93°C**
- M100-series, intrinsically safe for mining - **Ex I/II M1/GD**

Comparable specification differentiation between standard sensors and their intrinsically safe counterparts apply across a comprehensive range that includes more than fifteen product versions for each of the ATEX/IECEX, CSA and mining environment groups. These sensors include standalone short- and long-stroke linear position sensors in standard or slim-line housings, large- and small-angle rotary position sensors, tilt sensors and gauge head position sensors.

Positek offer ATEX, and CSA approved galvanic isolation amplifiers that are recommended for use throughout the intrinsically safe sensor range. These amplifiers provide tri-port isolation between the amplifier power supply, the hazardous area and the sensor's X005 output signal.

Where the application requires a sensor to be modified to suit specific customer requirements, Positek offer a comprehensive custom design service which in some cases can be fulfilled within days. For further information on Positek's wide range of linear, rotary and tilt position sensors and the impressive intrinsically safe range, please contact Positek Limited by email at [sales@positek.com](mailto:sales@positek.com), call +44 (0) 1242 820027 or visit [www.positek.com](http://www.positek.com).