POSITEK LIMITED

Installation Information
RIPS® X603 LARGE ANGLE TILT SENSOR
INTRINSICALLY SAFE FOR HAZARDOUS GAS/VAPOUR ATMOSPHERES

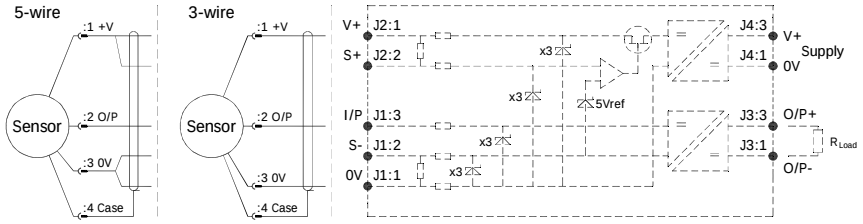
For certificate number and safety parameters information for product marked EX04, see next page.

ATEX /IECEx Qualified to Intrinsic Safety Standard Certificate numbers SIRA 13ATEX2371X IECEx SIR 13.0154X	Ex II 1G Ex ia IIC T4 Ga (Ta = -40°C to +80°C)

Electronics Version	Output Description:	Supply Voltage: V_s (tolerance)	Load resistance:
EX07	0.5 - 4.5V (ratiometric with supply) [Output code 'A']	+5V (4.5 - 5.5V)	5kΩ min

Connector Pin Layout:

IEC 60947-5-2



Putting Into Service: The sensor must be used with a galvanic isolation barrier designed to supply the sensor with a nominal 5V and to transmit the sensor output to a safe area. The barrier parameters must not exceed:-

Ui = 11.4V **Ii = 0.20A** **Pi = 0.51W**
Ci = 1.16µF **Li = 50µH**

The sensor is certified to be used with up to **1000m** of cable, cable characteristics must not exceed:-

Capacitance:	≤ 200 pF/m	for max. total of:	200 nF
Inductance:	≤ 810 nH/m	for max. total of:	810 µH

Approval only applies to specified ambient temperature range and atmospheric conditions in the range: 0.80 to 1.10 Bar, oxygen ≤ 21%.

The performance of the sensor may be affected by voltage drops associated with long cable lengths; For cable lengths exceeding 10 metres a five wire connection is recommended to eliminate errors introduced by cable resistance and associated temperature coefficients.

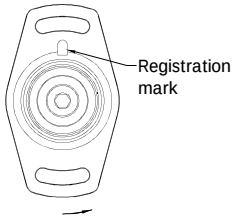
Warning - The M12 IEC 60947 connector may be rotated for purposes of convenient orientation of the connector and cable, however rotating the connector more than one complete revolution is not recommended.
Repeated rotation of the connector will damage the internal wiring!

Special Condition for Safe Use:

The apparatus does not meet the 500 V r.m.s dielectric strength test between circuit and frame, in accordance with clause 6.3.13 of IEC 60079-11:2011. This must be taken into consideration on installation.

When using a Sensor that has an integral cable in a dust application, the free end of the cable shall be appropriately terminated for the zone of use.

Under certain extreme circumstances, the non-metallic and isolated metal parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. This is particularly important if the equipment is installed in a zone 0 location. In addition, the equipment shall only be cleaned with a damp cloth.



Direction of increasing output in calibrated sector

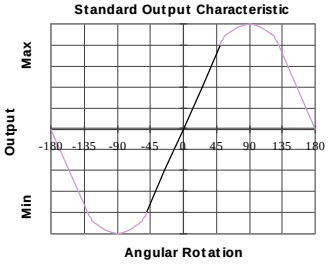
Use: The sensor is designed to measure angular displacement and provide an analogue output signal.

Assembly and Dismantling: The unit is not to be serviced or dismantled and re-assembled by the user.

Maintenance: No maintenance is required. Any cleaning must be done with a damp cloth.

Mechanical Mounting: Flange mounted; flange slots are 4.5 mm by 30 degrees wide on a 48 mm pitch. The mid point of the calibrated range is set with the flange slots in the vertical plane, mechanical mid point adjustment is achieved by rotating the sensor in the flange slots. Note: the sensor should be mounted on a vertical face.

Output Characteristic: The sensor has full rotational freedom and two sectors, 180° apart, over which linear response can be achieved. At the mid point of the calibrated range the output signal will be half full scale deflection, and the mounting flanges will be vertical. In the calibrated range the output increases as the sensor is rotated in an anti-clockwise direction viewed from the flange face- see drawing above. The calibrated output is factory set to be between 15° and 160°.



Incorrect Connection Protection levels: Not protected – the sensor is **not** protected against either reverse polarity or over-voltage. The risk of damage should be minimal where the supply current is limited to less than 50mA.

CE

X603-19o

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Installation Information
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For certificate number and safety parameters information for product marked EX07, see previous page.

ATEX Qualified to Intrinsic Safety Standard Certificate numbers SIRA 00ATEX2076X			Ex II 1G EEx ia IIC T4 (Ta = -40°C to +80°C)
Electronics Version	**Output Description:**	**Supply Voltage:** V_s (tolerance)	**Load resistance:**
EX04	0.5 - 4.5V (ratiometric with supply) [Output code 'A']	+5V (4.5 - 5.5V)	5kΩ min

The barrier parameters must not exceed:-

Ui = 11.4V **Ii = 0.20A** **Pi = 0.51W**
Ci = 1.16µF **Li = 50µH**

The sensor is certified to be used with up to **1000m** of cable, cable characteristics must not exceed:-

Capacitance: ≤ 200 pF/m for max. total of: 200 nF
Inductance: ≤ 660 nH/m for max. total of: 660 µH

With the exception of the certificate number and safety parameters above, all other notes regarding Putting Into Service, Use, Assembly and Dismantling etc. on previous page apply to sensors marked EX04 or EX07.

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