

# Installation Information

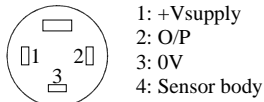
## RIPS<sup>®</sup> X502 SMALL ANGLE ROTARY SENSOR

INTRINSICALLY SAFE FOR HAZARDOUS GAS/VAPOUR ATMOSPHERES

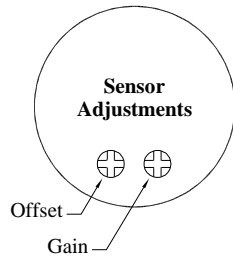
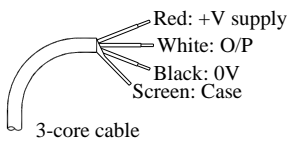
ATEX Qualified to Intrinsic Safety Standard Certificate number Sira 00ATEX2076X			Ex II 1G EEx ia IIC T4 (Ta = -40°C to +80°C)		
Electronics Option	Output Description:	Supply Voltage: (Vs)	Output:	Load resistance:	Load connected to:
A	Voltage (ratiometric with supply)	5±0.5V	0.5 to 4.5V	2kΩ min	0V

**Connector pin layout:**

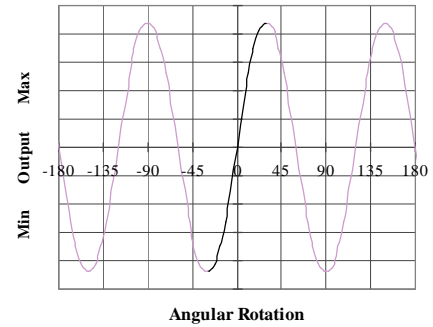
Wide pin '4'



**Conductor Identification:**



**Output Characteristic - Standard**



**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:-

- U<sub>i</sub> = 11.4V      I<sub>i</sub> = 0.20A      P<sub>i</sub> = 0.51W
- C<sub>i</sub> = 1.36µF\*    L<sub>i</sub> = 710µH\* (Lxx option)
- C<sub>i</sub> = 1.16µF      L<sub>i</sub> = 50µH (J option)

\*Figures for 1km cable where: C<sub>i</sub> = 200pF/m & L<sub>i</sub> = 660nH/m

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

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.

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

**Use:** The sensor is designed to measure Rotary 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.

**Gain and Offset Adjustment:** (Where accessible - Typically ± 10% Min available)

To adjust the gain or offset use a small potentiometer adjuster or screwdriver 2mm across. Do not apply too much force on the potentiometers. The offset is set at mid span at the mid point, within ±5°, of rotation.

**Mechanical Mounting:** Flange mounted or servo mount, with appropriate clips, options. The flange slots are 4.5mm by 30 degrees wide on a 48mm pitch. The sensor should be mounted with minimal axial and radial loading on the shaft for optimum life. It is recommended that the shaft is coupled to the drive using a flexible coupling.

Tests indicate that life in excess of 16 million cycles can be achieved with 1kg side and end load.

**Output Characteristic:** The sensor has full rotational freedom and six sectors, 60° 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 flat on the shaft is aligned with the registration mark in the base of the sensor. In the calibrated range the output increases as the shaft is rotated in an anti-clockwise direction viewed from the shaft. The calibrated output is factory set to be between 5 and 20°.

**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.