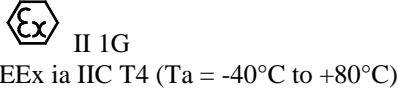


# Installation Information

## RIPS® X502 SMALL ANGLE ROTARY SENSOR

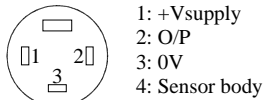
INTRINSICALLY SAFE FOR HAZARDOUS GAS/VAPOUR ATMOSPHERES

ATEX Qualified to Intrinsic Safety Standard Certificate number Sira 00ATEX2076X

Output Description:	Barrier Supply Voltage:	Barrier Output:	
Voltage (BX002)	20-35V dc	0.5 to 9.5V	
Current Loop (BX003)	20-35V dc	4-20mA	

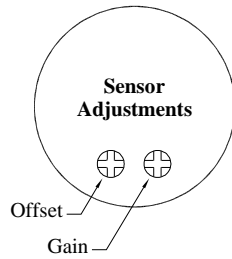
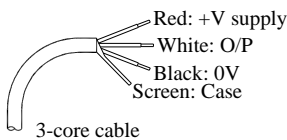
### Connector pin layout:

Wide pin '4'

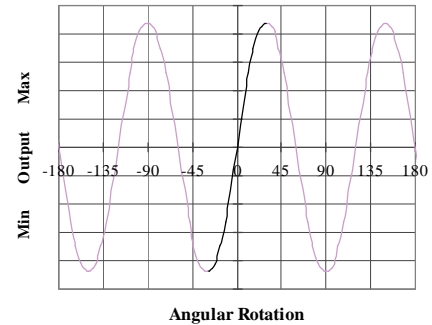


- 1: +Vsupply
- 2: O/P
- 3: 0V
- 4: Sensor body

### Conductor Identification:



Output Characteristic - Standard



### Putting Into Service:

The sensor must be used with a galvanically isolated three port barrier designed to supply the sensor with a nominal 5V and to transmit the buffered output to a safe area. Various Barrier output versions are available. The barrier parameters must not exceed:

-  $U_i = 11.4V$   $I_i = 0.20A$   $P_i = 0.51W$

$C_i = 1.16\mu F$  with connector,  $C_i = 1.36\mu F$  with 1000m of cable.  $L_i = 50\mu H$  with connector,  $L_i = 710\mu H$  with 1000m of cable.

The sensor is certified to be used with up to **1000m** of cable with parameters not exceeding:-

Capacitance = **200 nF** total, Inductance = **660μH** total

The performance of the sensor may be affected by voltage drops in long cables; these can be eliminated by using a 5 wire connection. The typical supply current is 10mA and the sensor output is ratiometric to the supply voltage at the sensor.

**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  $\pm 10\%$  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  $\pm 5^\circ$ , 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,  $60^\circ$  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  $20^\circ$ .

### 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.