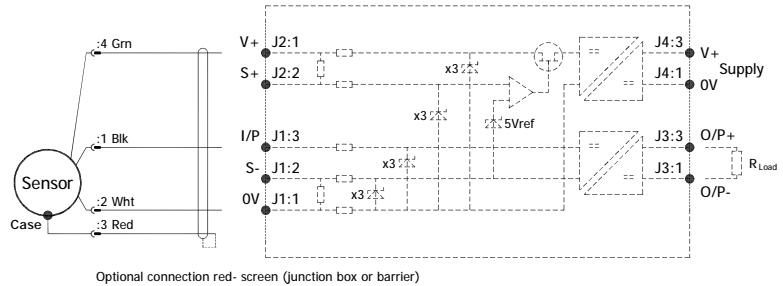


Installation Information

TIPS[®] E623 LARGE ANGLE SUBMERSIBLE TILT SENSOR INTRINSICALLY SAFE FOR HAZARDOUS DUST ATMOSPHERES

ATEX /IECEx Qualified to Intrinsic Safety Standard Certificate numbers SIRA 13ATEX2371X IECEx SIR 13.0154X		Ex II 1GD Ex ia IIC T4 Ga (Ta = -40°C to +80°C) Ex ia IIIC T135°C Da (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:
MC BH 4 M (face view)



Optional connection red- screen (junction box or barrier)

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_i = 11.4V I_i = 0.20A P_i = 0.51W
- C_i = 1.36μF* L_i = 860μH* (with cable) *Figures for 1km cable
- C_i = 1.16μF L_i = 50μH (without cable)

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 runs exceeding 10 metres a five wire connection is recommended to eliminate errors introduced by cable resistance and associated temperature coefficients.

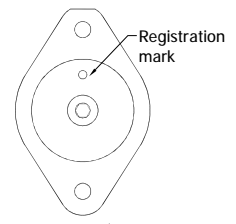
N.b. Cable free end must be appropriately terminated, including preventing water ingress into the cable. The sensor is sealed to IP68 350 Bar.

Use: The sensor is designed to measure rotational 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.

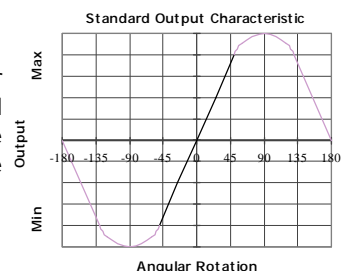
Maintenance: No maintenance is required. Any cleaning must be done with a damp cloth.

Mechanical Mounting: Flange mounted, flange holes are 5.5mm diameter on a 54mm pitch. As shipped, the sensor calibrated mid-point will be obtained with the flange in the vertical plane, as shown. Mechanical adjustment of the mid point can be achieved by loosening two M4 grub screws in the edge of the flange and rotating the sensor body. **Note:** the sensor should be mounted on a vertical face.



Direction of increasing output in calibrated sector

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:- 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.