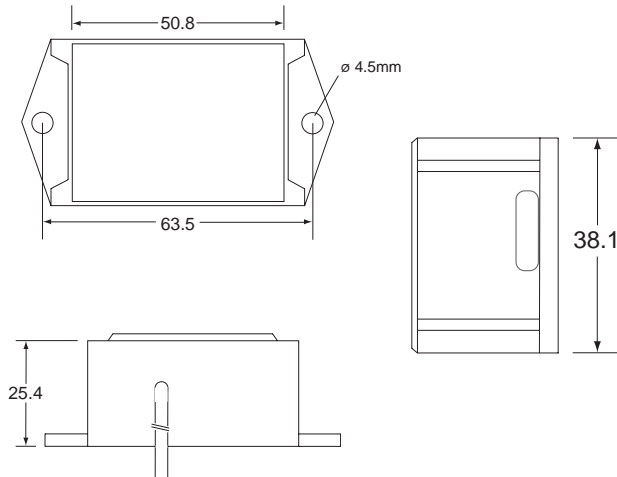




# PRODUCT DATA SHEET



Drawings not to scale  
All dimensions in mm nominal

## SPECIFICATION

Measurement	Positive Analogue output relative to X & Y axis tilt.
Angular range	± 45° from horizontal
Accuracy	± 1° between +/- 30°
Output Voltage	50mV / Degree
Alarm Outputs	MOSFET open drain Load: 1.8A Max. Switching voltage: 35V max. On resistance: 150mOhms Max.
Alarm Levels	+10° & -10° (Configurable)
Response Time	150ms
Supply Voltage	9 - 24Vdc
Supply Current	25mA typ.
Reverse Voltage Protection	50Vdc
Operating Temperature	-10° to +70° Temperature compensated
Storage Temperature	-20° to +80°
Case Material	ABS

**Applications include:**

- Equipment tilt monitoring / warning systems.
- Alarm control systems.
- The RS232 interface enables all operating parameters to be fully configurable by the customer. These include the alarm levels, gain settings, and axis selection.

### DUAL AXIS ELECTRONIC TILT SENSOR

PART NUMBER  
**ETS 90DP**

Rev. No.	Revision Note	Date	Signature
A	First Issue	29/7/05	KG



As part of the company policy of continued product improvement, specifications may change without notice. Our sales office will be pleased to help you with the latest information on this product range and the details of our full design and manufacturing service. All products are supplied to our standard conditions of sale unless otherwise agreed in writing.





# PRODUCT DATA SHEET

## ETS 90DP Dual Axis Electronic Tilt Sensor with positive analogue output.

The ETS 90DP is a fully temperature compensated dual axis tilt sensor with a positive analogue output voltage that corresponds to the measured angle. The output is centred on 2.5V when the device is horizontally level and the output changes 50mV per degree. Therefore at -30 degrees of tilt the output is 1.0V and at +30 degrees it is 4.0V. There are also MOSFET switch outputs that operates at customer defined angles, default  $\pm 10$  degrees from horizontal. The output switching angles may be configured by connecting the unit to an RS232 terminal or to a PC via the 9 way serial connector, ETS 90RC, and using a terminal emulator program (i.e. Hyper Terminal).

Full Temperature compensation, which may be overridden, allows the unit to operate over the full -10°C to +70°C range with no loss of accuracy.

There are two angle levels per axis that are used to switch the MOSFET output. Alarm levels are pre-set at  $\pm 10^\circ$ , (configurable via RS232) to switch a MOSFET output. The ETS 90DP has two MOSFET outputs that operate independently for each axis.

The angle levels operate as follows:

Level 1 is the most negative, or least positive, angle level. When the measured angle equals, or becomes more negative than level 1, the MOSFET is turned on.

Level 2 is the most positive, or least negative angle level. When the measured angle equals, or becomes more positive than level 2, the MOSFET is turned on.

Under normal conditions, no output is on whilst the measured angle is between level 1 and level 2 settings.

Axis Y uses levels 3 & 4 to switch the corresponding MOSFET output.

## ETS 90DP

Dual X and Y axis sensor with two positive analogue outputs of 50mV per degree. One MOSFET output per axis that operate when the measured angle is outside the pre-set alarm levels.

The ETS 90DP is housed in a compact rugged ABS case.

## ETS 90RC

Use this part number to order an RS232 interface cable which enables all configurable parameters to be customised by connecting the sensor to a terminal or PC. It includes a 1.5metre lead with mating connector, and 9 way D type connector for direct connection to a serial port on a PC. A simple set of commands enables all parameters to be configured by the user using a terminal emulation program.

Microprocessor control enables the sensor to be rapidly customised for specific applications. If you have an angle, or acceleration application that falls outside our standard range, then please contact our sales office for technical assistance.

**DUAL AXIS ELECTRONIC SENSOR**

PART NUMBER  
**ETS 90DP**

Rev. No.	Revision Note	Date	Signature
B	Re-written	29/7/05	KG



ISO 9001:2000  
Reg. No. FM 21080

**COMUS**