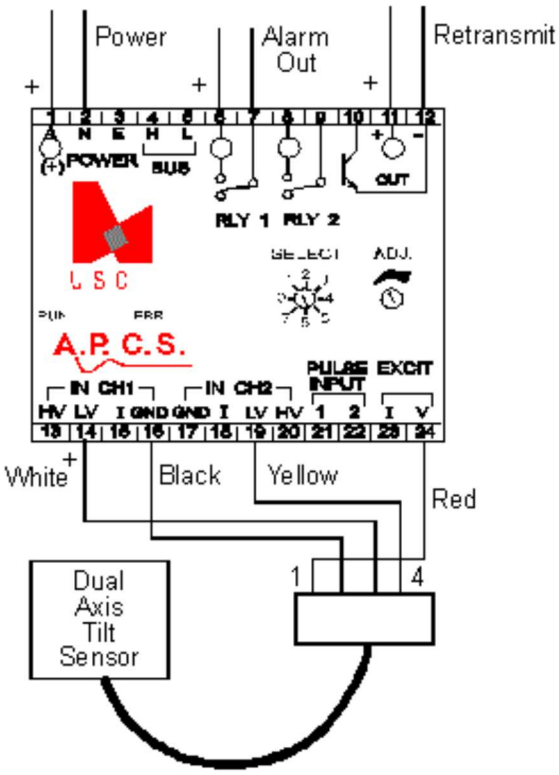
Universal Tilt Alarm using X and Y Sensors

Operating Description

A dual axis tilt sensor is connected to the USC. The USC converts the tilt signals from the X-axis (pitch) and Y-axis (roll) to a resultant angle. This resultant angle can be used to set the relay contact trip points and can be sent as an analogue output for metering and control. For tilt exceeding set value, the contact can be used to stop the process. E.g. tilt sensor on base of crane.



Universal Tilt Alarm Using X and Y Sensor Setup

The INPUT CH1 and CH2 USC701 settings are made according to the Sensor used.
For example:

The Crossbow CXTA02 sensor has a nominal 2.5V output signal at zero angle with a nominal 35mV/degree sensitivity. The full range is ±75° the linear range ±20°.

Therefore, for an engineering range of -20° (min) to +20° (max) in the USC input setup, we would set the input to be 1.8V (min) to 3.2V (max).

This sensor comes with a Calibration certificate. This can be used to input more accurate values for the particular sensor.

This sensor can be powered from the Excitation voltage of the USC701 (set to 18V). The angles for tripping and un-tripping can be easily set in the standard USC trip set-up menu - eg can be set to trip at 2.5 degrees resultant tilt. The analogue output can be set to user requirements in the Output menu - eg. can be set to 0-20Vdc output representing 0-20° resultant tilt.

USC Programs

File	Comment
Help	If unexpected results occur when loading the .usc file press back and click on help for instructions.
UAP00211.usc	First Issue.
UAP00212.usc	Second Issue

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