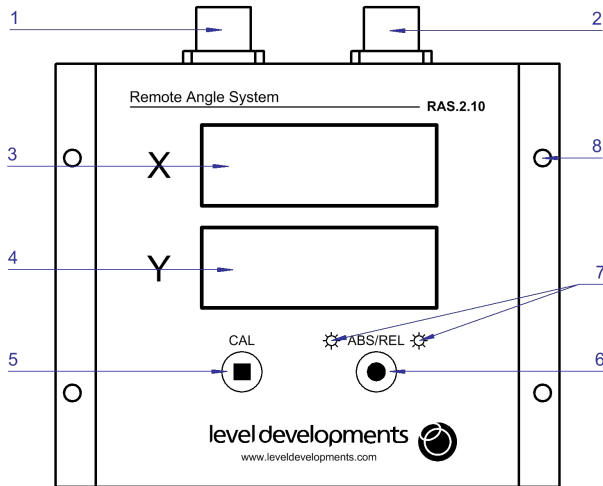




Introduction

The RAS-2-10 is a dual axis inclinometer sensor and a dual axis display unit. The sensor contains a high precision calibrated MEMS sensor and transmits an RS232 format output to the display unit. The display consists of two LED displays, one for each of the X and the Y axis. The two buttons, CAL and ABS/REL allow recalibration of the absolute zero, and switching between absolute and relative measurement mode respectively.

Features



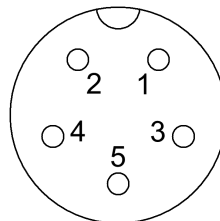
1. Connector for Power Supply (8-36Vdc)
2. Connector for inclinometer sensor unit
3. X Axis LED display (BB.BB)
4. Y Axis LED display (BB.BB)
5. Calibrate button for re-setting the absolute zero
6. Absolute / Relative button for switching between absolute and relative measurement mode.
7. Absolute / Relative LED indicators to show which mode is currently active
8. Ø5mm mounting holes

Connections

The unit is supplied with two cables, one to connect the sensor to the display, and the other to connect the display to the power supply.


The Power Supply connection is made using the cable with a 2 pin connector. The connector mates with the display unit, and the end with two bare wires connects to the power supply, red for +ve supply (8-36Vdc) and black for the ground (0v) supply.


The Sensor connection is made using the cable with a 5 pin connector on both ends. One end mates with the display unit, and the other to the sensor unit. The cable is wired pin to pin, so it is not important which end of the cable mates with the sensor and which mates with the display unit.



| Pin no. | Sensor | Display |
|---------|--------|---------|
| 1 | VCC | VCC |
| 2 | GND | GND |
| 3 | RxD | TxD |
| 4 | TxD | RxD |
| 5 | N/C | N/C |

Button Functions

CAL  The calibrate button allows the absolute zero point to be set. Ideally this is performed on a surface plate that is known to be level within 0.01°. It can however be calibrated on any flat surface that is level within a few degrees. After connecting and powering up the device, place the sensor on the surface. Press and hold the calibrate button on the display unit. After 3-4 seconds the LED display changes to BB and then back to the normal reading. Release the CAL button. Then turn the sensor around on the surface by 180°, so it is sitting in exactly the same position, only rotated (in the yaw axis) by 180°. Press and hold the calibrate button on the display unit for another 3-4 seconds until the LED display changes to BB and then back to the normal reading. Release the CAL button. The zero setting is now complete. This zero position will be stored as the absolute zero point even after the unit is powered off.

ABS/REL  This button switches the device between absolute and relative measurement modes. The two LED's either side of the button indicate in which mode the device is currently measuring. In absolute mode the angles are displayed with respect to a level reference plane. In relative mode the angles displayed are relative to the plane the sensor is in when the ABS/REL button is pressed. To switch mode it is necessary to press and hold the button for 3-4 seconds.