



Overview

The IDS-SOLAR2 is a dual axis inclinometer & high-quality, OLED display for displaying angle in single axis, dual axis and graphical measurement modes. The sensor uses a high performance MEMS sensor to measure angles in both pitch and roll axes, exhibiting low long term drift and a wide temperature range. Temperature compensation is also available.

Both the sensor and the inclinometer display system are manufactured with a tough and sturdy aluminium housing, sealed to IP67. The system is powered with a Li-Po battery that has a battery life of 30 hours, whilst a mains charger can also power the unit when the battery is not fitted. The devices are manufactured and calibrated in our UK factory to ensure high-quality.



Features

High Resolution & Accuracy

- Dual axis measurement range: $\pm 30^\circ$
- Solid state, high performance MEMS sensor
- Low temperature drift

Highly Configurable

- Adjustable threshold, hysteresis and delay
- Display resolution 0.001°, adjustable to 1, 2 or 3 decimal places
- Easy to set and store zero position
- Temperature compensation available
- Sensor cable length of 2m + 0.5m connecting cable

Standardised Connectivity

- Configurable RS232 interface with control commands
- Li-Po Battery powered with mains charger

User Friendly

- Single axis, dual axis and graphical display modes
- OLED display, high contrast with wide viewing angle
- Programmable alarm function with relay output
- Absolute and Relative measurement
- Hold button to freeze current reading
- Software application to read and log angles

Robust Design

- Operating temperature -40 to 85°C (without battery)
- Tough sealed IP67 aluminium housings
- Compact design of both sensor and display unit
- Display supplied with a padded carry case
- ROHS and CE Compliant

More information and detailed specifications on the SOLAR sensor, IDS display and bridging cable can be found via the links below.

IDS	Product Page	Datasheet
SOLAR-2-30-1-RS232	Product Page	Datasheet
EL-CAB-M12X4FS-M8X4FS-0.5	Product Page	Drawing





Applications

Example applications for this product’s use include:

- Agricultural and industrial vehicle tilt monitoring
- Telescopic and scissor lift platform monitoring
- Platform levelling and monitoring
- Railway construction and maintenance
- Installation and maintenance of motors and generators
- Platform scales and weigh bridge levelling
- Power management safety and lighting installation



The system can be readily customised to suit most applications for both hardware and software requirements. Please contact us to discuss your OEM

Specifications

General		
Voltage Supply	12-30Vdc	Supply voltage is protected internally against reverse polarity, and supply transients.
Measuring range	±30	Direction of measurement can be reversed and zero position can be reset anywhere in range. Settings are stored in non volatile memory so are remembered after power down.
Resolution (@1Hz BW)	0.001°	Resolution is the smallest measurable change in output.
Zero Bias Error	±0.015°	This is the maximum error when the device is mounted on a level surface when the device is at room temperature (20°C)
Accuracy (@20°C)	±0.030°	This is the maximum error between the measured and displayed value at any point in the measurement range when the device is at room temperature (20°C)
Temperature Error	0.0015°/°C	This is the maximum change in output per °C change of temperature.
Accuracy (-20 to 70°C)	±0.120	This is the maximum error between the measured and displayed value at any point in the measurement range at any temperature over the specified temperature range.
Long Term Stability	±0.007	This is the maximum change in output per °C change of temperature.
Sensor Interface	RS232 Full Duplex 38400 bps (adjustable)	Bit rate is adjustable between 115.2k, 57.6k, 38.4k, 19.2k and 9.6k, 4.8k and 2.4k via the digital interface
Supply to Sensor	14Vdc 50mA (max)	

Display Modes



Graphic Dual Axis Mode



Dual Axis Mode



Single Axis Mode

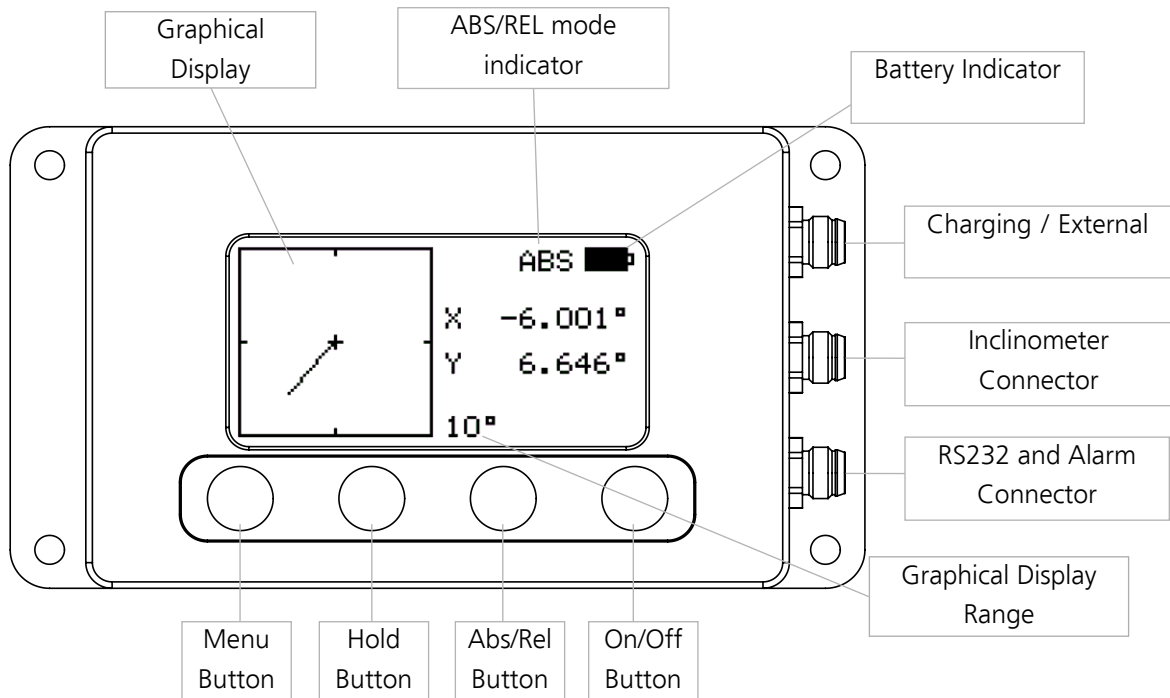


Product Information

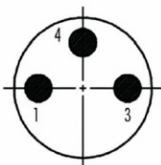
The display also contains a tilt switch alarm feature which can be configured in several ways. There are 5 options:

1. **Off** - The tilt switch will not operate on the respective axis if the setting is set to 'off'
2. **Negative** - The tilt switch will operate when the threshold angle is reached in the negative tilt direction only.
3. **Positive** - The tilt switch will operate when the threshold angle is reached in the positive tilt direction only.
4. **Negative and Positive** - The tilt switch will operate when the threshold angle is reached in either the negative or positive tilt direction.
5. **Omni** - In this mode the measurement of both X & Y axis is combined to calculate the resultant tilt angle. The relay will energise if the threshold angle is exceeded in any direction of tilt.

Interface Layout

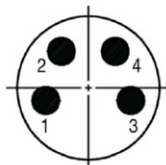


Connection Details



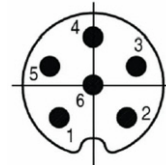
Display Charge Plug

Pin	Function
1	+ve Supply
3	0v
4	Not Connected



Display Inclinometer Plug

Pin	Function
1	+12v Supply
2	Ground
3	RS232 Rxd
4	RS232 Txd



Display RS232 & Alarm Plug

Pin	Function
1	RS232 Tx
2	RS232 Rx
3	RS232 Gnd
4	Relay Com
5	Relay NO
6	Relay NC