level developments

Features

- Single axis measurement
- Measuring range : ±180° or 0-360°
- Solid state MEMS sensor
- USB interface, and USB powered
- Zero offset position can be easily programmed and stored
- Programmable frequency response between 0.125 and 32Hz
- Software and drivers included
- Small size, 46 x 43.5 x 13.5mm
- Sealed to IP67

Applications

- Photovoltaic Solar Trackers
- Security systems
- Platform levelling and monitoring
- GPS compensation
- Platform scales and weigh bridge levelling
- Agricultural and industrial vehicle tilt monitoring
- Telescopic and scissor lift platform monitoring

Description

The LCH-360 is a low cost single axis inclinometer sensor supplied in a sealed machined Aluminium housing. It has a USB digital interface and takes power from the USB port of a PC or laptop. A PCB only version is also available (part number LCP-360-USB). These devices are manufactured and calibrated in our UK factory to guarantee performance to the stated specification.

Specifications

Parameter	Value	Unit	Notes
Supply Voltage	4.9 - 15	V dc	Internal circuit protects from transients and reverse polarity, however use of a low noise DC supply is recommended to ensure the best performance.
Operating Current	15	mA	Maximum value at any operating voltage in range. Low power version (<2mA) can be configured on request.
Operating Temperature	-40 to 85	°C	Maximum operating temperature range. Temperature variation will cause measurement errors as defined below.
Size: Width Length Height	46.0 43.5 13.5	mm	Including feet
Measuring range	±180	°	
Zero Bias Error	±0.2	°	Maximum zero offset angle when unit is placed on a level surface. For optimum zero point accuracy, the mounting angle of the part can be adjusted.
Zero Bias Temperature Error	0.02	°/°C	The maximum change in zero position output per °C of temperature change
Sensitivity Temperature Error	0.01	%/°C	% Change in sensitivity per °C of temperature change
Accuracy (20°C)	±0.3	°	The maximum error at any point in the measurement range
Long Term Stability	0.2	°	1 year stability when device is powered continuously at 20°C
Resolution (@1Hz BW)	0.05	°	Smallest measurable change in output
Frequency Response	1	Hz	Frequency at which the output is -3dB from input. Filter is 2 pole, and can be factory set to different values on request.
Mechanical shock	3000 (0.5ms) 10000 (0.1ms)	g	Shock survival limit for MEMS sensor.
Cable Type	USB Type A		
Cable Length	3	m	Other lengths available on request
Weight	24	g	Not including cable

Dimension Drawing

10.50
4.00
39.00

30.00
15.00
30.00
37.00
2x Ø 4.20
14.00
38.00
46.00

Ø 9.00
5.25
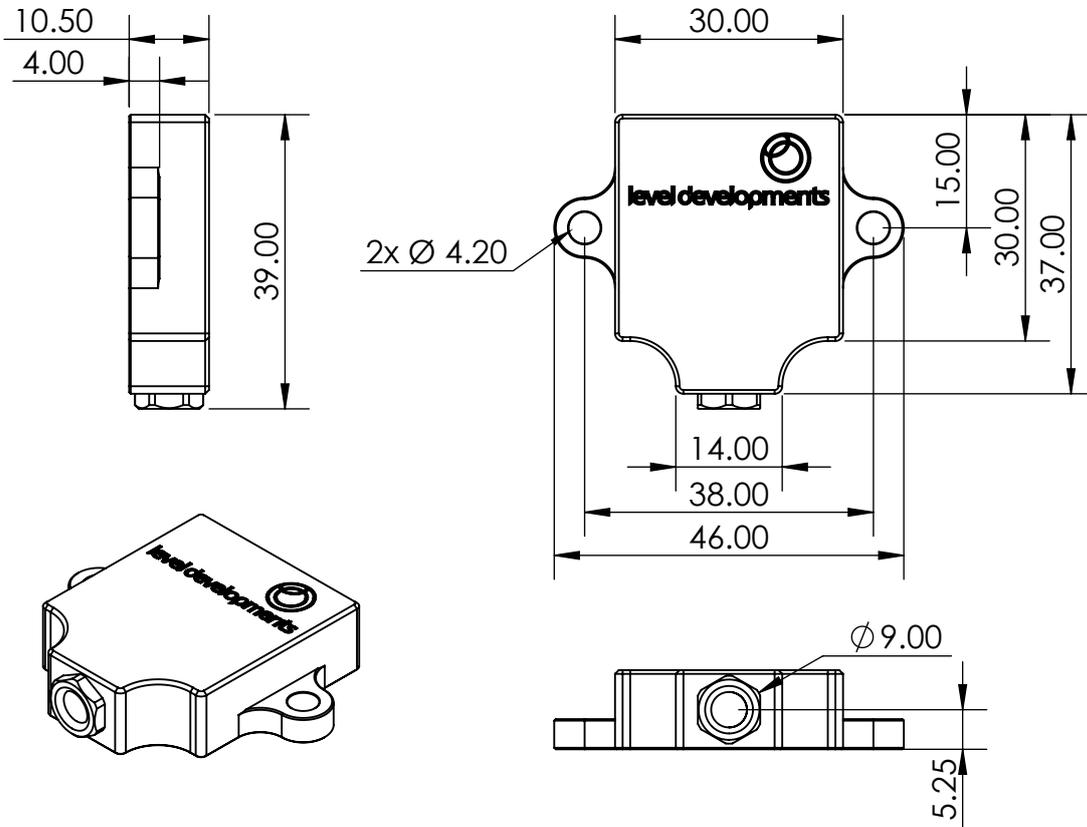
Axis Direction and Mounting Orientation For Single Axis Use

Mounted on Vertical Surface

+ve
-ve

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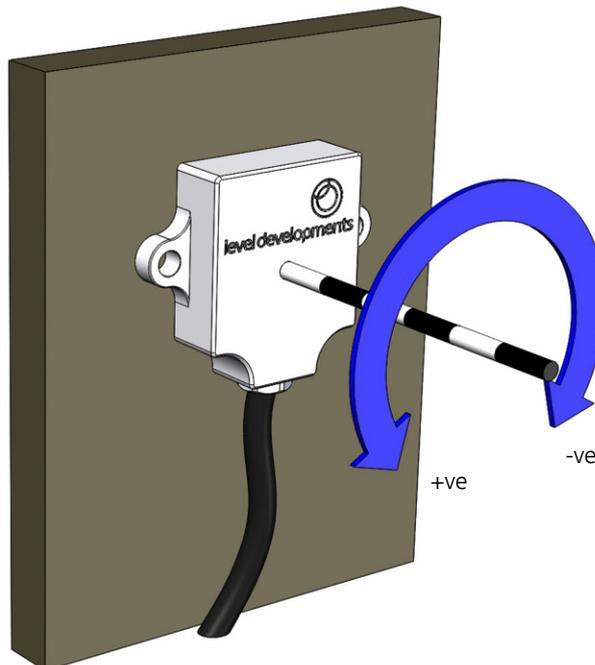
Software

A free Windows based application for reading angle, logging and device configuration is available from our website. It requires Windows XP SP3, Windows 7, Windows 8 or Windows 10 and works with 32 and 64 bit systems. It also requires the .net framework V3.5 or higher, and will prompt you to download and install this from Microsoft if it is not already installed on your system. A USB 2.0 or higher port is also required.

The basic features are shown below:

- Compatible with single or dual axis sensors
- Adjustable number of decimal places on displays
- Changing axis orientation
- Logging of data at specified intervals into CSV file
- Setting device to absolute or relative measurement mode
- Changing the frequency response of the sensor
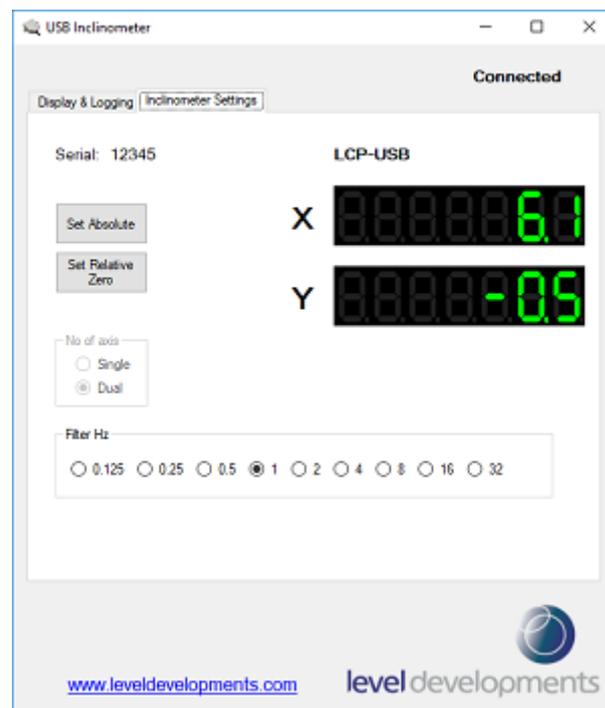
We can also offer custom software development services, please contact us for further information.

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