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Trimble GS200C Wireless Level Sensor

Features

- Resolution of 0.1 degrees
- Accuracy: typical: 0.3 degrees
- Available as a dual-axis inclinometer
- Ruggedized waterproof enclosure IP66
- 1 to 2 years of battery life for typical applications
- Line of sight radio range of 4000 ft (1300m)
- No internal moving parts
- Operates from one ‘D’ cell battery, lithium 3.6V or alkaline 1.5V.
- ISM License-free band with wavelength and modulation optimized for radio communication in an industrial environment.
- Industrial (-40°C to 85°C / -40°F to 185°F) tested industrial temperature ratings. Humidity 0 to 100%RH.
- Temperature compensated
- Potted electronics for increased waterproof protection

Applications

- Crane boom angle
- Hook block inclination
- Any moving equipment or slow-moving parts
- Barge level monitoring

Part number GS010-03-V2 is a dual axis mode. The sensor must then be installed with the antenna pointing up.

General Description

The angle sensor comes in three different configurations depending on the application:

Part number GS010-01-V2 is optimize for crane boom angle measurement type of application, the basic angle sensor reads from: -90° (pointing down) to +130°. Automatically detect left hand and right hand sides and switch sides.
Part number GS010-02-V2 will transmit angles between 0° and 360°. Zero degrees is when the angle sensor is level, such as laying on a table. If the sensor is tilted up, the angle will increase, to show 90° when pointing up. If the angel is lowered to point downward, its angle will show 359.9° and lower.

Ordering information

Model	**Description**
GS010-01-V2	Angle sensor: -90° to +130°. Automatically detect left hand and ri ght hand sides and switch sides.
GS010-02-V2	Angle sensor 0° to 360°
GS010-03-V2	Dual axis, ‘list and trim’ angle sensor.
GS010-xx-CE-V2	868MHz frequency band
GS010-xx-CSA-V 2	915MHz frequency band with class 1 division 1 certification
GS010-xx-P-V2	Powered by external voltage source. Choose a cable length p/n L B550
Related part num ber	

Solder lugs	included

Specification

Parameter	Test Condition	Min	Typ	Max	Unit
Accuracy					
Resolution			0.1		Degree
Accuracy	Depends on the sensitivity adjustment.default=0.5	0.1	0.5	1.0	Degree
Sensitivity parameter adjustment					
	Sensitivity=0%		1.0		Degree
	Sensitivity=100%		0.5		Degree
	Sensitivity=200%		0.1		Degree
Radio Power					
	GS010-01-PV-V2		0.0054		Watts
			7		dBm
Radio Frequency					
North American version		903	916	927	MHz

European version	-CE	868	869	870	MHz
Battery life					
	Lithium D’cell battery life (depends on usage)	12	24	28	Months
	Alkaline D-cell battery life	8	12	14	Months
Other					
Weight	GS010-V2		1 (0,45)		lbs (kg)

Absolute Maximum Ratings

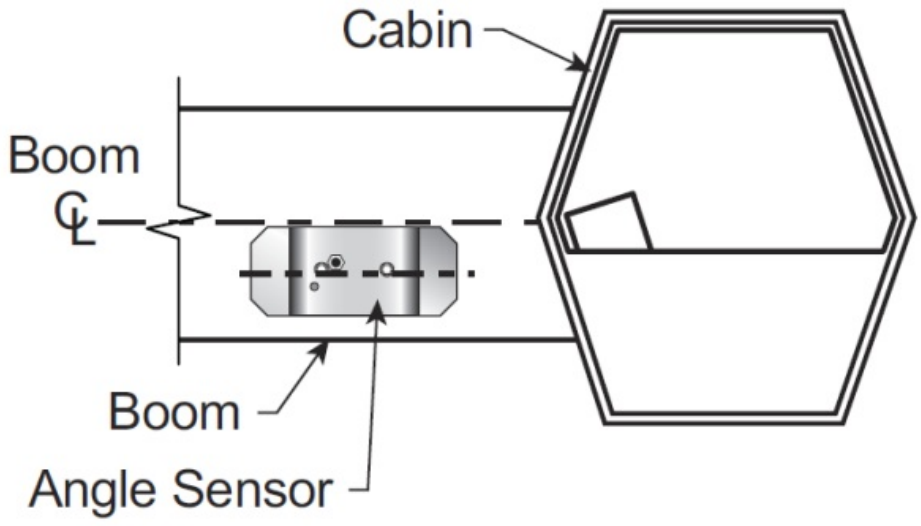
Parameter	**Test Condition**	**Min**	**Typ**	**Max**	**Unit**
Input voltage		0.9	3.6	5	V
Temperature range	Operating	-40 (-40)		+60 (+140)	ºC (°F)
Temperature range	Storage	-40 (-40)		+85 (+185)	ºC (°F)

Certifications

- FCC/IC/CE certification: FCC Part 15 Subpart C 15.247,15.205, 15.207 & 15.209
- ETSI EN 300 220 (AA)
- EMI/C – EN 61000-4-3, EN 301 489-1 – Clause 8.2, EN 61000-4-2
- CSA certificate number – 80130757
- CSA C22.2 No. 60079-0:19, 60079-11:14 (R2018), 61010-1-12, Update 1&2, Amd1:2018
- UL 60079-0-2020, UL 60079-11-2018, UL 61010-1-2018
- Class I, Division 1, Group A, B, C & D T4 Ex ia IIC T4 Ga
- Class I, Zone 0, AEx ia IIC T4 Ga
- Ambient Temperature: -20°C to 40°C

WARNING: Only use Tadiran TL-5930 3.6V or Saft LS33600 cell 3.6V text.
l'avertissement: Utilisez uniquement du texte Tadiran TL-5930 3,6 V ou Saft LS33600 3,6 V.

Installation



Example: transmitter installation on the side of a crane boom

Part number GS010-01-V2 & GS010-02-V2:

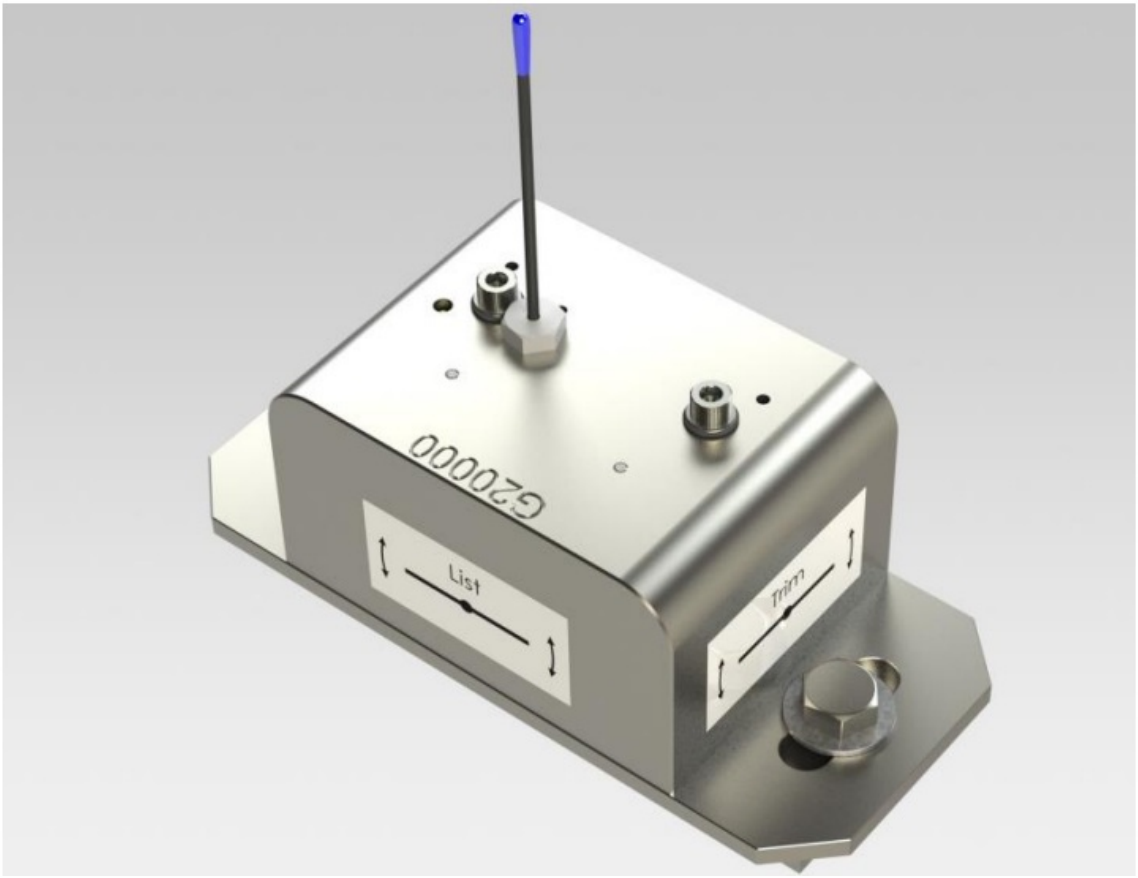
The GS010-V2 series angle sensors can be turned on by starting up the receiver to

which they are programmed. The angle sensor can then assist in levelling itself with the red and green LED.

1. Determine the angle sensor position.
    - a. The GS010-01-V2 boom angle sensor can be mounted on either side of the boom.
    - b. The GS010-02-V2 360° angle sensor must be mounted on the port side of the jib.
    - c. The angle sensor must be level with the boom or jib centerline.
    - d. The top/bottom axis of the angle sensor must be within 15 degrees of vertical
    - e. The angle sensor should have a clear line of sight to the cabin-mounted display.
    - f. The angle sensor antenna should not contact a metal object.
2. Install the welding pads; keep the angle sensor at least three feet from the weld site and any connecting metal objects while welding.
3. Mount the angle sensor to the weld pads with the screws and washers provided.
4. Verify angle indication at the receiving end.

Part number GS010-03-V2:

The List and Trim angle sensor is a dual-axis angle sensor. It monitors tilt angles from its front to back and left to right axis (when the antenna points up) and wirelessly transmits the two angles on the LSI radio network. It is packaged in a rugged stainless steel enclosure able to withstand all outside environments.



Dimensions

Units are in inches [millimeters]

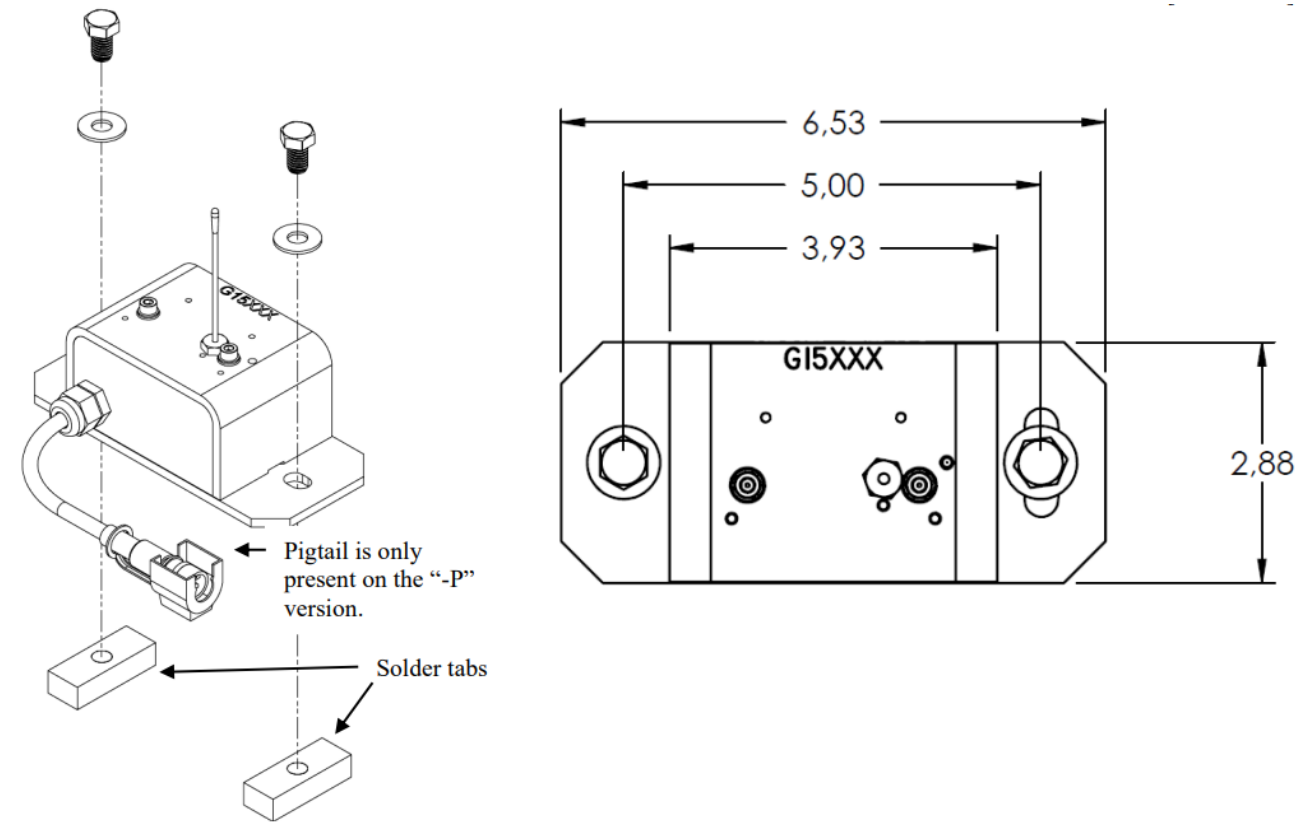


Figure: shows the 'powered' version with a 2 wires pigtail

The transmitter is supplied with two solder tabs and a set of screws. Weld the solder tabs, tap holes or use nuts to fix and hold the transmitter in place.

PMN: GS010-01-PV-V2
HVIN: MB104-00-SD-A
FCC Compliance Statement (USA)
FCC ID: S9E-GS200C

Compliance Statements: This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Caution Statements:

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate this equipment.
- This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

Industry Canada (IC) Compliance Statement

IC: 5817A-GS000C

Compliance Statements: This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

1. This device may not cause interference.,
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Caution Statements:

- This equipment complies with radio frequency exposure limits set forth by Industry

Canada for an uncontrolled environment.
- This equipment should be installed and operated with a minimum distance of 20 cm between the device and the user or bystanders.

Information to the User

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help

FAQ

- **Q: What is the battery life of the inclinometer?**
  - A: The battery life is typically 1 to 2 years, depending on usage.
- **Q: What certifications does the inclinometer have?**
  - A: The inclinometer is FCC/IC/CE certified and complies with various EMI standards.

Documents / Resources

	Trimble GS200C Wireless Level Sensor [pdf] Instruction Manual S9E-GS200C, S9EGS200C, gs200c, GS200C Wireless Level Sensor, GS 200C, Wireless Level Sensor, Level Sensor, Sensor

References

- User Manual

Trimble

GS200C, GS200C Wireless Level Sensor, Level Sensor, S9E-GS200C, S9EGS200C, Sensor, Trimble, Wireless Level Sensor

—Previous Post
Trimble GS020-V2 Wireless Wind Speed Sensor Owner's Manual

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