

ZCT

CX09




INCLINOMETER

USER MANUAL



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ZCT-CX09

INCLINOMETER USER MANUAL

✓ Overview

ZCT-CX09 is a wireless digital display inclinometer developed and produced by Shanghai Zhichuan Electronic Technology Co., Ltd. It supports dual-axis, $\pm 90^\circ$ (recommended range $\pm 60^\circ$) and single-axis 360° measurement.

When dual axis measurement is enabled, both Angle-measurement mode in degrees ($^\circ$) and the Height-Difference-Measurement mode in millimeters/meters (mm/m) can be selected.

When single axis measurement is enabled, 360° counterclockwise, 360° clockwise and $\pm 180^\circ$ measurement direction are supported; customized relative zero point is supported.

✓ Product Features

- Results displayed OLED in real time.
- Portable design; multiple functions.
- Built-in rechargeable Li-ion battery.
- Bluetooth 5.0 BLE, customizable protocols.

✓ Product Applications

- Leveling of building construction.
- Machinery leveling.
- Angle detection of various equipment.
- Geological tilt measurement

✓ Technical Parameters(at 25 °C)

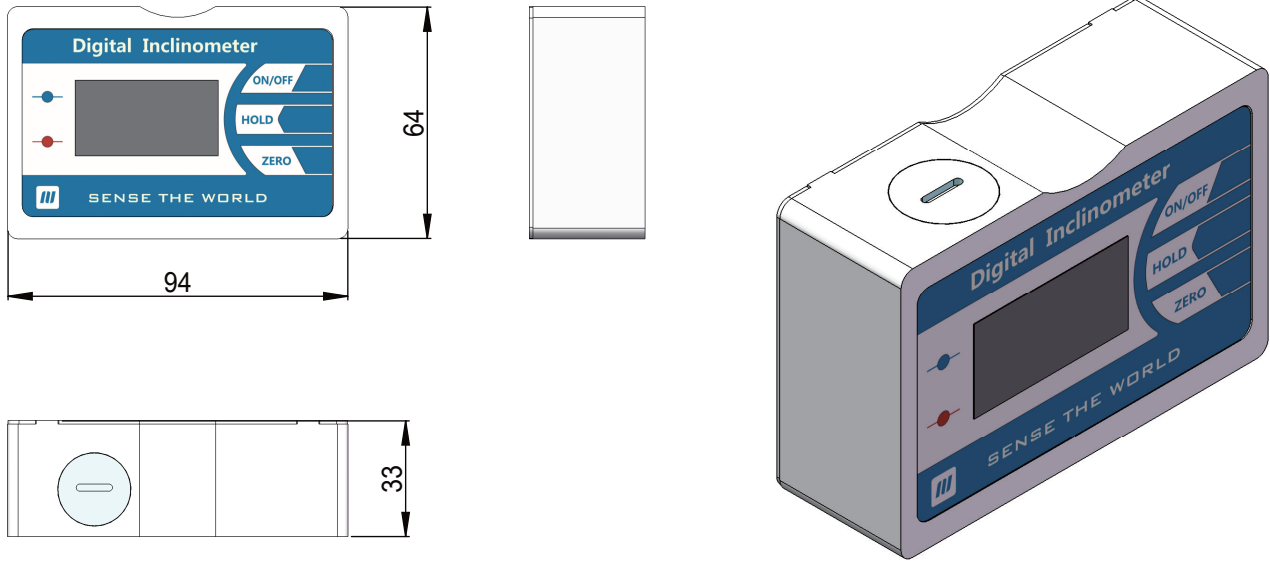
Item	Condition		Min	Type Def	Max	Unit
Power Source			3.2	3.7	4.2	V (DC)
Static current	3.7V Battery			16	25	mA
Working temperature			-10		60	°C
Recharging Temperature			-5		40	°C
Continuous working time	@ room temperature		40	42.5	45	Hrs
Dual Axis Measurement	Measurement Range1			±15°		°
	Resolution1	0~±15°		0.001		°
	Accuracy1			±0.005	±0.01	°
	Measurement Range2			±60°		°
	Resolution2	0~±60°		0.001		°
	Accuracy2			±0.01	±0.02	°
	Measurement Range3			±85°		°
	Resolution3	0~±85°		0.01		°
	Accuracy3			±0.1	±0.5	°
	Measurement Range4			±90°		°
	Resolution4	0~±90°		0.1		°
	Accuracy4			±0.5	±1.0	°
Single Axis	Measurement Range		0		360°	°
	Resolution	0~360°		0.001		°
	Accuracy			±0.01	±0.02	°
Cross axis error					±1	%
Zero point temperature drift	-10~+60°C			±0.002		°/°C
					±0.1	°
Start time					2.5	s
Zero Point deviation				±0.05		°
IP level				IP66		
Size				94*64*33		mm
Net Weight	Without charger & case			347		g

* Unless otherwise specified, the following parameters are typical values at room temperature 25°C

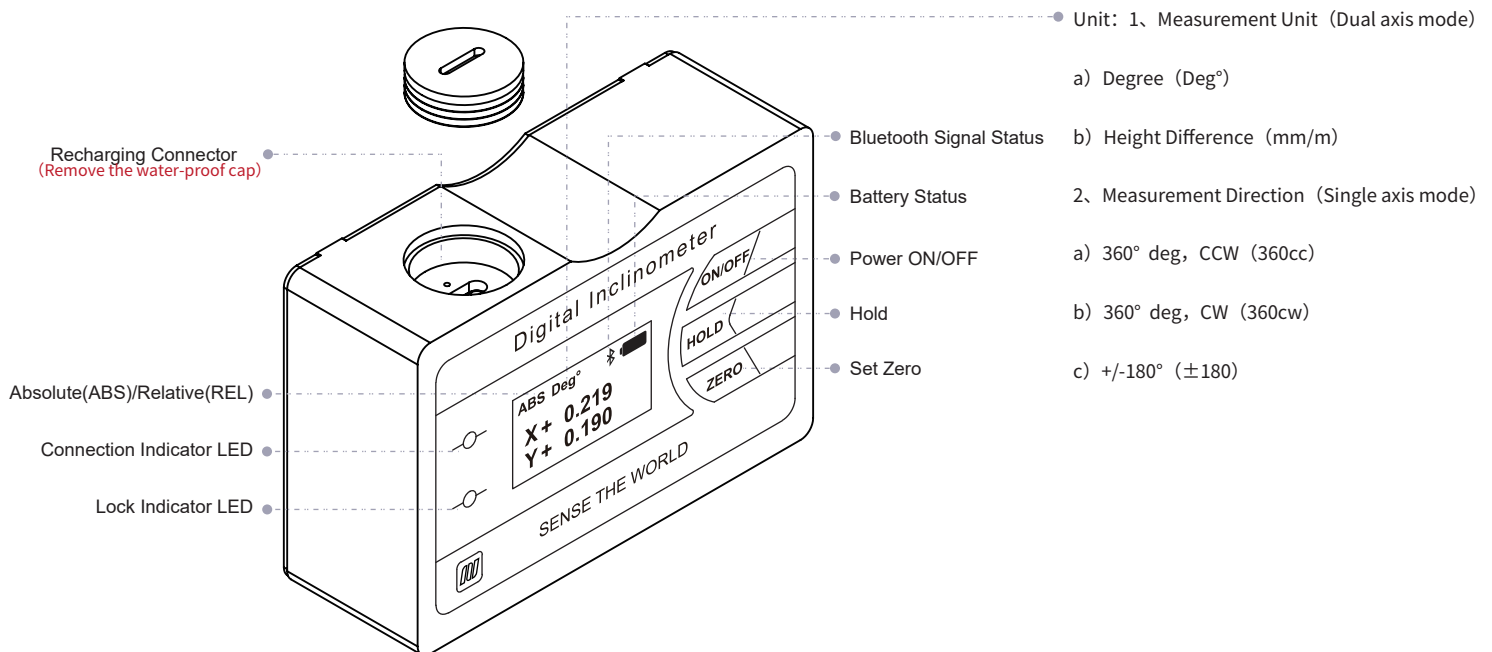
* 1: Resolution refers to the smallest amount of change that the sensor can detect within the Measurement Range.

2: Zero-point temperature drift refers to: the angular reading offset when the actual angle is at absolute zero degree when the ambient temperature is at room temperature.

✓ Housing Size (unit: mm)



✓ Function introduction and operation instructions



◆ 1) Button Control

ON/OFF:

Long press the button for 1 second to turn on the product.

When the product is running, long press the button for 2 second to turn off the product.

When the product is running, short press the button to switch among: Default Display/ Energy Saving Display / Turn Off display.

- * If the blue LED on the left side of the screen flickers regularly, it indicates that the product is in working status. The blue LED will not flicker again after shutting down. Please pay attention to the difference between power off and power on (w/ display off). If you don't need to continue measuring, please make sure that the device is off Status to avoid wasting power.

HOLD: Short press this key to freeze the display, and the red LED on the left side of the screen will light up, prompting that the measurement is paused.

In the dual-axis measurement mode, long press this key to switch the measurement unit: angle value **Deg°** and **mm/m**.

In single-axis measurement mode, long press this key to switch the measurement direction: 360°C CCW、360°C CW、 ± 180 .



ZERO: Short press this key to switch between **ABS**(absolute)/ **REL**(relative) measurement mode (i.e. set/cancel relative zero)

HOLD & ZERO: Press the HOLD and ZERO keys at the same time to switch between the dual-axis and single-axis measurement mode.

◆ 2) Recharge

When the battery power of the product is too low, the device will display "Please Charge" and automatically turn off the power 5 seconds later to prevent damage to the battery due to over-discharge. Do not turn on the product repeatedly after low power. Please recharge the product in time.

The product is charged with a 5V USB TYPE-C interface, and it can be charged using a computer USB port.

When recharging, the red LED near the connector will be turned on. When it is fully recharged, the red LED will be turn off, and the green LED will be turn on. If the device is turned on during recharging, the battery icon in the upper right corner of the screen will display  to indicate that the device is recharging. This icon will be displayed  when the battery is fully recharged. It is recommended to recharge when the device is turned off.

Lithium-ion battery has almost no memory effect, users can recharge the product whenever it is convenient. Please avoid long-term storage in a low battery state. If you do not use it for a long time, please check the battery level regularly. You can recharge the product every two to three months to extend battery life.

- * The product's TYPE-C interface has no data function, it has built-in recharging protection circuit, and limits the maximum charging current to 1A (5V). Please do not use variable voltage fast charging heads to avoid damage to the device. Please avoid recharging the product at an ambient temperature lower than -5°C or higher than 40°C to avoid battery failure.

✓ Precautions for use

This product has a built-in magnetic structure. Left, right, bottom side and back plate can be directly adhered on the surface of the steel object. Before usage, make sure that the installation surface is flat and the absorption is stable and reliable to prevent the product from falling and causing damage. For example, if the product abstraction is unsteady or shaking, it will also affect the measurement results.

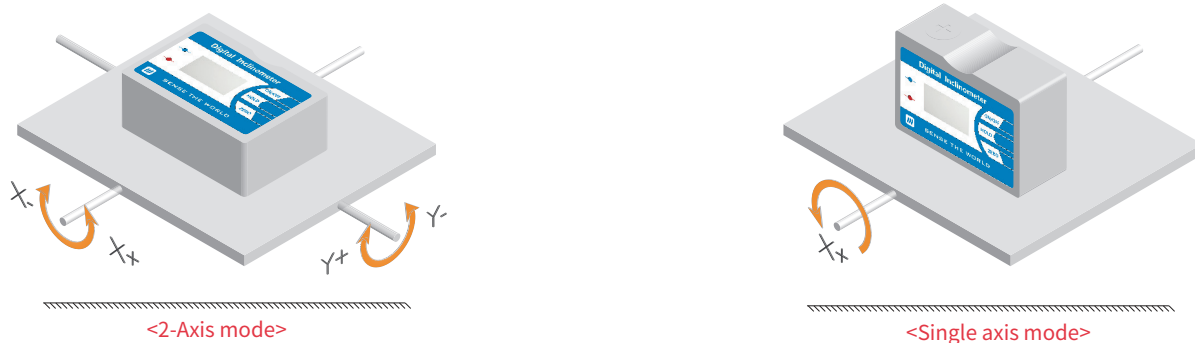
In the dual-axis mode, the Accuracy described in the technical parameter table is only for the absolute measurement mode. The Accuracy when using the relative measurement mode is determined by the range of the actual absolute angle. If necessary, please refer to the parameter table after setting the relative zero point and calculate the measurement accuracy.

Product Accuracy in single axis mode is not affected by absolute/relative measurement mode.

The default measurement mode is the is dual axis (absolute measurement) mode.

Measurement Direction:

When using dual-axis measurement mode, the product should be installed with the screen facing upwards, and the measurement directions of each axis are as shown in the figure below:







When using the single-axis measurement mode, the product is installed upright, and the measurement direction can be switched by long pressing the HOLD key. The default is 360° CCW, refer to the figure below

This product is a high-precision tilt measurement device. Please do not disassemble it. Any dismantling behavior after factory calibration may affect the final measurement accuracy of the product. The content in the technical parameter table is only responsible for the state of the product when it leaves the factory. Falling from a high place, etc. will cause changes in measurement accuracy and even product damage.

High-precision products are recommended to be calibrated regularly. If you need calibration services, please contact our company.

✓ Ordering Info

1. There are four default chargers for the product: American standard (FC certification), European standard (CE certification), British standard and Australian standard. Please contact ZC sales team about this before placing orders.

Plug type				
Detail	American standard	European standard	British standard	Australian standard
Part name	Charger(for CX09, USB, US standard)	Charger (for CX09, USB, EUR standard)	Charger (for CX09, USB, UK standard)	Charger (for CX09, USB, AU standard)

This information is for reference only, Shanghai Zhichuan Electronic Technology Co., Ltd. has the right to modify the information without notice



Guarantee Card

Product Name: INCLINOMETER

Part No.: ZCT-CX09

Data of purchasing: _____

Time limit of Guaranteeing: _____

Company Purchasing: _____

Product SN: _____

Record of mending: _____

- Report Time: _____
- Reasons of fault: _____
- Reporter: _____
- Results of mending: _____

Information of customer holding this Guarantee Card:

Note: This card is the basis for user enjoying maintaining and upgrades service.

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