

# ZCT

# 330Mx-SWP-N-YK



## INCLINOMETER

Brochure



Safety and  
Stability  
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## ZCT330M<sub>x</sub>-SWP-N-YK INCLINOMETER

### ✓ Product Description

Designed by Shanghai Zhichuan Electronic Tech Co., Ltd., CT330M<sub>x</sub>-SWP-N-YK is a high-precision dual-axis inclinometer using NB-IoT technology for communication. The maximum measuring range is  $\pm 30$  degrees, with alarm function. The default protocol is CTIOT (based on China Telecom platform), while MQTT (connectable to Onenet platform) is optional. The model can be widely used in geotechnical and structural health monitoring, municipal administration, telecom, public utility and many other areas.

### ✓ Product Features

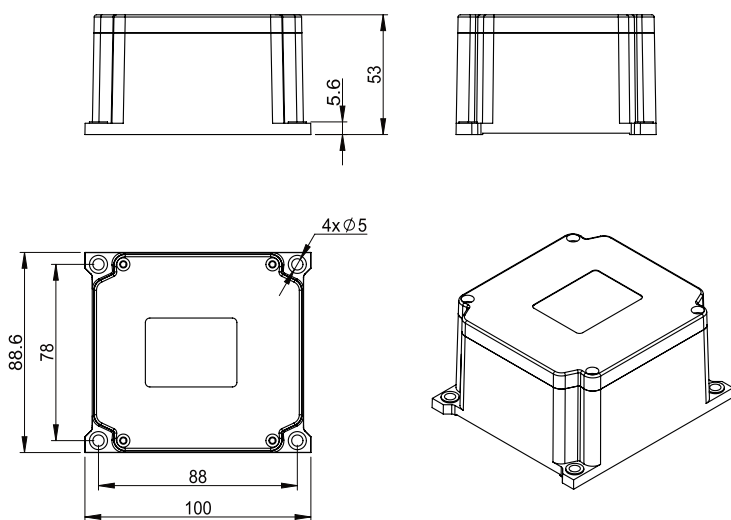
- Reliable performance
- Low power consumption

### ✓ Product Applications

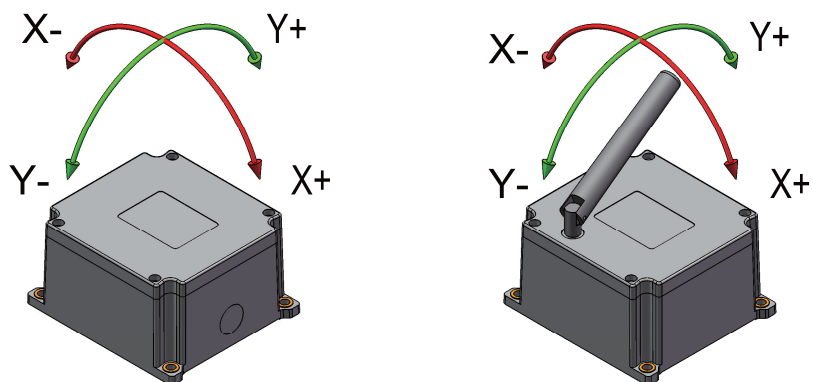
- Safety control, monitoring, alarming



## ✓ Housing Size (unit: mm)



## ✓ Measurement



## ✓ Technical Parameters(at 25 °C )

Parameters	Conditions	Min	Typical	Max	Unit
Power Source	Battery [3.6V C Li ER Battery <sup>(1)</sup> ]	2.7	3.6	3.8	V(DC)
Quiescent Current (Standby)	Alarm Enable		205	210	uA
	Alarm Cancel		1.5	5	
Peak Current			300	1000	mA
Working Temperature		-40		+85	°C
Stocking Temperature <sup>(2)</sup>	Battery not included	-40		+85	°C
	Battery Included	25		30	°C

\* Unless otherwise noted, the following parameters are typical at room temperature (25 °C)

- 1: Lithium ER batteries are not rechargeable, otherwise there is a danger of explosion! When the battery is dead, please replace the battery in time, do not charge it!
- 2: The annual battery self-discharge rate is less than 3%, if stocked in this temperature for a year. The self-discharge rate will be higher than this value if beyond this temperature range.

Item	Testing Conditions	Min	Typical	Max	Unit
Measuring Range	Two Axis	-30		30	°
Resolution <sup>(1)</sup>			0.001		°
Accuracy	-15°~+15°		±0.005	±0.01	°
	-30°~+30°		±0.01	±0.02	°
Zero Point Temperature Drift	-40°C~+85°C		±0.002		°/°C
				±0.2	°
Zero Point Deviation			±0.05		°
Heartbeat Time Interval <sup>(2)</sup>		60	86400 (Default)	131071	Second
Alarming Angle	X/Y axis		3		°
Alarm Accuracy <sup>(3)</sup>	-5°~+5°		±0.01	±0.03	°
	-15°~+15°		±0.03	±0.1	°
	-30°~+30°		±0.1	±0.3	°
Alarm Delay Time <sup>(4)</sup>		0.3	2 (Default)	25.5	Second
Battery Working Time <sup>(5)</sup>			3		Year
IP level	With Shell		IP65		

- \* 1:Resolution refers to the minimum variation that can be detected by the sensor while working in its valid range.
- 2:Refer to the time interval at which the device periodically uploads data to the server when the alarm is cancelled.
- 3:Refer to the angular error when the product triggers an alarm. For example, if the alarm angle is 3 ° and the alarm accuracy is 0.03 ° , the product XY arbitrary axis angle is less than 2.97° , which will not trigger an alarm. The alarm may be triggered at 2.97° ~3.03° , and the alarm will be triggered when it is greater than 3.03°.
- 4:Refer to the time when the product continues to tilt beyond the alarm angle to trigger an alarm.
- 5:At an ambient temperature of 25 ° C, one battery's capacity is 8500 mAh, the battery loss factor is 0.7, and the heartbeat rate is 24 hours. Average transmission current≈15.5mA,time for single transmission <=30s, T = 8500/(0.21\*1+15.5\*30/3600/24)/24\*0.7 = 1151(day).



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