Digital Display Inclinometer

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General Description

CH-100W is a digital display inclinometer, is a low-power、 high-performance digital display tilt module. It adopts the MEMS tilt angle measuring unit imported from Europe. It has a built-in industry standard MCU unit and integrates advanced filtering algorithm to ensure The performance of each module has excellent consistency. The appropriate output interface can be selected according to the actual situation of the customer. It is the best choice for industrial automation control, leveling adjustment, and dam bridge inspection In addition, it can be customized according to the customer's actual situation.

Specifications

Accuracy: 0.01°   Resolution: 0.01°   Protection rating: IP67
Measuring axis: Xaxis   Measuring range: ±90°
Power supply voltage range: 9-35v   Output signal:RS485、RS232
Anti-vibration performance: >2000g   Wide temperature working: -40°C ~ +85°C
Store temperature : -55°C~+100°C
Zero temperature drift (-40 ° C ~ 85 ° C): ± 0.005 °

Applications

1: Industrial automatic leveling
2: Medical equipment
3: Solar automatic tracking
4: Tower tilt monitoring
5: Lifting angle control of cranes
6: Structural deformation monitoring
7: Measuring and mapping instruments
8: Military equipment automation

Electrical parameters

Parameters	conditions	Min	Standard	Max	Unit
power supply		5	12 24	36	V
Working current		15	30	40	mA
Working temperature		-40		+85	℃
Store temperature		-55		+100	℃

Technical Data

Parameters	conditions	CH100W-10	CH100W-30	CH100W-60	CH100W-90
Measuring rang		±10°	±30°	±60°	±90°
Measuring axis		X	X	X	X
Resolution		0.01°	0.01°	0.01°	0.01°
Zero temperature coefficient		0.001°/℃	0.001°/℃	0.001°/℃	0.001°/℃
Absolute accuracy		0.005°	0.006°	0.008 °	0.01°
Zero Position	0° Output	2.5V	2.5V	2.5V	2.5V
Power on time		<3S	<3S	<3S	<3S
Output frequency	5-100HZ	Optional	Optional	Optional	Optional
Baud rate	2400-115200	Optional	Optional	Optional	Optional
Shockproof	2000g.0.5ms、 3Times/Axis(half sinusoid)				
Average no reason Obstacle time MTBF	≥800000hours/times				
Insulation resistance	≥100MΩ				
Output signal	RS232 、RS485				
Weight	100g(without cable)				

This Technical data only list ± 10 °, ± 30 °, ± 60 °, ± 90 ° series for reference, other measuring range please refer to the adjacent parameters.

Key words

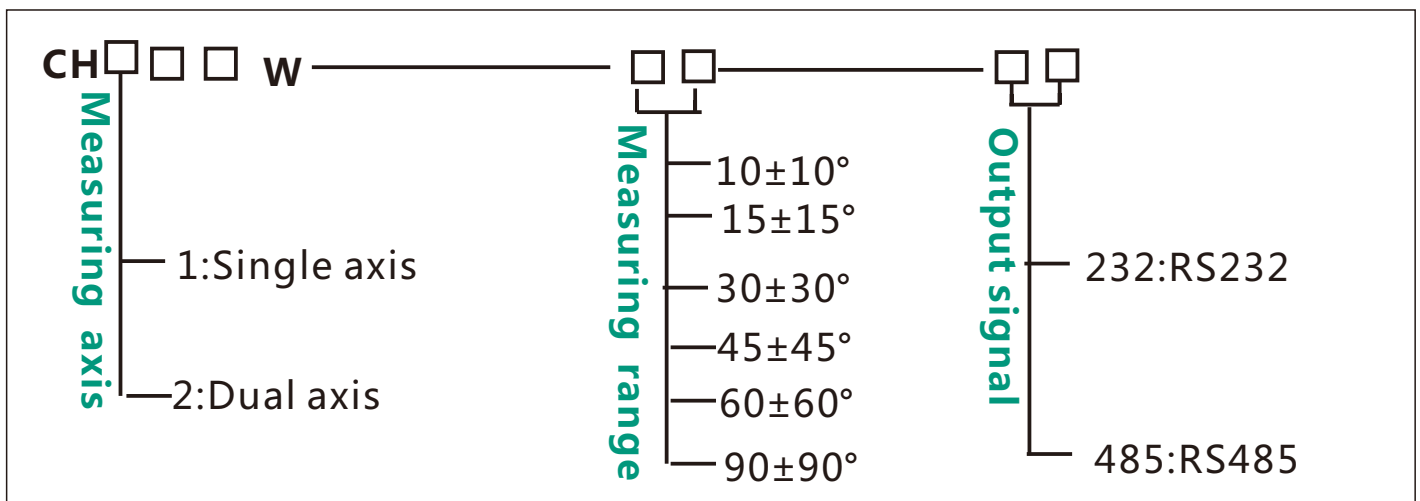Resolution：Refers to the sensor in measuring range to detect and identify the smallest changed value.

Absolute accuracy：Refers to in the normal temperature circumstances,the sensor absolute linearity, repeatability, hysteresis, zero deviation, and transverse error comprehensive error.

Response time：Refers to the sensor in an angle change, the sensoroutput value reached the standardtime required.。
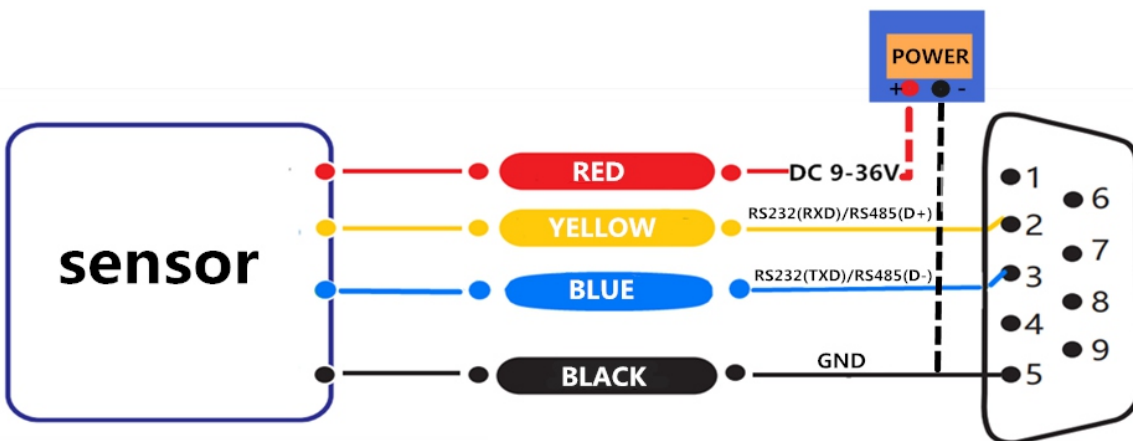
Mechanical Parameters

Connectors	1.2m lead cable (standard)
Protection glass	IP67
Enclosure material	Aluminum Oxide
Installation	4*M4 screws

Ordering information

CH□□□ **W**

Measuring axis
- 1:Single axis
- 2:Dual axis

Measuring range
- 10±10°
- 15±15°
- 30±30°
- 45±45°
- 60±60°
- 90±90°

Output signal
- 232:RS232
- 485:RS485

Electrical Connection

Line color function	RED	BLACK	YELLOW	BLUE
	DC 9V~36V Power positive	GND Power Negative	RS232(RXD) RS485(D+)	RS232(TXD) RS485(D-)

Display descrition

NO/OFF: switch

ZERO: Set the zero point

SET: Long press 6-7S, it will automatically jump to the set baud rate, then press again
How many ms will it jump to the output rate, then press it to the acquisition board address, we the default is 01
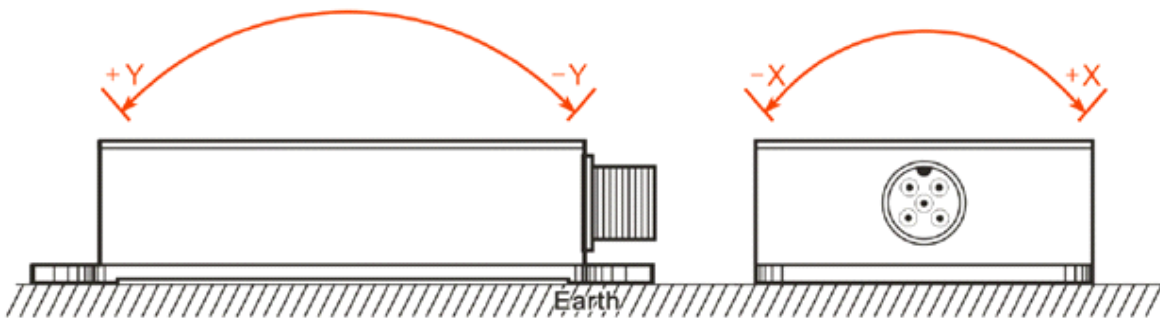

Optional precision: 0.001/0.01/0.1
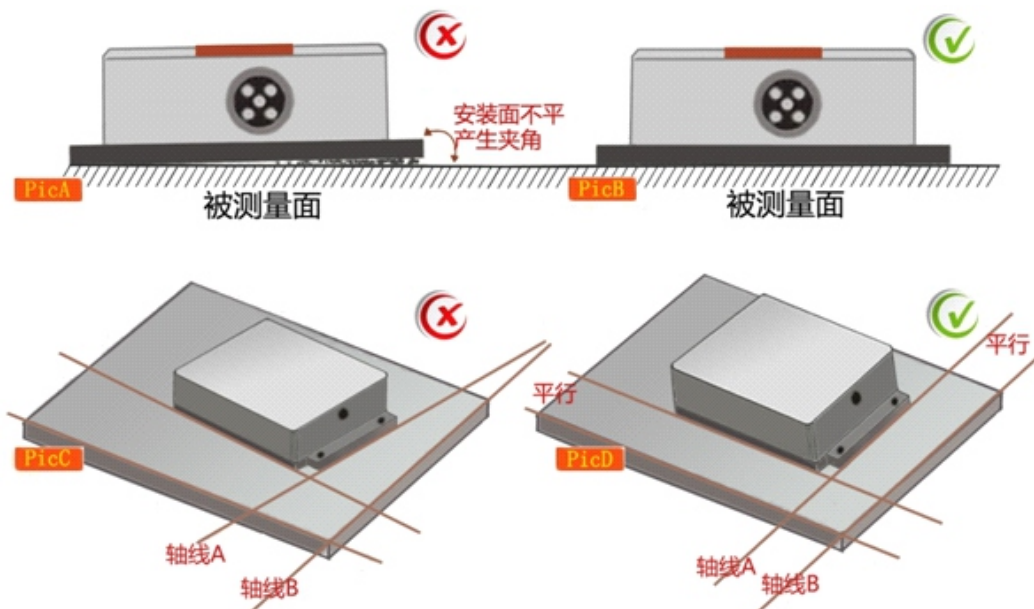Single and dual axis optional
Optional output method

Production installation notes:

Please follow the correct way to install tilt sensor, incorrect installation can cause measurement errors, with particular attention to the "surface", "line" :

1) The Sensor mounting surface and the measured surface must be fixed closely, smoothly, stability,ifmounting surface uneven likely to cause the sensor to measure the angle error. See Figure Pic.AB

2) The sensor axis and the measured axis must be parallel ,the two axes do not produce the angle as much as possible. See Figure Pic.CD :

The axis of the sensor must be parallel to the axis to be measured, and the two axes should not be angled as much as possible.

The mounting surface of the sensor must be tight, flat and stable when it is fixed to the surface to be measured.

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ITEM NO: CH-100W

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