

INC500 Series

0.05 Degree High Accuracy Single / Dual Axis Inclinometer



Main Features

- Single/Dual Axis Measurement, Range from $\pm 5^\circ$ to 360°
- Accuracy: $\pm 0.05^\circ$, Zero Point Drift: $\pm 0.002^\circ/\text{C}$
- Low Temp Drift, Optional Temperature Compensation
- Multiple Output interfaces: RS485, RS232, RS422, Voltage Output, Current Output Options
- Wide Voltage Input: 11~36V, IP67 Sealed
- Compact and Lightweight: 93.8x55.5x26 mm, 250grams
- Wide Working Temperature: $-40^\circ\text{C} \sim +85^\circ\text{C}$

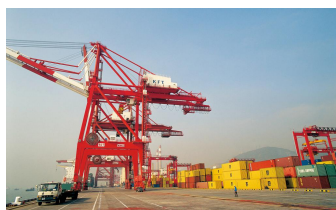
INC500 series inclinometer is high performance single or dual axis inclinometer sensor supplied in a sealed IP67 machined aluminium alloy housing, it enjoys high accuracy: $\pm 0.05^\circ$ (room temperature) and has a wide range of options to cover a measurement range from $\pm 5^\circ$ to 360° , and it has multiple optional output interfaces including RS485, RS232, RS422, voltage output (0-5V or 0-10V), and current output (4-20mA, 0-20mA, or 0-24mA). The inclinometer adopts big brand components and material, and the cable are qualified for continuous outdoor use, and it is manufactured and calibrated in our own factory to guarantee performance and the real accuracy to the stated specification.

Adopting SkyMEMS proprietary algorithms, which reduce the non-linearity, cross errors, quadrantal error and installation error, the inclinometer has inherently good temperature stability, but this can be improved further with optional temperature compensation over a range of different temperatures. And it enjoys high reliability and survivability in harsh environment and the working temperature is $-40 \sim 85^\circ\text{C}$. It has been widely used in heavy engineering machinery, pipe jacking monitoring, shield monitoring, aerial work platform, oil drilling, medical instruments, etc.

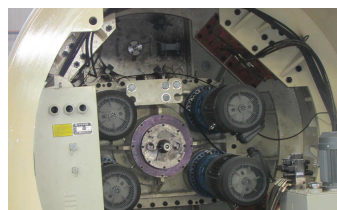
- ✓ **12-Step Quality Control, Super Reliability, More Functions**
- ✓ **Adopting Original Big Brand Component, High-class Material, Competitive Price**

- ✓ **Real Actual Precise after Calibration, Perfect Performance**
- ✓ **Successful Applications in Tens of Fields, More than 1000 Customers are Using**

Typical Applications



Heavy Engineering Machinery



Pipe Jacking



Shield Monitoring



Aerial Work Platform

Super Reliability & Performance

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Focus on MEMS Measurement & Control Technologies, Products include:
MEMS Gyro IMU Vertical Gyro AHRS
GNSS/INS E-compass Inclinometer FOG

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Technical Specifications

Technical Specs		
Parameter	Value	Comments
Range	$\pm 5^\circ, \pm 10^\circ, \pm 15^\circ, \pm 30^\circ, \pm 60^\circ, \pm 90^\circ, \pm 180^\circ, 0\sim 360^\circ$	Optional
Measurement axis	X-Y or X	
Accuracy	$\pm 0.05^\circ$	room temperature
Resolution	0.001°	room temperature
Output Data Frequency	5~100Hz	
Electrical and Environment Specs		
Voltage	11-36VDCs	
Current	<50mA@24V	
Startup Time	1.5s	
Working Temperature	-40~+85°C	
Storage Temperature	-50~+125°C	
Protection Level	IP67	
Physical Specs		
Dimension	93.8×55.5×26 mm	
Weight	250 grams	
Cable Length	1 meter	

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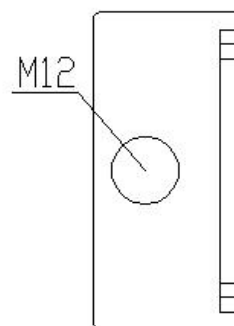
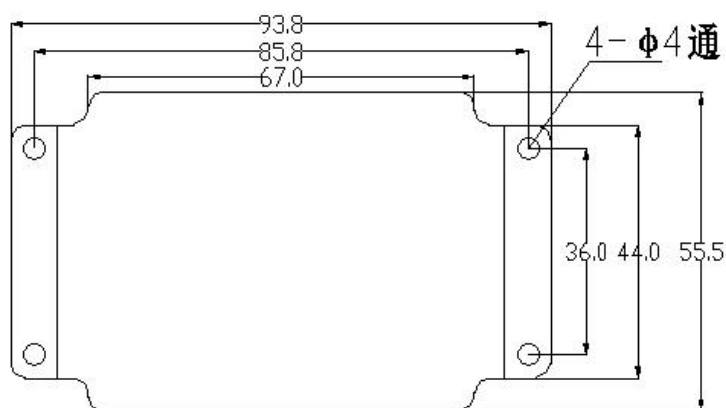
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Pins Definition

Pins Definition

Cable color	RS485 output	RS232 output	Voltage output	Current output
Red	VCC_Voltage +	VCC_Voltage +	VCC_Voltage +	VCC_Voltage +
Black	GND_Voltage -	GND_Voltage -	GND_Voltage -	GND_Voltage -
Blue	485A	TX_serial port transmitting	NC	NC
Yellow	485B	RX_serial port receiving	NC	NC
Brown	NC	OGND_signal GND	OGND_signal GND	OGND_signal GND
Green	NC	NC	V_XOUT_X axis voltage	I_XOUT_X axis current
White	NC	NC	V_YOUT_Y axis voltage	I_YOUT_Y axis current

Dimension & Package



(Unit: mm)

three-view drawing

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Order Information



INC500: series Name

X: axis number
1: single axis
2: dual axis

XXX: measuring range
005: ±5° **060:** ±60°
010: ±10° **090:** ±90°
015: ±15° **180:** ±180°
030: ±30° **360:** 0~360°

XX: detailed interface
00: RS485 output
R0: RS232 output
R1: RS422 output
V0: 0-5VDC output
V1: 0-10VDC output
C0: 4-20mA output
C1: 0-20mA output
C2: 0-24mA output

X: temperature compensation
0: no additional temperature compensation (default)
1: temperature compensation over -40~+85°C

X: cable length
1: 1 meter
2: 2 meter

For example, INC500-2--030-00-0-1 it means that the inclinometer INC500 series, dual axis, measuring range:±30°, RS485 interface, without temperature compensation, 1meter cable length.