

WTU Series serial output inclinometer module

Product introduction

WTU series serial output inclinometer module is a low power consumption and high-performance inclinometer module. It is made by high-accuracy accelerometer MEMS device and standard MCU, built-in automatic compensation and advanced filtering algorithms. The product has undergone strict production calibration, factory inspection, to ensure excellent product consistency and reliability.



WOOSENS WTU serial output inclinometer module has RS232 and RS485 two kind of output interface. Customers can choose the appropriate output interface according to the actual situation of your own system. The module uses standard MODBUS-RTU protocol, it is convenient for customers who use serial communication and is compatible with other standard protocol modules.

Features

- High accuracy, high stability
- 3D MEMS sensor
- Power supply: 9~35V
- IP67 protection
- Operating temperature -40~85°C
- RoHS

Application

Inclination measurement Horizontal adjustment Medical devices Surveying and mapping instrument

With many potential applications, the WTU series inclinometer modules provide flexible and convenient command settings, and many parameters are user-programmable.

Product specification

Electrical Specification

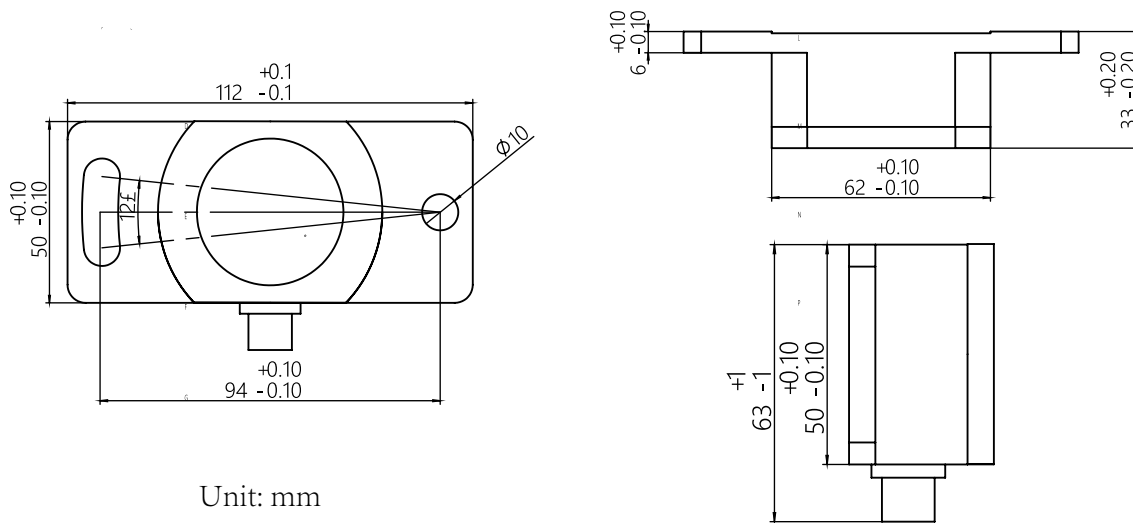
Parameter	Condition	Minimum	Typical	Maximum	Unit
Power supply	Wide voltage	9	12	35	V
Operating current		30		40	mA
Operating temperature		-40		+80	°C
Store temperature		-40		+100	°C

Performance Specification

Parameter	Condition	Specification
Measuring axis		X-Y
Measuring range		$\pm 5^\circ/\pm 15^\circ/\pm 30^\circ$
Output resolution		0.0001°
Repeatability		0.001°
Frequency response		5Hz
Relative accuracy	$\pm 5^\circ$ measuring range	0.005°
	$\pm 15^\circ$ measuring range	0.008°
	$\pm 30^\circ$ measuring range	0.010°
Temperature drift	-30~60°C	Typ0.005°/°C, Max0.008°/°C

Note: The relative accuracy is measured at room temperature 25°C.

Mechanical Characteristic



Unit: mm

The Interface Definition

Pluggable connector is P type, which requires cable (115-67000-0000)

Output interface	Brown	White	Blue	Black
RS232	VIN	RX	TX	GND
RS485	VIN	A/D+	B/D-	GND

Ordering information

Output interface RS232

Measuring range	Measuring axis	Part number
±5°	Single-Axis/Dual-Axis	WTU113-L05GD/ WTU123-L05GD
±15°	Single-Axis/Dual-Axis	WTU113-L15GD / WTU123-L15GD
±30°	Single-Axis/Dual-Axis	WTU113-L30GD / WTU123-L30GD

Output interface RS485

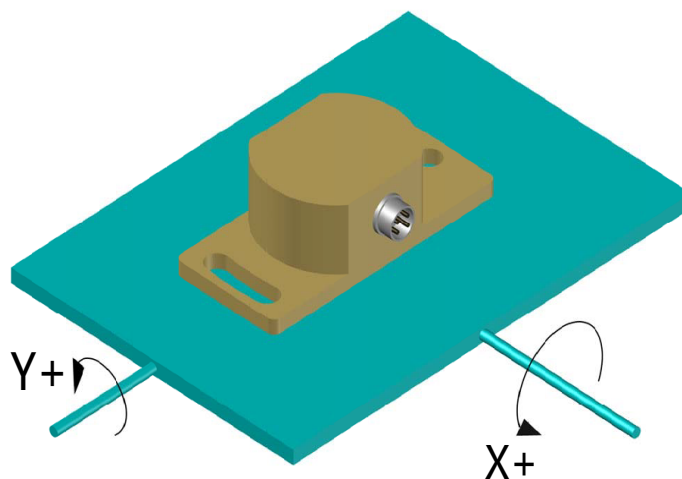
Measuring range	Measuring axis	Part number
±5°	Single-Axis/Dual-Axis	WTU115-L05GD / WTU125-L05GD
±15°	Single-Axis/Dual-Axis	WTU115-L15GD / WTU125-L15GD
±30°	Single-Axis/Dual-Axis	WTU115-L30GD / WTU125-L30GD

Communication Protocol

For the communication protocol, please refer to <The serial output Inclinometer Module Communication Protocol Manual V2.0>

Installation direction

This product supports horizontal installation, when selecting Dual-Axis product, the dip Angle of X and Y axis can be measured. The axial display is shown in the following figure:



Note: All Specifications are subjected to change without notice.