WTL Series voltage output inclinometer

Product introduction



Woosens WTL series voltage output inclinometer module which made by high-accuracy accelerometer MEMS device and standard MCU, built-in advanced anti-vibration filtering algorithms. The product has undergone strict production calibration, factory inspection, to ensure excellent product consistency and reliability.

WOOSENS WTL series voltage output inclinomete module adopts 0~5V standard interface, which can be directly connected to various industrial control hosts. It has excellent load capacity and anti-interference ability. The sensor adopts M12 4-core aviation socket to ensure the flexibility in use and reliable waterproof.

Features

- · Cost-effective
- · 0~5V Linear voltage output
- · Power supply: 9~35V
- · Operating temperature-40-85℃
- · RoHS
- · IP65 Protection

Application

Angle measurement

Engineering machinery

Rotation Direction Measurement

Equipment and Instrument Status Monitoring

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		+85	℃
Store temperature		-40		+100	℃

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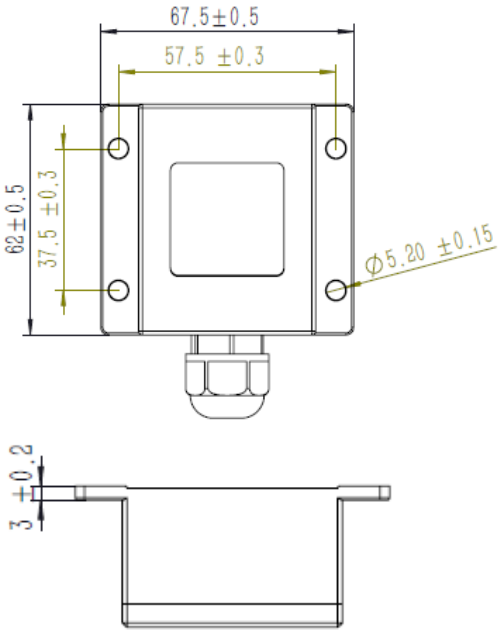
Performance Specification

Parameter	Condition	Specification
Measuring axis		X-Y(360°measuring range uniaxis only)
Measuring range		±15°/±30°/±45°/±90°/0-360°
Output voltage @ 0°		2.5 V
Output voltage range		0.5-4.5 V
Frequency response		10Hz
Sensitivity	±15°Measuring range	133mV/°
	±30°Measuring range	66.7mV/°
	±45°Measuring range	44.4mV/°
	±90°Measuring range	22.2mV/°
	0-360°Measuring range	11.1mV/°
Weight		165g

Note: The all parameters are measured at room temperature 25°

C.

Mechanical Characteristic



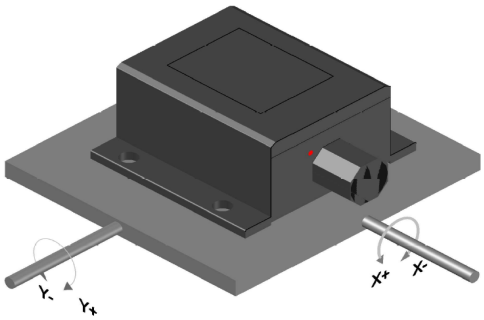
Unit: mm

Interface Definition

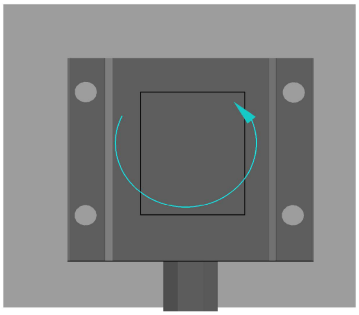
Output interface	Red	Yellow	Green	Black
Function	VIN	X-OUT	Y-OUT	GND
Output interface	Gray	White	Brown	
Function	TXD	RXD	Reference GND	

Note: RXD and TXD are the interfaces used for factory calibration, and users do not need to use them.

Installation direction



Dual-Axis



Single-Axis

Formula: Transform Voltage Into Angle

Angle(°) = (Vout(@Angle)-Vout(@0°)/Vsensitivity

Example:

Measuring range is ±90°, Sensitivity is 22mV/°, the actual measurment X axis output voltage is 4V, the actual measurment Output voltage @ 0° is 2.5V, so X axis Angle(°) = (4000-2500)/22 = 68.18°

Ordering information

Measuring range	Measuring axis	Part number
±15°	Single-Axis/Dual-Axis	WTL111-N15E/WTL121-N15E
±30°	Single-Axis/Dual-Axis	WTL111-N30E/WTL121-N30E
±45°	Single-Axis/Dual-Axis	WTL111-N45E/WTL121-N45E
±90°	Single-Axis/Dual-Axis	WTL111-N90E/WTL121-N90E
0-360°	Single-Axis	WTL111-N36E

Note: All Specifications are subjected to change without notice.