



LTS6 Low-power tilt sensor with voltage output

Product manual

V2.0-20250723

Technical Highlights

- ❖ 0~5V output;
- ❖ Wide voltage input 9 ~36V;
- ❖ High vibration resistance >3500g;
- ❖ Long working life for 10 years.



Product Introduction

The LTS6 series voltage output tilt angle sensor is a cost-effective full attitude angle measurement product independently developed by RUICOM Technology. This product is designed based on an innovative anti-interference platform, equipped with a new generation MEMS sensing core, with wide temperature range adaptability and excellent anti vibration performance, excellent working stability, and a designed service life of up to 10 years.

This product adopts the principle of non-contact measurement, and uses high-precision capacitive MEMS units to detect gravity components to achieve tilt angle calculation. Easy and flexible installation, directly fixed on the surface of the object being tested, without the need for additional mechanical shaft structures, supporting multi-directional installation methods. Especially suitable for posture monitoring needs in industrial fields such as construction machinery and agricultural equipment.

Application Scope

- | | |
|--|-----------------------------------|
| ❖ Agricultural machinery and equipment | ❖ Construction hoisting equipment |
| ❖ Aerial work platform | ❖ Medical equipment leveling |
| ❖ Electric vehicle control system | ❖ Woodworking machinery |



Performance Parameters

LTS6	Parameter
Output voltage	4 ~20 mA
resolution	0.1°
Measurement accuracy (@25°C)	±0.2°
Response time	0.05s
Temp drift characteristics -40°C~+85°C	±0.5°
Output load	> 500 ohms
Insulation resistance	> 100 megaohms
Vibration resistance	10 grms 10 ~1000 Hz
Impact resistance	100g@11 ms , triaxial (half-sine wave)
Connector	M12 * 1.0-5 core male head
wiring	Standard 2-meter shielded cable
size	L64.5 ×W50 × H18.5mm
weight	≤200g

Ordering Selection

Model	Axis	Range	Signal Output	Installation Direction
LTS6	X: X-axis	10: ±10°	V1: 0~5V	H:Horizontal installation
	Y: Y-axis	15: ±15°		HD:Horizontal downwards
	D: Dual axis	30: ±30°		V:Vertical installation
		45: ±45°		VD:vertically downward
		60: ±60°		VL:Vertical leftwards
		90: ±90°		VR:Vertical rightwards
		180: ±180° (Single axis only)		
		360: 0°~360° (Single axis only)		
		397: -3°~+97° (Single axis only)		

E.g: LTS6X10-V1-H: X-axis, ±10° Range, 0~5V output, horizontal installation.

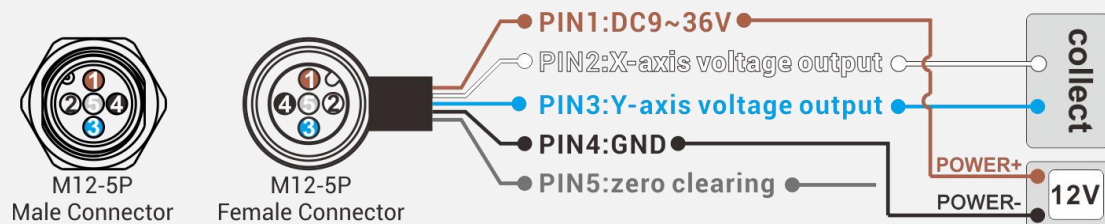
Note: The Range of 0 °~360° is limited to single axis X-axis (clockwise rotation measurement), and the vertical upward installation only.

✓ Product dimensions

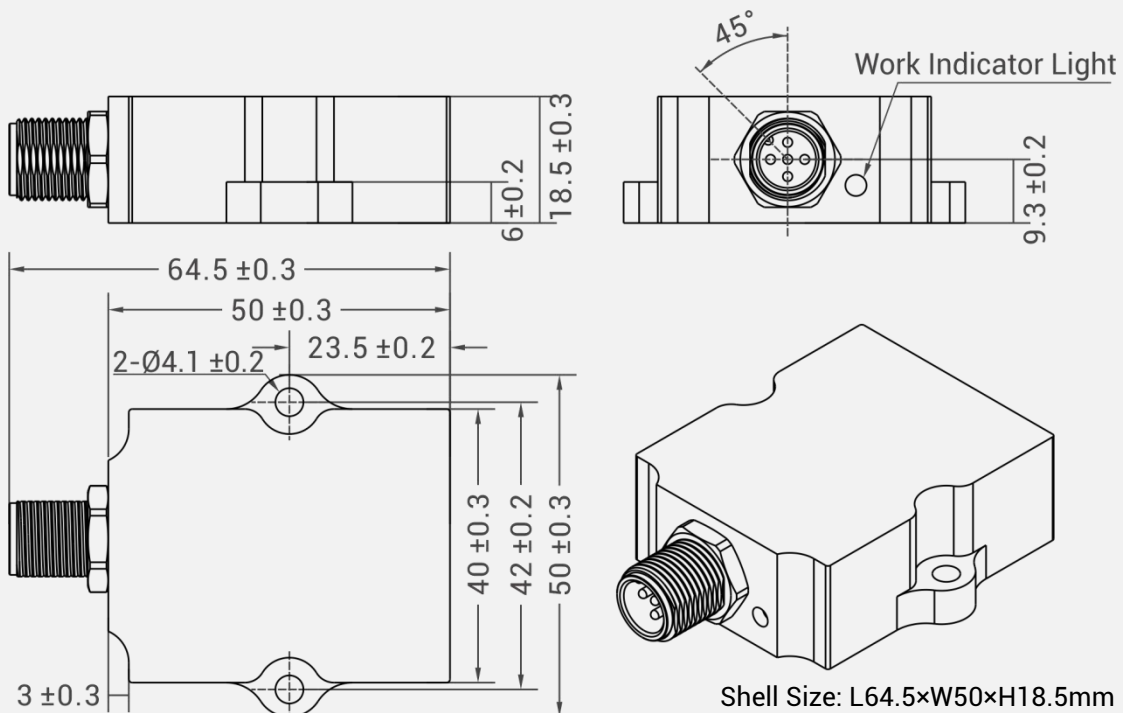
1. This sensor is based on the principle of Earth's gravity angle measurement. During installation, the sensing axis must be parallel to the measured tilt axis, and the installation surface must be flat and tightly fitted to ensure measurement accuracy.
2. Install in the direction selected by the factory. After power on, the current position can be set as the reference zero point through the zero reset command, and the relevant parameters are stored in the built-in memory.
3. IP67 protection level, can prevent rainwater and high-pressure water spray, but long-term immersion is prohibited; Damaged by immersion can be returned to the factory for repair (charged).
4. When wiring, ensure that the signal line is insulated from the positive pole of the power supply to avoid short circuits. The product is designed for common ground, and the signal negative and power negative are shared. It is necessary to reliably connect the signal negative and power negative at the acquisition end.

✓ Interface Definition

Pin/wire color	Pin definition	Description
PIN1/Brown	9 ~36V	Positive terminal of power supply
PIN2/White	X-axis output	X-axis 0~5V output
PIN3/Blue	Y-axis output	Y-axis 0~5V output
PIN4/Black	GND	negative terminal of power supply
PIN 5/Grey	zero clearing	--



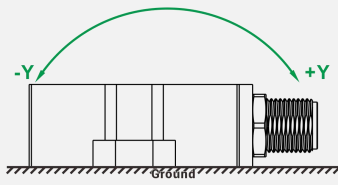
✓ Product dimensions



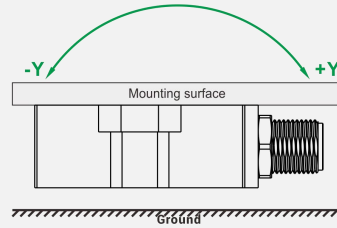
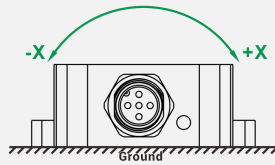
Shell Size: L64.5×W50×H18.5mm 4 / 6

Recommended screws: 2 M4 screws

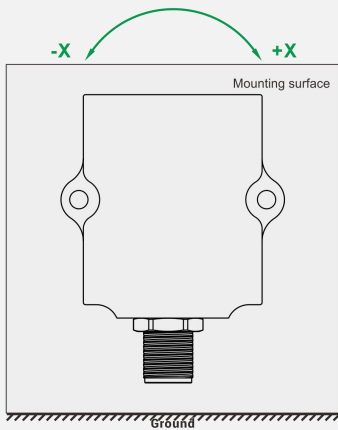
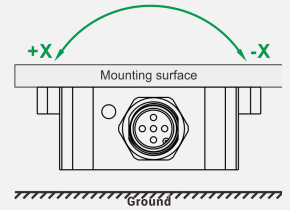
✓ Measurement direction



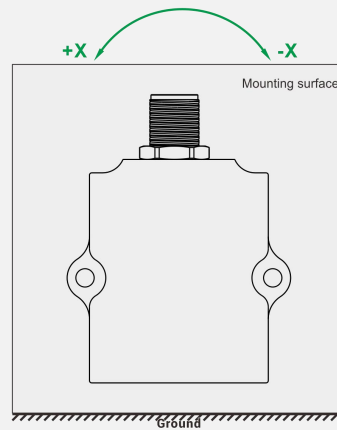
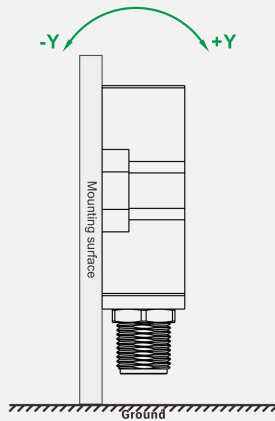
Horizontal installation



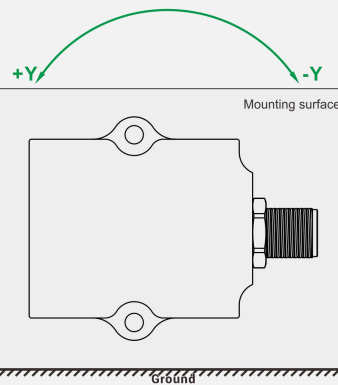
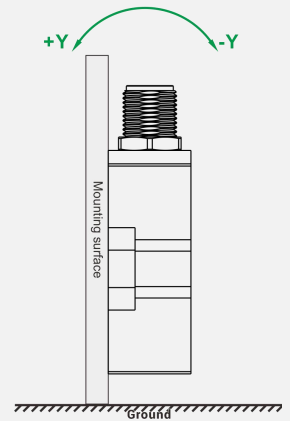
Horizontal downwards



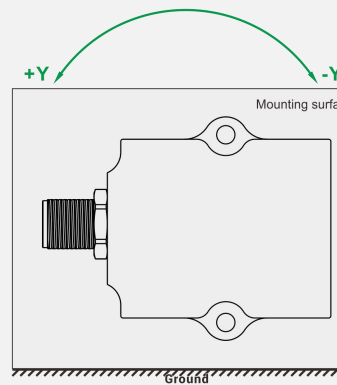
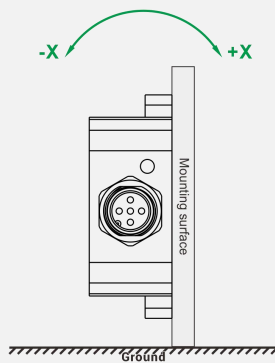
Vertical installation



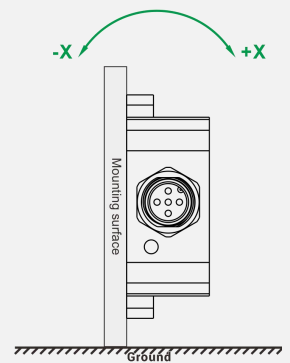
Vertically downward



Vertical leftwards



Vertical rightwards



Note: The product defaults to a horizontal upward installation method at the factory. Users can set the corresponding installation method according to their needs. Please refer to Article 2 of the user manual for the corresponding settings.

Output characteristics

The output of this product is a DC voltage of 0V to 5V, corresponding to the minimum and maximum measurement ranges of the angle measurement range. When calculating the angle, the corresponding angle value can be obtained by proportionally allocating it. For example, LTS6X30-V1-LU: indicates that the angle range of this product is $\pm 30^\circ$, the output voltage is 0V to 5V, and proportionally allocating 0° results in an output voltage of 2.5V and a sensitivity of 0.08333 V/ $^\circ$.

The following figure shows the output characteristic curve. The following figure shows the output characteristic curve:

Note: $a = (\text{maximum range} - \text{minimum range}) / 2$

