



LTS6 current output low-power tilt sensor

Product manual

V2.0-20250723

Technical Highlights

- ❖ 4 ~20 mA output;
- ❖ Wide voltage input 9 ~36V;
- ❖ High vibration resistance >3500g;
- ❖ Long working life for 10 years.



Product Introduction

The LTS 6 series current output tilt sensor is a high-performance, cost-effective all-attitude angle measurement product independently developed by RUICOM Technology. Built on an innovative anti-interference platform Equipped with next-generation MEMS sensing technology It has wide temperature range adaptability and excellent vibration resistance. Excellent work stability It is designed to have a service life of up to 10 years.

This product uses a non-contact measurement principle. Changes in the gravitational component are detected using a high-precision capacitive MEMS unit. It calculates tilt angles in real time . Installation is flexible and convenient; it can be directly fixed to the surface of the object being measured without requiring additional mechanical shaft structures. It supports installation adaptation in multiple scenarios and can be widely used in engineering machinery, agricultural equipment, and industrial automation , providing customers with reliable tilt angle measurement solutions.

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 current	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°	A1: 4~20mA	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-A1-H: X-axis, ±10° Range, 4~20mA output, horizontal installation.

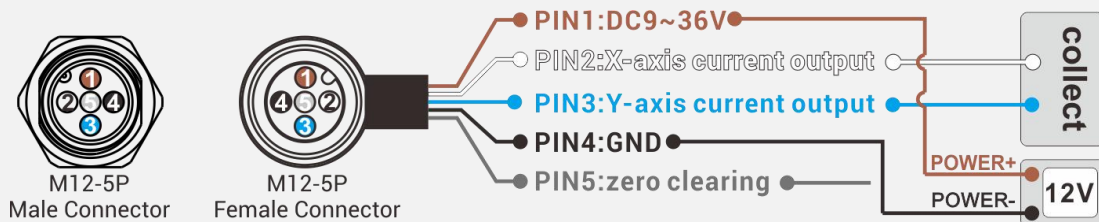
Note: The Range of 0 °~360° is limited to single axis X-axis (clockwise rotation measurement), and the vertical upward installation only.

✓ Product dimensions

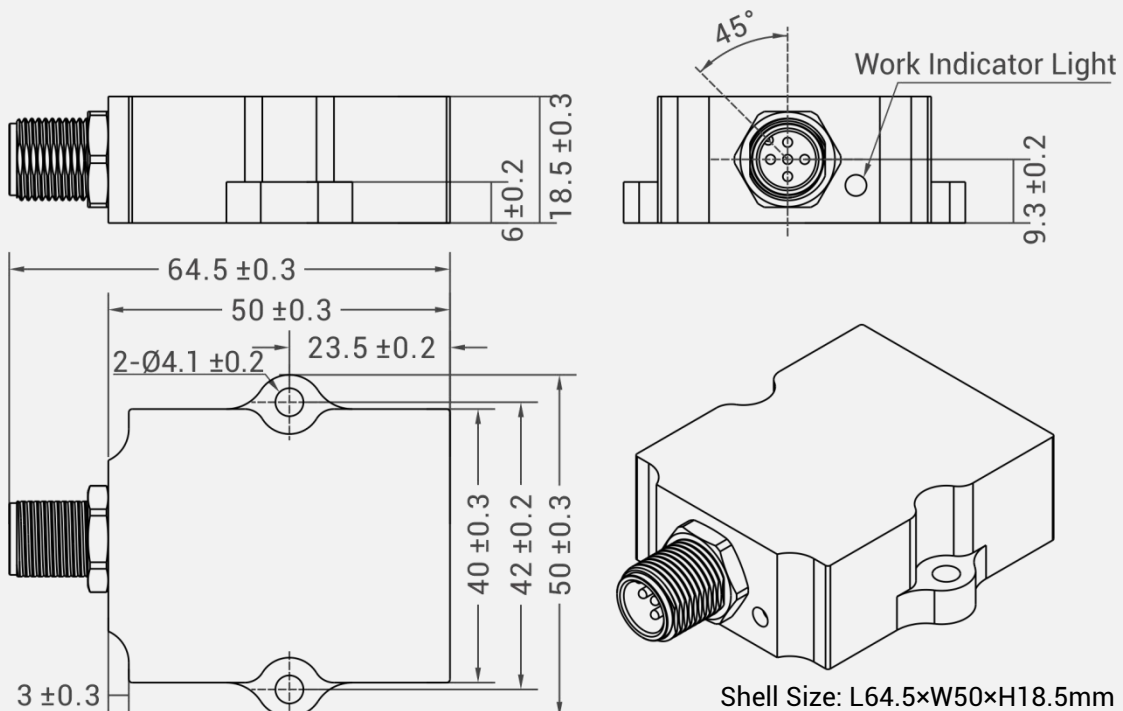
1. This sensor is based on the principle of Earth's gravity angle measurement. During installation, the sensing axis must be parallel to the measured tilt axis, and the installation surface must be flat and tightly fitted to ensure measurement accuracy.
2. Install in the direction selected by the factory. 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 4 ~ 20 mA output
PIN3/Blue	Y-axis output	Y-axis 4 ~20 mA output
PIN4/Black	GND	negative terminal of power supply
PIN 5/Grey	zero clearing	--

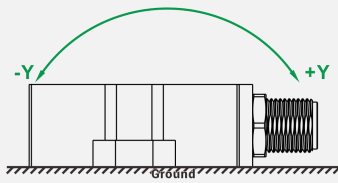


✓ Product dimensions

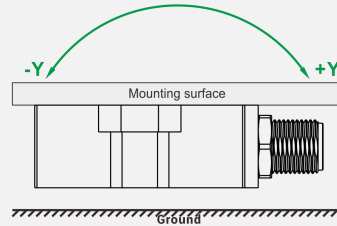
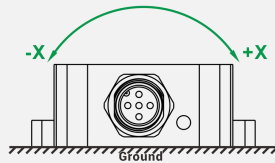


Shell Size: L64.5×W50×H18.5mm
Recommended screws: 2 M4 screws

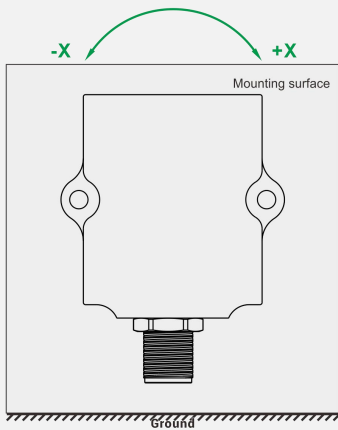
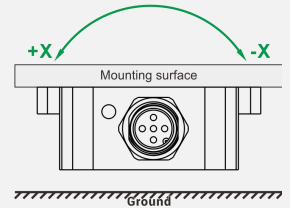
✓ Measurement direction



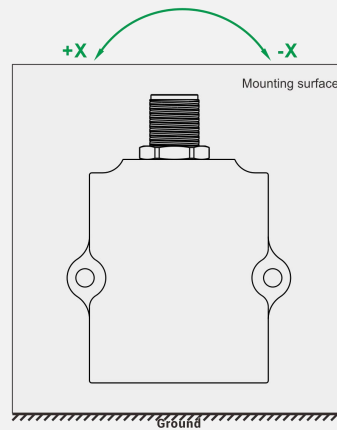
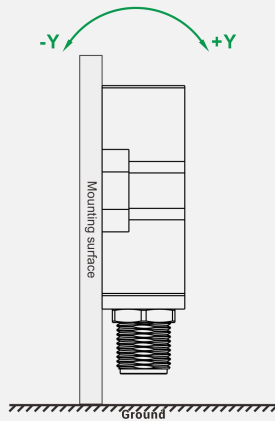
Horizontal installation



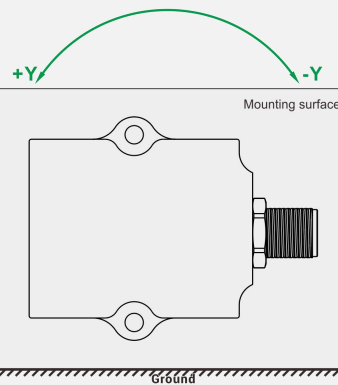
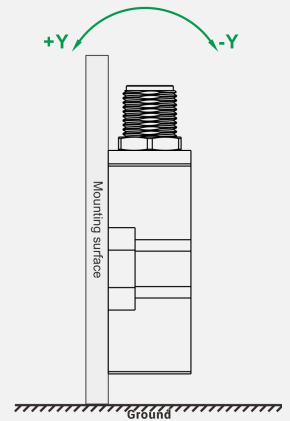
Horizontal downwards



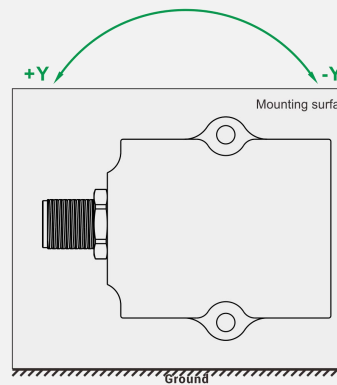
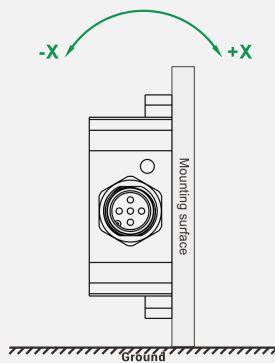
Vertical installation



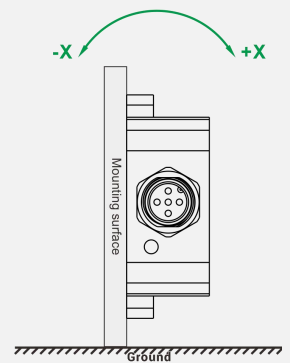
Vertically downward



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

This product outputs a DC current of 4mA to 20mA, corresponding to the minimum and maximum range of angle measurement. When calculating angles, the corresponding angle values can be obtained by allocating them proportionally;

Example: LTS6D30-A1-H: indicates that the angle range of the product is $\pm 30^\circ$, the output current is 4mA~20mA, and the proportional distribution of 0° output current is 12mA, with a sensitivity of 0.26667mA/ $^\circ$.

LTS6D0393-A1-H: This indicates that the angle range of the product is -3° to $+93^\circ$, with an input current of 4mA~20mA. The proportional distribution results in a 0-degree output current of 4.5mA and a sensitivity of 0.1667mA/ $^\circ$.

The following figure shows the output characteristic curve:

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

