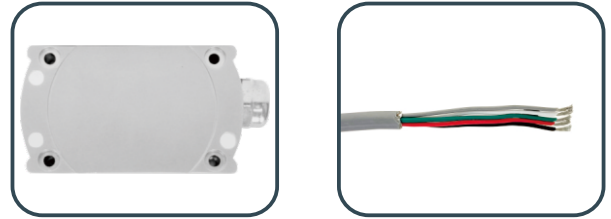
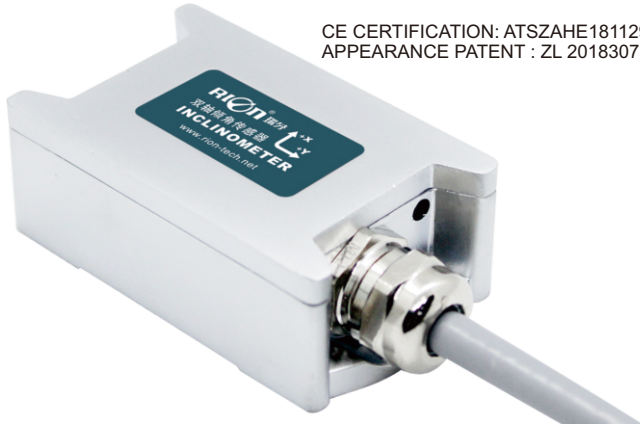


CE CERTIFICATION: ATSCZAH181129003  
 APPEARANCE PATENT : ZL 201830752891.5



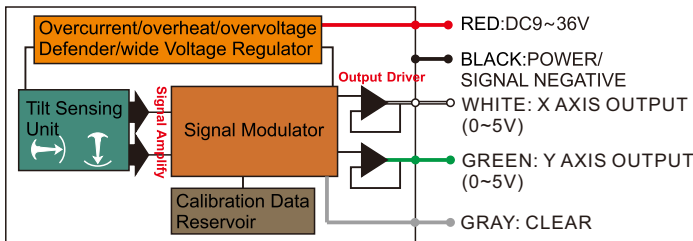
**DESCRIPTION**

MCA410/420T series tilt sensor is a new low cost tilt angle measurement product developed independently by RION. It adopts the latest anti\_interference platform design and integrates a new micro\_mechanical sensing unit. It has wide working temperature, excellent anti\_vibration and long\_term stable and reliable performance. This product adopts the non\_contact principle to measure the tilt angle. The internal capacitive micromechanical unit measures the component generated by the gravity of the earth to solve the realtime tilt angle. The installation is simple and convenient. It only needs to be fixed on the object being measured and there is no need to find fixed shaft and rotating shaft. Variety of installation methods could meet customer different measurement needs. It is an ideal sensor for construction machinery vehicles, agricultural machinery, solar tracking and other industrial equipments.

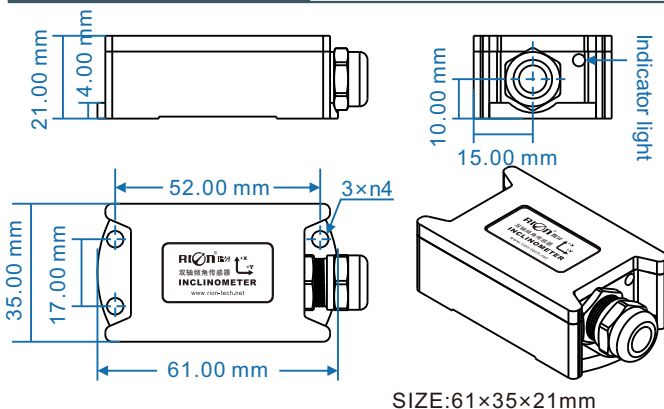
**FEATURES**

- Resolution:0.1°
- Six installation methods
- Zero set function
- IP67
- Output: 0~5V
- Power supply: 9~36V
- Work temperature:-40~+85°C
- High anti-shock>3500g

**SYSTEM DIAGRAM**



**SIZE**



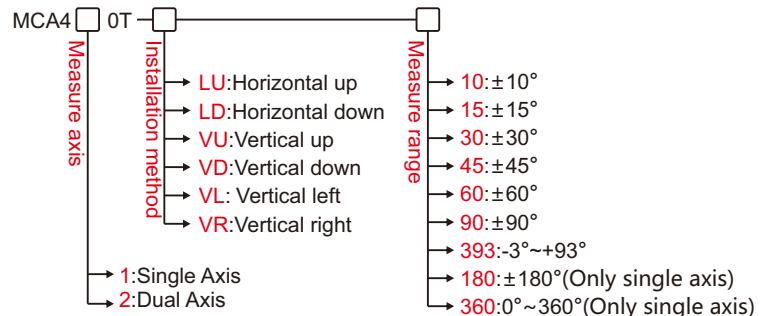
**APPLICATION**

- Agricultural machinery
- Lifting machinery
- Crane
- Aerial platform
- Solar tracking system
- Medical equipment
- Electric vehicle control

**PARAMETERS**

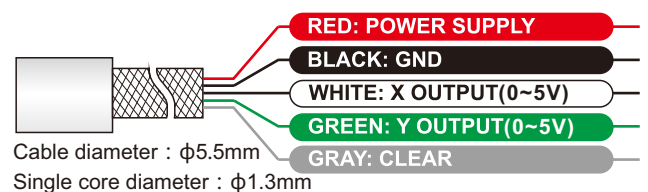
MCA410T/420T	CONDITIONS	PARAMETER	UNIT
Output Voltage	Voltage Range	0~5	V
	0° Out Put	2.5±0.1	V
Resolution		0.1	°
Accuracy	25°C	±0.3	°
Response Time		0.05	S
Temperatu Re Drift	-40°C ~ 85°C	±0.5	°
Output Load		>500 ohm	
Working Time		50000 hours/time(no fault)	
Insulation Resistance		>100 ohm	
Anti-shock		10grms、10~1000Hz	
Impact Resistance		100g@11ms,3 Axial Direction (Half Sinusoid)	
Weight		135g	
Certificate		CE ; APPEARANCE PATENT	
Quality System		GB/T19001-2016 idt ISO19001:2015 standard (Certificate No.: 128101)	

**ORDER GUIDE**

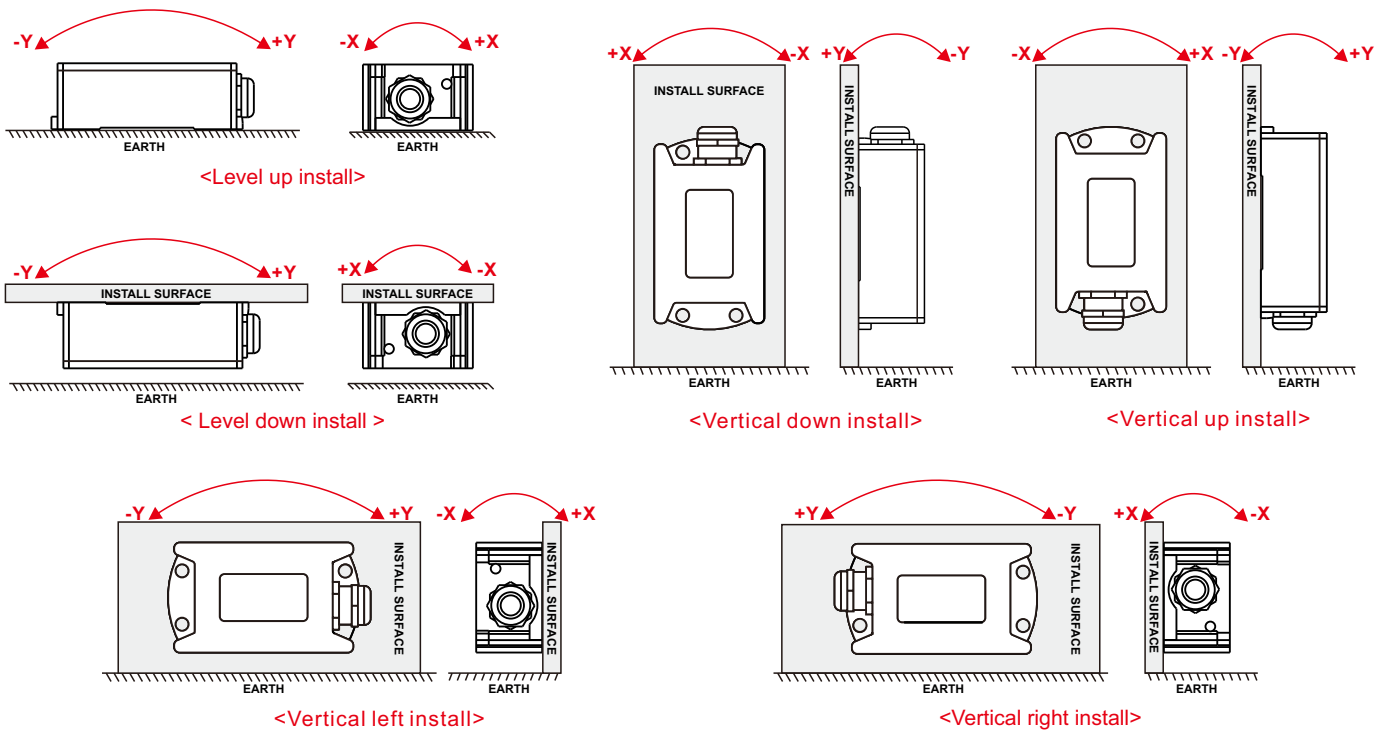


E.g: MCA410T-LU-10: Indicates Single-axis, Horizontal Up Installation Method, ±10° Measure range.

**CONNECTION**



**INSTALLATION WAY**



Remarks: The factory default installation is horizontal upward, the user can sets the corresponding installation method according to needs, please refer to Article 2 of the operating instructions, and make the corresponding settings.

**USAGE**

- 1.the working principle is sensing gravity of earth, when installation, the sensing axis of the sensor should be parallel with the tilt axis of measured object to achieve the best accuracy. the install surface of the measured object must be flat, stable, contact close, error may be caused if the installation surface is not even.
2. any side of the six sides of the sensor could be as the installation side. After installation, set current position as zero position by the zero set function, (at the same time, the installation way is set as well, the set value is stored in reservoir of the sensor. After zero set, the sensor will work and regard the current position as zero position). set steps as below: short circuit set line(grey) and GND(black) for 3 second above, the power indicator will shut off at the same time, unbind set line after power indicator flicker again, zero set finished, indicator will back to normally on status.
3. the protection class is Ip66, rain or water spray would not affect its proper work, please do not soak it under water for long time in case inner circuit would be damaged, damage caused by which is beyond warranty service
4. after installation, please do not short-circuit signal wire and power+ in case of damaging output circuit. the signal- and power- is shared by the same wire, so please connect acquisition signal- end to the power-.

**PRODUCT OUTPUT CHARACTERISTICS**

The output of this product is a DC voltage of 0V~5V, corresponding to the minimum range and maximum range of the angle measurement range. When calculating the angle, you can get the corresponding angle value by simply assigning it according to the ratio, for example: MCA420T-30-01: Indicates that the angle range of this product is ±30 degrees, and the output voltage is 0V~5V. The output voltage of 0 degrees is 2.5V and the sensitivity is 0.08333V/degree. MCA420T-0393-01: Indicates that the angle range of the product is -3 degrees to +93 degrees, the output voltage is 0V to 5V, and the output voltage of 0 degrees is proportional to 0.156V, and the sensitivity is 0.052V/degree.

The figure on the right shows the output characteristic curve:

Remarks:

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

