

Description

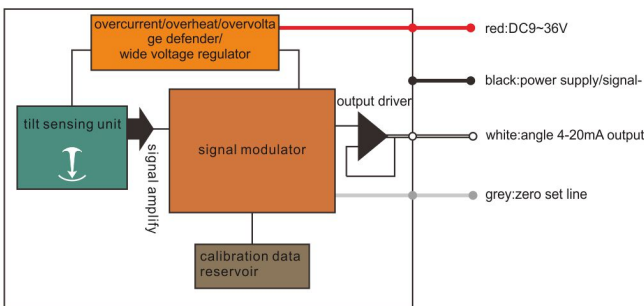
MCA418 inclinometer sensor, developed by RION technology, is a new low cost full posture tilt measurement product. the newest anti-interference design was adopted. new MEMS sensor was integrated. wide working temperature, good performance in anti-shock. long-term reliable work life as long as 10 years.

This product adopts the non-contact measuring principle, can output real-time current attitude angle, simple to use, no need to find the relative variation of the two surface for mounting. It is a ideal choice for Industrial automation control and platform measuring attitude!

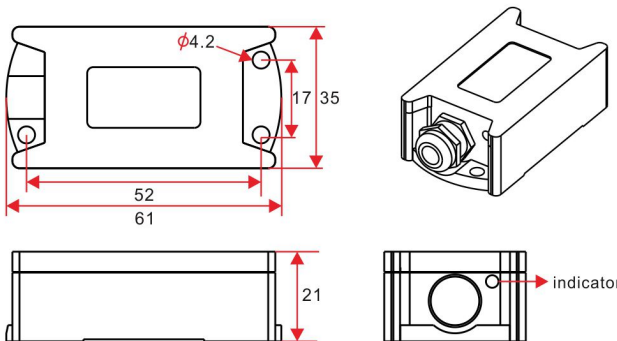
Features

- resolution: 0.1°
- six installation methods
- zero set function
- IP66
- output: 4~20mA
- power supply: 9~36V
- work temperature: 40~+85°C
- high anti-shock > 3500g

System diagram



Dimension



size: 61*35*21mm

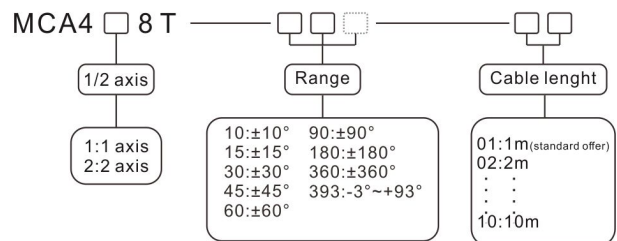
Application

- agricultural machinery
- lifting machinery
- crane
- aerial platform
- solar tracking system
- medical equipment
- electric vehicle control

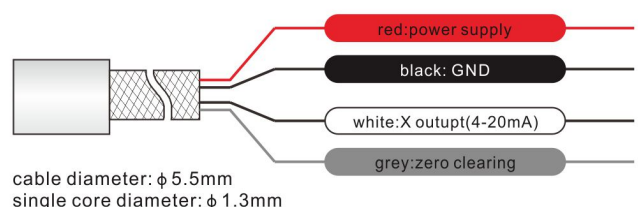
Parameters

Item	Conditions	≤±30°	≤±60°	≤±90°	≤±360°	Unit
Output current	current range	4~20	4~20	4~20	4~20	mA
	0 deg output	12±0.01	12±0.05	12±0.1	12±0.1	mA
Resolution		0.1	0.1	0.1	0.1	°
Accuracy	25°C	±0.2	±0.3	±0.5	±0.6	°
Response time		0.05	0.05	0.05	0.05	S
Temperature drift	-5~55°C	±0.5	±0.5	±0.5	±0.5	°
	-25~70°C	±0.7	±0.7	±0.7	±0.7	°
	-40~85°C	±0.8	±0.8	±0.8	±0.8	°
Output load		>500 ohm				
Working time		50000 hours/time(no fault)				
Insulation resistance		>100 ohm				
Anti-shock		10grms, 10~1000Hz				
Impact resistance		100g@11ms, times/axis(half sinusoid)				
Weight		60g				
Certificate		CE; FCC; CCC;				
Production standard		GB/T 191 SJ 20873-2003 tilt sensor, level sensor general specification				
Quality system		ISO9001:2008 standard(certificate No.:128101)				

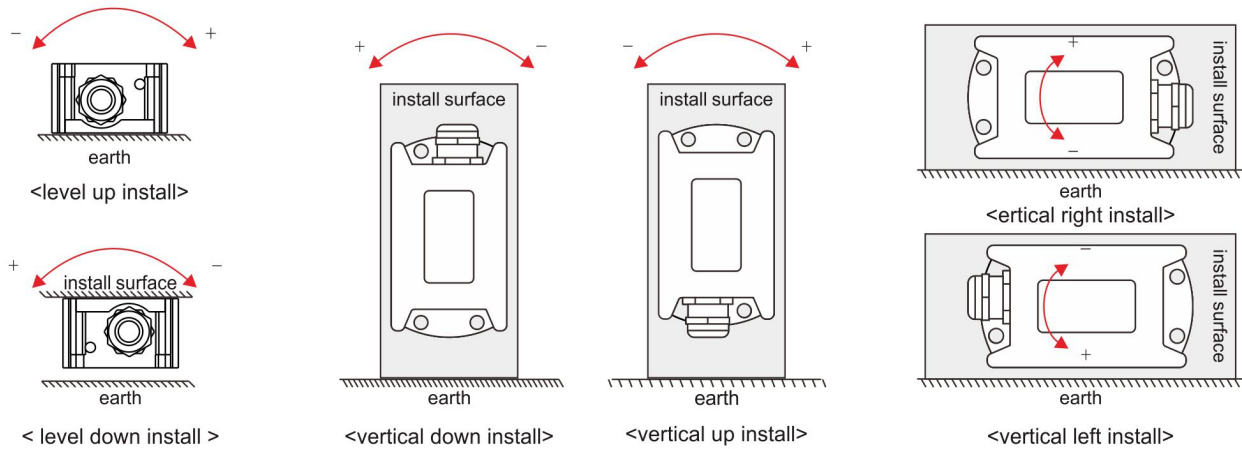
Order guide



Connection



Installation way



Note: factory default installation is level up, if other installation needed, please refer to clause 2 to set.

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-.

output features

The output of the sensor is 4mA~20mA, corresponding to the max and min measuring range, angle value could be calculated by ratio, for example;
MCA418T-30-01: indicate the measuring range is +-30 deg, output current is 4~20mA, by ratio, 0 deg output 12mA, sensitivity is 0.26667mA/deg.
MCA418T-0393-01: indicate the measuring range is -3 deg to +93deg, output current is 4~20mA, by ratio, 0 deg output 4.5mA, sensitivity is 0.1667mA/deg.
diagram on the right is the output feature curve:

note:
 $a = (\text{max range} - \text{min range}) / 2$

