Current Type Dual-axis Inclinometer

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General Description

HVT126 is an analog current output sensor. Customers can calculate the inclination of the current product through the analog current output.This product adopts imported precision MEMS micro-electromechanical technology. The product has a small size and low power consumption. The measurement range is optional.The power supply voltage is optional, the working temperature is -40 ~ 85 ℃, the product is simple to use, convenient to install, and has strong anti-interference ability. The best choice of angle controllers for industrial fields such as solar energy, wind energy engineering machinery and equipment, automation equipment (products can be customized).

Specifications

Accuracy: 0.1°   Resolution: 0.1°   Protection rating: IP67
Measuring axis: X,Y-axis   Measuring range: ±90°
Power supply voltage range: 9-35v   Output signal:4-20mA ,0~20mA
Anti-vibration performance: >2000g   Wide temperature working: -40°C ~ +85°C
Store temperature : -55°C~+100°C
Zero temperature drift (-40 ° C ~ 85 ° C): ± 0.005 °

Applications

1: Industrial automatic leveling   2: Medical equipment
3: Solar automatic tracking   4: Tower tilt monitoring
5: Lifting angle control of cranes   6: Structural deformation monitoring
7: Measuring and mapping instruments   8: Military equipment automation

Electrical parameters

Parameters	conditions	Min	Standard	Max	Unit
power supply		5	12 24	36	V
Working current		15	30	40	mA
Working temperature		-40		+85	℃
Store temperature		-55		+100	℃

Technical Data

Parameters	conditions	HVT126T-10	HVT126T-30	HVT126T-60	HVT126T-90
Measuring rang		±10°	±30°	±60°	±90°
Measuring axis		X,Y	X,Y	X,Y	X,Y
Resolution		0.1°	0.1°	0.1°	0.1°
Zero temperature coefficient	-40℃~80℃	0.01°/℃	0.01°/℃	0.01°/℃	0.01°/℃
Absolute accuracy		0.1°	0.15°	0.2 °	0.3°
Zero Position	0° Output	2.5V	2.5V	2.5V	2.5V
Power on time		<3S	<3S	<3S	<3S
Output frequency	5-100HZ	Optional	Optional	Optional	Optional
Baud rate	2400-115200	Optional	Optional	Optional	Optional
Shockproof	2000g.0.5ms、3Times/Axis(half sinusoid)				
Average no reason Obstacle time MTBF	≥800000hours/times				
Insulation resistance	≥100MΩ				
Output signal	4-20mA ,0~20mA				
Weight	100g(without cable)				

This Technical data only list ± 10 °, ± 30 °, ± 60 °, ± 90 ° series for reference, other measuring range please refer to the adjacent parameters.

Key words

Resolution：Refers to the sensor in measuring range to detect and identify the smallest changed value.

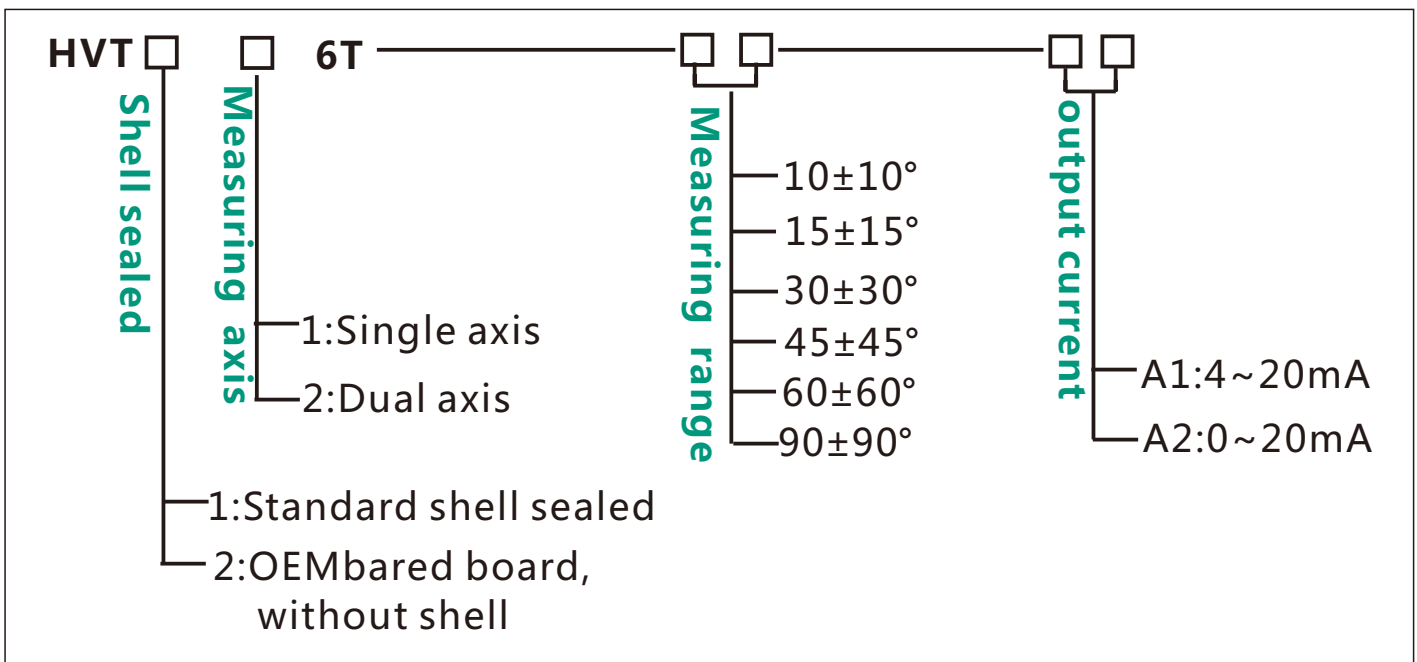Absolute accuracy：Refers to in the normal temperature circumstances,the sensor absolute linearity, repeatability, hysteresis, zero deviation, and transverse error comprehensive error.

Response time：Refers to the sensor in an angle change, the sensoroutput value reached the standardtime required.。

Mechanical Parameters

Connectors	1.2m lead cable（standard）
Protection glass	IP67
Enclosure material	Aluminum Oxide
Installation	4*M4 screws

Ordering information

HVT ☐ ☐ 6T

Shell sealed

Measuring axis
1:Single axis
2:Dual axis

Measuring range
10±10°
15±15°
30±30°
45±45°
60±60°
90±90°

output current
A1:4~20mA
A2:0~20mA

1:Standard shell sealed
2:OEMbared board, without shell

E.g：HVT **12** 6 T -**10**-**A1**：standard/single axis/±10° Measuring range /4mA-20mA output current

Electrical Connection

| Line color function	RED	BLACK	GREEN	WHITE
	DC 9~36V	GND Power Negative	Y轴	X轴
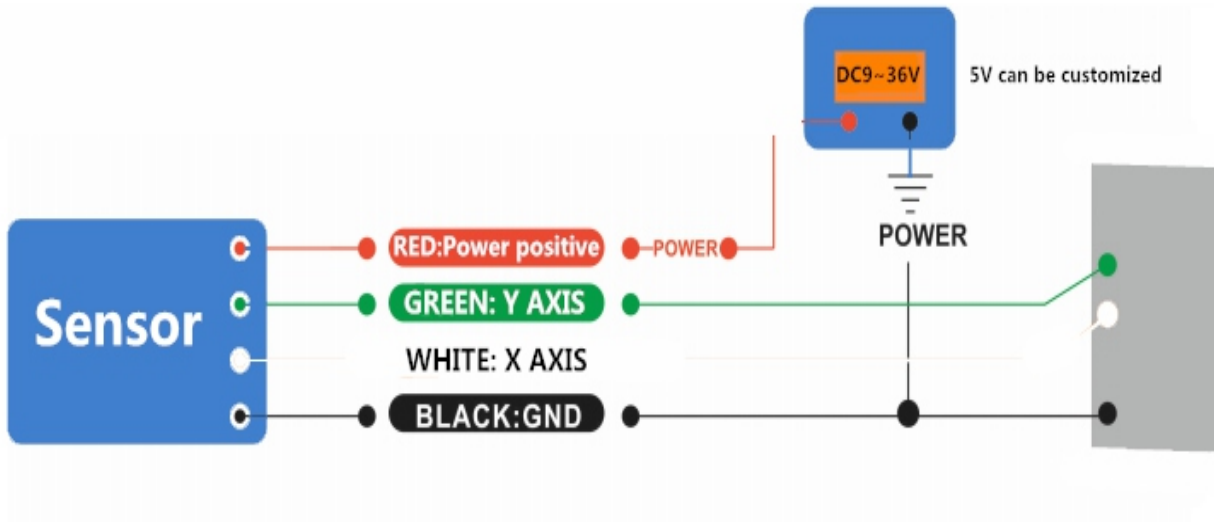
Working Principle

 Adopt the European import of core control unit, using the capacitive micro pendulum princ-iple and the earth gravity principle, when the the inclination unit is tilted, the Earth's gravity on the corresponding pendulum will produce a component of gravity, corresponding to the electric capacity will change, by enlarge the amount of electric capacity , filtering and after conversion then get the inclination.

# Product size chart
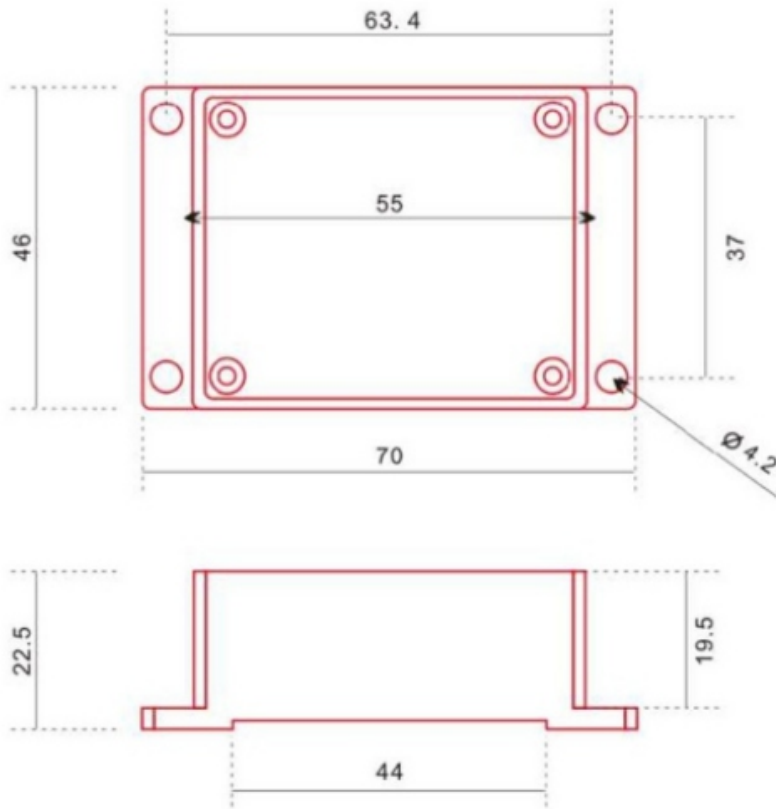
Measuring direction
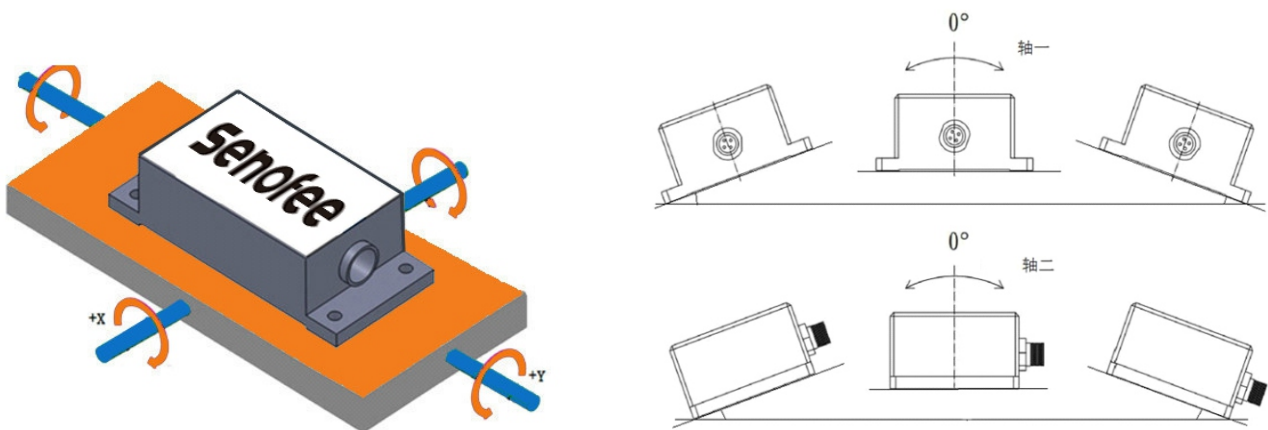
Production installation notes:

Please follow the correct way to install tilt sensor, incorrect installation can cause measurement errors, with particular attention to the "surface", "line": :

1) The Sensor mounting surface and the measured surface must be fixed closely, smoothly, stability,ifmounting surface uneven likely to cause the sensor to measure the angle error. See Figure Pic.AB

2) The sensor axis and the measured axis must be parallel ,the two axes do not produce the angle as much as possible. See Figure Pic.CD :
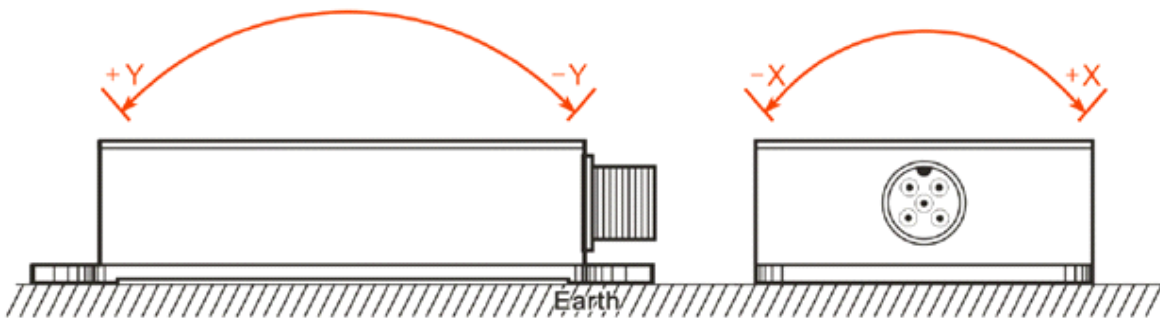
The axis of the sensor must be parallel to the axis to be measured, and the two axes should not be angled as much as possible.
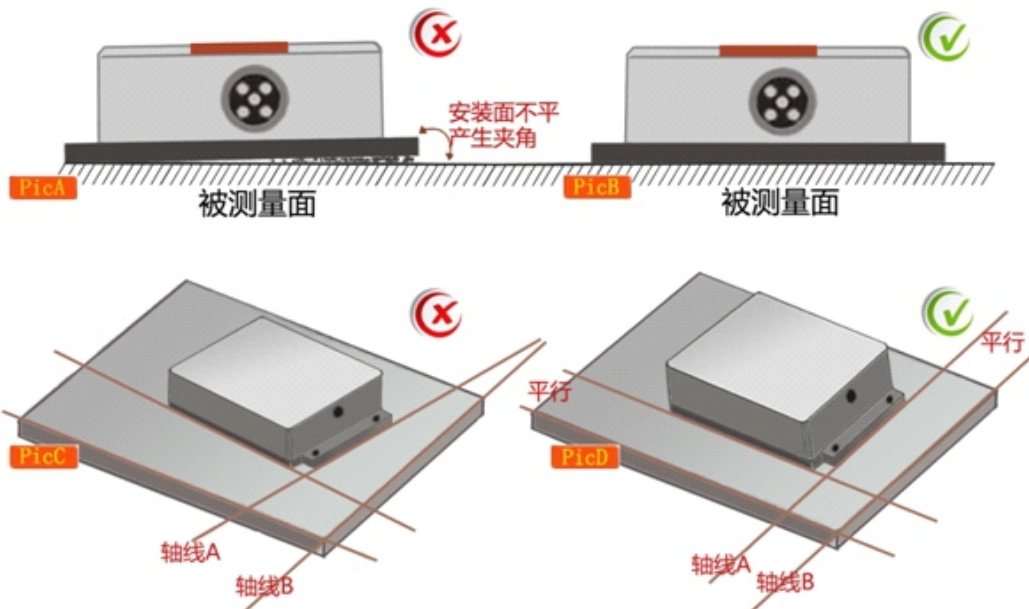
The mounting surface of the sensor must be tight, flat and stable when it is fixed to the surface to be measured.

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