

### **Product introduction**

ER-E-06 series dip angle is a small volume low cost dual-axis dip Angle sensor, and a voltage output dip angle sensor, which is mainly aimed at the application market with high restriction of volume and cost. As the latest mems tilting angle unit is built in, the volume is small, the power consumption is low, and the mems process has high consistency and stability, the working temperature reaches the industrial level of  $-40 \sim +85^{\circ}$ , which is a high cost-performance tilting module.

This product adopts the non-contact measuring principle, which can output the current attitude dip angle in real time. Small size, strong ability to resist external electromagnetic interference, strong ability to withstand shock and vibration. It is the industrial equipment, platform measurement posture ideal choice.



### **Main features**

- Dual - axis inclination measurement
- Range of  $\pm 0^{\circ} \sim + 90^{\circ}$  is optional
- Accuracy: refer to performance table
- Wide voltage input 9 ~ 36V
- Output mode is 0 ~ 5V
- High temperature working  $-40 \sim +85^{\circ}\text{C}$
- IP67Protection grade
- High vibration resistance  $>3500\text{g}$
- High resolution  $0.1^{\circ}$
- Small volume  $55 \times 37 \times 24\text{mm}$  (Can be customized)

### **Product application**

- Electric blind chair leveling
- Chassis measurement
- Yuntai operation monitoring
- Four-wheel positioning system
- Satellite antenna positioning
- Various engineering machinery Angle control
- Leveling of medical equipment

### **Product performance index**

Parameter	Conditions	ER-E-06-10	ER-E-06-30	ER-E-06-60	ER-E-06-90	Unit
Range of measurement		±10	±30	±60	±90	°
Measurement axis		X Y	X Y	X Y	X Y	
Zero output	0°Output	2.5	2.5	2.5	2.5	V
Resolution ratio		0.1	0.1	0.1	0.1	°
Absolute precision		0.1	0.2	0.3	0.4	°
Long-time stability		<0.5	<0.5	<0.5	<0.5	°
Zero temperature coefficient	-40~85°C	±0.02	±0.02	±0.02	±0.02	°/°C
Temperature coefficient of sensitivity	-40~85°C	≤150	≤150	≤150	≤150	ppm/°C
Power on start time		0.5	0.5	0.5	0.5	S
The response time		0.02	0.02	0.02	0.02	s
Response frequency		1~20	1~20	1~20	1~20	Hz
Electromagnetic compatibility	According to EN61000 and GBT17626					
MTBF	≥45000 H/T					
Insulation resistance	≥100 M					
Impact resistant	100g@11ms、Three axis and with(A half sine wave)					
Anti-Vibration	10grms、10~1000Hz					
Waterproof level	IP67					
Cable	Standard 1 m length, wear - resistant, oil - proof, wide temperature, shielded cable 4*0.4mm <sup>2</sup>					

Weight	90g(not include cabe)
--------	--------------------------

#### Electrical parameters of products

Parameter	Conditions	Minimum	Typical	Maximum	Unit
The power supply voltage	Standard	9	12、24	36	V
	Options		5		V
Working current			50		mA
Output load	Resistivity	10			kΩ
	Capacitive Character			20	nF
Working temperature		-40		+85	°C
Storage temperature		-55		+125	°C

#### Product mechanical parameters

- Connector: 1m straight leads (customizable)
- Protection class: IP67
- Material: aluminum alloy grinding sand oxidation
- Installation: three M4 screws

#### Operating principle

The core control unit imported from Europe is adopted. Using the principle of earth gravity, when the inclined Angle unit is tilted, the earth gravity will produce the component of gravity in the corresponding pendulum hammer, and the corresponding capacitance will change. Through amplification, filtering and transformation of the capacitance, the inclination can be obtained.