

## Product introduction

ER-E-05 series dip Angle is a small volume MEMS single-axis dip angle sensor. The output current is corrected by internal quadratic linearity. LCA318T series dip Angle sensor is a linear current output dip angle sensor, which is mainly targeted at the application market with high restriction of volume and cost. With the latest mems tilting angle unit built in, the product volume is small, the long-distance transmission can reach more than 2000 meters, the anti-external electromagnetic interference ability is strong, and can adapt to the long-term work in the harsh industrial environment.

This product adopts the non-contact method to measure the original quantity, which can output the current attitude inclination angle in real time. Is the industrial automation control, platform measurement posture ideal choice.



## Main features

- Single shaft dip measurement
- Range  $\pm 10 \sim + 90^\circ$  is optional
- Accuracy: refer to performance table
- DC9 ~ 36V power supply
- Output way 4~20mA
- High temperature work  $-40 \sim +85^\circ\text{C}$
- IP67 Protection grade
- High vibration resistance  $>3500\text{g}$
- resolution ratio  $0.1^\circ$
- Small volume  $55 \times 37 \times 24\text{mm}$  (Can be customized)

## Product application

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

### Product performance index

Parameter	Conditions	ER-E-05-30	ER-E-05-60	ER-E-05-90	ER-E-05-360	Unit
Range of measurement		±30	±60	±90	0~360	°
Measurement axis		X	X	X	X	
Zero output	0°Output	12	12	12	12	mA
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 cable)

#### 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	400		1000	kΩ
Working temperature		-40		+85	℃
Storage temperature		-55		+125	℃

#### Product mechanical parameters

Connectors: 1m straight leads (customizable)

Protection class: IP67

Shell 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.