

## Product introduction

The ER-E-07 series is a new generation of digital small volume MEMS dip sensor, which is equipped with dual-channel earth gravity tilt unit, which is converted into dip change by measuring static gravity acceleration. Therefore, the sensor output can be measured relative to the horizontal tilt and pitch Angle. Output mode RS232, RS485 or TTL level interface standard is optional. Due to the built-in MCU control system, the linearity of the sensor output is corrected twice, which makes up for the loss of accuracy caused by insufficient correction of the analog type.

This product adopts the non-contact method to measure the original quantity, which can output the current attitude Angle in real time. It is an ideal choice for industrial automation control and platform measurement. It has strong ability to resist external electromagnetic interference and can adapt to long-term work in harsh industrial environment. The product is mainly suitable for dynamic measurement of static and slow changes, but not for dynamic measurement of rapid changes.



## Main features

- Dual - axis inclination measurement
- Range of plus or minus 0 ° ~ + 90 ° is optional
- Long-term stability 0.2°
- DC3.6-7V Input
- Output way RS232、RS485、TTL
- wide range of temperature-40~+85°C
- IP67 Protection grade
- High vibration resistance>3500g
- High resolution 0.1°
- Small volume 55×37×24mm (Can be customized)

## Product application

- Electric blind chair leveling
- Yuntai operation monitorin
- Satellite antenna positioning
- Leveling of medical equipmen
- Chassis measurement
- Four-wheel positioning system

- Various engineering machinery Angle control

**Product performance index**

Parameter	Conditions	ER-E-07-10	ER-E-07-30	ER-E-07-60	ER-E-07-90	Unit
Range of measurement		±10	±30	±60	±90	°
Measurement axis		X Y	X Y	X Y	X Y	
Resolution ratio		0.1	0.1	0.1	0.1	°
Absolute accuracy		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
Output rate	5Hz、15Hz、35Hz、50Hz、100HZ Can be set up (RS485 Without this feature)					
Output signal	RS232/RS485/RS422/TTL/PWM/CAN/MODBUS Can order					
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*0.4mm2
Weight	90g(not include cable)

### Electrical parameters of products

Parameter	Conditions	Minimum	Typical	Maximum	Unit
The power supply voltage	Standard	3.6	5	7	V
	Can be customized		9-36v		V
Working current	No load		40		mA
Working temperature		-40		+85	°C
Storage temperature		-55		+100	°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.