

Product presentation

ER-B-04 is a high precision analog voltage output dual-axis tilt sensor, small scale highest precision can reach 0.003° , is one of the few domestic high precision inclinometer. Its function is mainly used to measure the inclination of the object and the horizontal plane. The built-in micro solid pendulum hammer is used to measure the change of static gravity field, which is converted into the change of inclination Angle, and the change is output through voltage (0-5v). High resolution differential digital-analog converter is adopted internally to correct the quadratic linearity and temperature through the internal MCU system. The customer does not need to make the quadratic linearity correction again, which also reduces the error caused by environmental changes to the product accuracy. This product adopts the non-contact method to measure the original quantity, which can output the current attitude inclination angle in real time. The latest MEMS high technology production, high precision, small volume, strong resistance to external electromagnetic interference, strong bearing shock and vibration capacity. Is the industrial equipment, platform measurement posture ideal choice!



Main Features

- Dual-axis inclination measurement
- Range $\pm 1^\circ \sim \pm 90^\circ$ for optional
- Accuracy: refer to performance table
- Wide Input Range 9~36V
- IP67 level of protection
- Output mode 0~5V
- High vibration resistance $>2000g$
- Wide range of temperature $-40 \sim +85^\circ\text{C}$
- High resolution 0.001°
- Minute extension $L90\text{mm} \times W50\text{mm} \times H33\text{mm}$ (customizable)

Product application

- Leveling of engineering vehicles
- Bridge and dam monitoring
- High altitude platform safety protection
- Medical device Angle control
- Attitude navigation of underground drill
- Railway gauge scale and gauge level

- Directional measurement based on dip Angle
- Slope monitoring of geological equipment
- Measurement of pitch Angle of directional satellite communication antenna
- Mining machinery, oil drilling equipment
- Equipment level control
- Alignment control, bending control

Performance

Parameter	Condition	ER-B-04-10	ER-B-04-30	ER-B-04-60	ER-B-04-90	Unit
Range		±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		0.001	0.001	0.001	0.001	°
Absolute precision	@25°C	0.005	0.01	0.02	0.05	°
Long term stability		0.01	0.02	0.05	0.08	°
Zero point temperature coefficient	-40~85°	±0.002	±0.002	±0.002	±0.002	°/°C
Sensitivity temperature coefficient	-40~85°	≤50	≤50	≤50	≤100	ppm/°C
Power on start time		0.5	0.5	0.5	0.5	S
Response time		0.02	0.02	0.02	0.02	s
Response frequency		1~20	1~20	1~20	1~20	Hz
Electromagnetism capacity	According to EN61000 and GBT17626					

MTBF	≥50000 Hours/time
Insulation resistance	≥100 M
Shock resistance	100g@11ms、Sum of three axes (half sine wave)
Anti-Vibration	10grms、10~1000Hz
Waterproofing grade	IP67
Cable	Standard 1 m length, wear-resistant, wide temperature, shielded cable 4*0.4mm ² air connector
Weight	150g(No cable)

The performance parameters of the list only ±10°、±30°、±60°、±90° series for reference, other measuring range in the adjacent parameters for please reference.

Electrical parameters of products

Parameter	Condition	Min	Typical value	Max	Unit
Power Supply	Standard	9	12、24	36	V
Working current			40		mA
Output load	Resistivity	10			kΩ
	Capacitive character			20	nF
Operating temperature		-40		+85	℃
Storage temperature		-55		+100	℃