

Introduction

ER-EC37B is a high accuracy 3D digital compass of strip shape, its length is only 1.6cm, IP67 protection grade, suitable for many harsh environment such as drilling measurement. It adopts advanced hard iron and soft iron calibration algorithm, it can provide the high-precision heading value output when both pitch and roll angle at any angle within 360. It is small and low power consumption, suitable for current miniaturization sensitive measurement system. Sealed complete item and signal board are available. ER-EC37B integrated patented three-axis flux-gate technology. It calculates heading value in real-time by CUP, and perform heading value compensation in wide tilt range by using three-axis accelerometer. It is high performance and excellent stability military level compass sensor. Its volume is small, power consumption is low. It could widely used in many application such as antenna installation, vehicle and integrated system, and so on.



Main characteristics

- Azimuth accuracy: $0.3^{\circ}\sim 0.5^{\circ}$
- Inclination measurement range: $\pm 180^{\circ}$
- Inclination resolution: 0.1°
- Inclination accuracy: $<0.2^{\circ}$ (full scale)
- Wide temperature range: $-40^{\circ}\text{C}\sim +85^{\circ}\text{C}$
- Size: $L110\times W19.5\times H19.5\text{mm}$
- With hard magnetic, soft magnetic and tilt compensation output interface
- Standard RS232/RS485/TTL

Applications

- Satellite antenna search star
- Artillery launch system
- ROV underwater robot navigation
- Navigation navigation mapping

- GPS integrated navigation
- Antenna servo control
- Infrared imager Laser rangefinder
- Map filler
- Oceanology tester
- Special occasion robot
- Unmanned aerial vehicle

Product electrical parameters

ER-EC37B performance parameter indicator		
Compass heading parameter	Optimum heading accuracy	0.5° oblique<10°
		2.0° oblique>60°
	Resolution	0.1°
Compass inclination parameter	Pitch accuracy	0.1°<15° (Measuring range)
		0.1°<30° (Measuring range)
		0.1°<60° (Measuring range)
		0.2°<90° (Measuring range)
	Pitch oblique range	±85°
	Roll accuracy	0.1°<15° (Measuring range)
		0.1°<30° (Measuring range)
		0.1°<60° (Measuring range)
		0.2°<90° (Measuring range)
	Roll oblique range	±85°
Resolution	0.1°	
Calibration	Hard iron calibration	Have
Physical	Soft iron calibration	Have

characteristics	Magnetic field interference calibration method	Rotate 360 degrees horizontally; vertical rotation (optional)
	size	L110×W19.5×H19.5mm
	weight	20 g
	RS-232/RS485/TTL interface connector	5PIN connection terminal
Interface characteristics	Start delay	<50 ms
	Maximum output rate	20Hz/s
	Communication rate	2400~ 19200baud
	Output format	Binary high performance protocol
Power supply	Supply voltage	(default) DC +5V
	Current (maximum)	30mA
	Ideal mode	26mA
	Sleep mode	TBD
Surroundings	Operating range	-40℃~+85℃
	Storage temperature	-40℃~+100℃
	Anti-vibration performance	100g
	Protective performance	IP67
Electromagnetic compatibility	According to EN61000 and GBT17626	
Mean time between failures	≥40000 hours/time	
Insulation resistance	≥100 MΩ	
Impact resistance	100g@11ms, three axes and the same (half sine wave)	
Vibration resistant	10grms、 10~1000Hz	
Weight	80g (without cable)	

