

product description

The ER-EC32B is a high-precision 3D electronic compass that uses a 2D planar calibration algorithm. Calibration eliminates the need for three-dimensional attitude tilting, and the calibration process is completed by simply rotating the plane one turn. Using the hard magnetic and soft magnetic calibration algorithms of the US patent technology, the compass can achieve the best effect through the three-dimensional calibration method in the environment with magnetic interference. The ER-EC32B integrates the three-axis fluxgate sensor and is real-time through the central processing unit. Solving heading and using a three-axis accelerometer to compensate for heading over a wide range of tilt angles, ensuring that the compass provides high-precision heading data at tilt angles up to $\pm 85^\circ$. The electronic compass integrates high-precision MCU control and diversified output modes. The standard interface includes RS232/RS485/TTL interfaces, and other communication interfaces can be customized.

ER-EC32B is small in size, low in power consumption, and can be applied in many fields such as antenna stabilization, vehicle and system integration. High shock resistance and high reliability also make the compass work in extremely harsh environments, which is more suitable for today's small Chemical military high precision measurement integrated control system.



Main characteristics

- Azimuth accuracy: $0.5^\circ \sim 0.8^\circ$
- Inclination measurement range: $\pm 85^\circ$
- Inclination resolution: 0.1°
- Inclination accuracy: 0.1°
- Wide temperature range: $-40^\circ\text{C} \sim +85^\circ\text{C}$
- Size: $L60 \times W59 \times H33\text{mm}$
- With hard magnetic, soft magnetic and tilt compensation output interface
- Standard RS232/RS485/TTL
- DC 5V power supply
- IP67 waterproof rating

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-EC32B performance parameter indicator		
Compass heading parameter	Optimum heading accuracy	0.5° oblique<10°
		1.0° oblique<30°
		2.0° oblique<40°
		2.5° oblique<70°
	Resolution	0.1°
Compass inclination parameter	Pitch accuracy	0.1°<15° (Measuring range)
		0.2°<30° (Measuring range)
		0.3°<60° (Measuring range)
		0.3°<85° (Measuring range)
	Pitch oblique range	±85°
	Roll accuracy	0.1°<15° (Measuring range)
0.2°<30° (Measuring range)		

		0.3°<60° (Measuring range)
		0.3°<85° (Measuring range)
	Roll oblique range	±85°
	Resolution	0.1°
	Compass tilt optimal compensation angle range	<40°
calibration	Hard iron calibration	Have
	Soft iron calibration	Have
	Magnetic field interference calibration method	One rotation of the plane (two-dimensional calibration)
Physical characteristics	size	L60×W59×H33mm
	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
		(custom) DC 9 ~ 36V
	Current (maximum)	45mA
	Ideal mode	35mA
	Sleep mode	TBD
surroundings	Operating range	-40℃~+85℃
	Storage temperature	-40℃~+100℃
	Anti-vibration performance	2500g
Electromagnetic compatibility	According to EN61000 and GBT17626	

MTBF	≥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	100g (without cable)

Product size chart

