

MEMS Inertial Navigation System

ER-MGI210 / 230 Closely Integrated Navigation System



ER-MGI210/230 Closely integrated navigation system can provide horizontal attitude, heading attitude and other information, longitude, latitude, altitude, positioning information, the 3D acceleration, angular velocity inertial measurement information and etc. By extending the range of the mileage meter and the height of the barometer, it further improves the accuracy and applicability of the system and it can be widely used in unmanned aerial vehicles, vehicle navigation, aviation and platform stability control and other fields.

ER-MGI230 , with high accuracy and high dynamic GPS receiver as the satellite signal sensor, use carrier phase differential technique and fast calculation of the whole week ambiguity technology. It can accurately calculate the azimuth angle of the carrier motion, inertial measurement technology aided attitude determination navigation. When the GPS signal interferences , by maintaining the inertial measurement unit within a period of time, system can still output high precision data.

ER-MGI230 overcomes the deficiency of a single device, give full play to the GPS high precision, with no accumulation error, no drift, low price and inertial products good dynamic performance, strong anti-interference ability. Without the need of external signal source, it is able to work and Improve the overall attitude measurement accuracy, navigation accuracy and real-time tracking performance of the system. The proof in the land, sea and air a variety of environmental test, heading accuracy of 0.1 degrees, roll and pitch accuracy 0.05 degrees, and effectively overcome the drift angle of heading error. It is multi system compatible and complement each other, mutual backup all-weather high reliability azimuth measurement products. Especially for satellite communication vehicle,

meteorological radar vehicle, warship, expedition ship, airship, UAV, fire control system, command and control system, weapon aiming system, have very strong competitiveness.

Systematic Name	MGI210	MGI230		ER-MGI210	ER-MGI230
Performance Indicators			Gyroscope		
Heading	≤ 1.0 deg (1σ)	≤ 0.3 deg (1σ)	Range	± 100 deg/s	± 400 deg/s
Horizontal Attitude(Roll And Pitch)	≤ 0.5 deg (1σ)	≤ 0.2 deg (1σ)	Bias Stability	≤ 0.05 deg/s	≤ 10 deg/h
Horizontal Position	2.5 m CEP	2.5 m CEP	Bias Repeatability	≤ 0.05 deg/s	≤ 10 deg/h
Elevation	4 m CEP	4 m CEP	Accelerometer		
Speed	≤ 0.2 m/s (1σ)	≤ 0.1 m/s (1σ)	Range	± 10 g(customizable)	± 10 g
Interface Features			Bias Stability	≤ 0.1 mg	≤ 0.1 mg
Voltage	9~36 Vdc	9~36 Vdc	Bias Repeatability	≤ 0.2 mg	≤ 0.2 mg
Power Consumption	≤ 3.5 W @ 12 VDC	≤ 4 W @24Vdc	GNSS		
Electrical Interface	RS232/RS422	RS422			
Data Update Rate	100 Hz @ 115,200 bps	100 ~ 200Hz	GNSS Features	16 Channel, GPS L1 Frequency Point	16 Channel GPS L1, BD B1
Operating Environment			Positioning Time	≤ 60 s	≤ 60 s
Operating Temperature	-40° C ~ $+85^{\circ}$ C		Typical Recapture Time	≤ 10 s	≤ 10 s
Storage Temperature	-55° C ~ $+85^{\circ}$ C				
Vibration	6 g @ 20~2000 Hz				
Shock	30 g, 11 ms, 1/2 Sine				
Physical Property					
Physical Size	68.8×68×70 mm	86.8×68×87 mm			

Weight	$\leq 500 \text{ g}$	$\leq 500 \text{ g}$			
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