

## **ER-MINS-210/230 MEMS Inertial Navigation System**

### **Introduction**

ER-MINS-210/230 MEMS Inertial Navigation System, 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.

### **Features**

ER-MINS-210/230 MEMS Inertial Navigation System overcomes the deficiency of a single device, gives 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.

## Application

ER-MINS-210/230 MEMS Inertial 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.

## Specifications

Systematic Name	ER-MINS-210	ER-MINS-230
<b>Performance Indicators</b>		
Heading	$\leq 1.0$ deg ( $1\sigma$ )	$\leq 0.3$ deg ( $1\sigma$ )
Horizontal Attitude (Roll and Pitch)	$\leq 0.5$ deg ( $1\sigma$ )	$\leq 0.2$ deg ( $1\sigma$ )
Horizontal Position	2.5 m CEP	2.5 m CEP
Elevation	4 m CEP	4 m CEP
Speed	$\leq 0.2$ m/s ( $1\sigma$ )	$\leq 0.1$ m/s ( $1\sigma$ )
<b>Gyroscope</b>		
Range	$\pm 100$ deg/s	$\pm 400$ deg/s
Bias Stability	$\leq 0.05$ deg/s	$\leq 10$ deg/h
Bias Repeatability	$\leq 0.05$ deg/s	$\leq 10$ deg/h
<b>Accelerometer</b>		
Range	$\pm 10$ g (customizable)	$\pm 10$ g
Bias Stability	$\leq 0.1$ mg	$\leq 0.1$ mg
Bias Repeatability	$\leq 0.2$ mg	$\leq 0.2$ mg
<b>GNSS</b>		

GNSS Features	16 Channel, GPS L1 Frequency Point	16 Channel GPSL1, BD B1
Positioning Time	≤ 60 s	≤ 60 s
Typical Recapture Time	≤ 10 s	≤ 10 s
<b>Interface Features</b>		
Voltage	9~36 Vdc	9~36 Vdc
Power Consumption	≤ 3.5 W @ 12 VDC	≤4W @24Vdc
Electrical Interface	RS232/RS422	RS422
Data Update Rate	100 Hz@115,200 bps	100~200Hz
<b>Operating Environment</b>		
Operating Temperature	-40° C~+85° C	
Storage Temperature	-55°C~+85° C	
Vibration	6 g @ 20~2000 Hz	
Shock	30g, 11ms, 1/2Sine	
<b>Physical Property</b>		
Physical Size	68.8×68×70 mm	86.8×68×87 mm
Weight	≤500g	≤500g