

INS622-2A

Automotive grade MEMS INS



INS622-2A is a standard vehicle-mounted INS, which integrates a tactical-grade 6-axis MEMS inertial measurement measurement, a high-precision GNSS positioning module with RTK function, and a vehicle-mounted odometer to realize integrated navigation. It can provide real-time combined position, attitude, and speed information in various harsh environments, and can also provide information such as acceleration and angular velocity. It has the characteristics of small size, low weight and high cost performance. It is applicable to various carriers such as airborne, shipborne and vehicle-mounted, and the output protocol can be customized according to the customer's needs.

ADVANTAGES

- Functional safety design conforming to vehicle regulations Combined navigation-level software and hardware functional safety design ensures high short-term navigation accuracy after satellites are lost , GPS L1/L2, GLONASS L1/L2, GALILEO E1/E5b and other satellite signals, support multiple configurations such as single-antenna positioning/du-al-antenna orientation, etc. calibration function.

APPLICATION FIELDS

- Unmanned mincart, Unmanned ship
- Unmanned driving, automatic driving
- Stable platform (airborne, vehicle-mounted, ship-mounted, mobile communication)

INS622-2A TECHNICAL PARAMETers

GNSS technical parameters					
RTK Positioning Accuracy	Flat Elevation	RMS	$\leq 1\text{cm} + 1\text{ppm}(1\sigma)$ $\leq 1.5\text{cm} + 1\text{ppm}(1\sigma)$		
Support satellite system	BDS: B1/B2; GPS: GPL1/L2; GLONASS: 1/L2; GALILEO: E1/E5b				
IMU technical parameters					
IMU	Parameter		X	Y	Z
	Gyros	Type	MEMS	MEMS	MEMS
		Range	$\pm 400^\circ/\text{s}$	$\pm 400^\circ/\text{s}$	$\pm 400^\circ/\text{s}$
		Bias stability (1 σ)	$\leq 10^\circ/\text{h}$	$\leq 10^\circ/\text{h}$	$\leq 10^\circ/\text{h}$
		Angular random walk	$\leq 0.5^\circ/\sqrt{\text{h}}$	$\leq 0.5^\circ/\sqrt{\text{h}}$	$\leq 0.5^\circ/\sqrt{\text{h}}$
		Scale Factor Nonlinearity	$\leq 100\text{ppm}$	$\leq 100\text{ppm}$	$\leq 100\text{ppm}$
	Accelerometer	Type	MEMS	MEMS	MEMS
		Range	$\pm 6\text{g}$	$\pm 6\text{g}$	$\pm 6\text{g}$
		Bias stability (1 σ)	$\leq 200\mu\text{g}$	$\leq 200\mu\text{g}$	$\leq 200\mu\text{g}$
		Rate random walk	$\leq 50\text{mm}/\text{s}/\sqrt{\text{h}}$	$\leq 50\text{mm}/\text{s}/\sqrt{\text{h}}$	$\leq 50\text{mm}/\text{s}/\sqrt{\text{h}}$
		Scale Factor Nonlinearity	$\leq 200\text{ppm}$	$\leq 200\text{ppm}$	$\leq 200\text{ppm}$
	Navigation Technical Parameters				
Navigation		Satellite lock accuracy (2 σ)			
Horizontal position (RMS)	0.3%	Fusion wheel speed navigation accuracy (1km or 2min)	0.3%		
Elevation position (RMS)	0.8%(Elevation error/horizontal distance)		0.8%(Elevation error/horizontal distance)		
Horizontal speed (RMS)	$\leq 0.03\text{m}/\text{s}$		0.1m/s		
Height Velocity (RMS)	$\leq 0.05\text{m}/\text{s}$		0.1m/s		
Attitude Accuracy (STD)	$\leq 0.1^\circ$		0.1 $^\circ$		
Heading Accuracy (STD)	$\leq 0.15^\circ$	0.15 $^\circ$			
Physical parameters					
Size	116x100x36 (mm)				
Weight	$\leq 400\text{g}$				
Operating temperature	$-40^\circ\text{C} \sim 85^\circ\text{C}$				
Power supply and power consumption	9 V ~ 36V DC power consumption < 10W (rated voltage 12V)				
Data update rate	200 Hz				