

Miniature Inertial Navigation System

INNALABS[®] ***MiniINS***

Datasheet

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Innalabs' miniINS is a strap-down high-performance inertial navigation system composed of an Attitude & Heading Reference system and GPS Navigation Module. AHRS' Pitch, Roll, and Heading information combined with real-time GPS position and velocity data provide user with high-accuracy data for navigation, guidance, control, and stabilization purposes.

The miniINS-I delivers **6m Position Accuracy** and **0.4° Heading Accuracy** under dynamic conditions. It is designed for use in manned and unmanned aircrafts, land vehicles, various platforms, etc.



Technical parameters

Parameter	Unit	Value	
		With GPS	Without GPS
Warm up time	sec	<30	
Output frequency	Hz	100	
Position / Velocity			
Position	m	6	300 (during 3 minutes GPS outage)
Velocity (linear)	m/sec	0.2	5 (during 3 minutes GPS outage)
Velocity (vertical)	m/sec	0.25	0.5
Heading			
Range	deg	±180	
Accuracy	deg	0.4	<0.8 (magnetic heading)
Attitude			
Pitch measurement range	deg	±90	
Roll measurement range	deg	±180	
Pitch & Roll linear motion	deg	0.1 – 0.2	0.2 – 0.4
Pitch & Roll maneuvering*	deg	0.2 – 0.4	0.4 – 0.7
Gyroscopes			
Measurement range	deg/sec	±300	
Bias stability in temperature range	deg/sec	0.1 - 0.5	
Accelerometers			
Measurement range	g	±2...±16	
Bias stability in temperature range	mg	2 - 5	
Environment			
Operating temperature range	deg C	-40 ... +70	
Storage temperature range	deg C	-40 ... +85	
Humidity	%	5 ... 95	
Shock	g, msec	40g, 5msec	
Vibration	g, Hz	20g (20 ... 2000Hz)	
Electrical			
Voltage Consumption	V	9 ... 36	
Power Consumption	W	<1.2	
Interface	RS	RS-422	
Physical			
Size	mm	80*55*23	
Weight	grams	95	

* – Pitch & Roll maneuvering means dynamic motion of small and middle size UAV.

