

Innalabs[®]

Inertial Navigation System

Dual GPS

INN-501-3

Datasheet

November, 2009

This document contains information proprietary to Innalabs[®]

The **Innalabs**[®] **INN-501-3 INS** is an inertial navigation system composed of GPS-aided Attitude & Heading Reference system and Dual GPS Navigation Module. AHRS' Pitch, Roll, and Heading information combined with real-time GPS position and velocity data provide user with high accurate data for navigation, guidance, control, and stabilization purposes. The **INN-501-3 INS** delivers better than 2.0 m Position Accuracy and 0.2° Heading Accuracy under dynamic conditions.

It is designed for use in unmanned aircrafts, land vehicles, various platforms, and others.

Features

- High Stability Solid-state Sensors
- Dual GPS receiver
- Kalman Filter Algorithm
- EMI & Vibration Resistant
- Environmentally Sealed

Applications

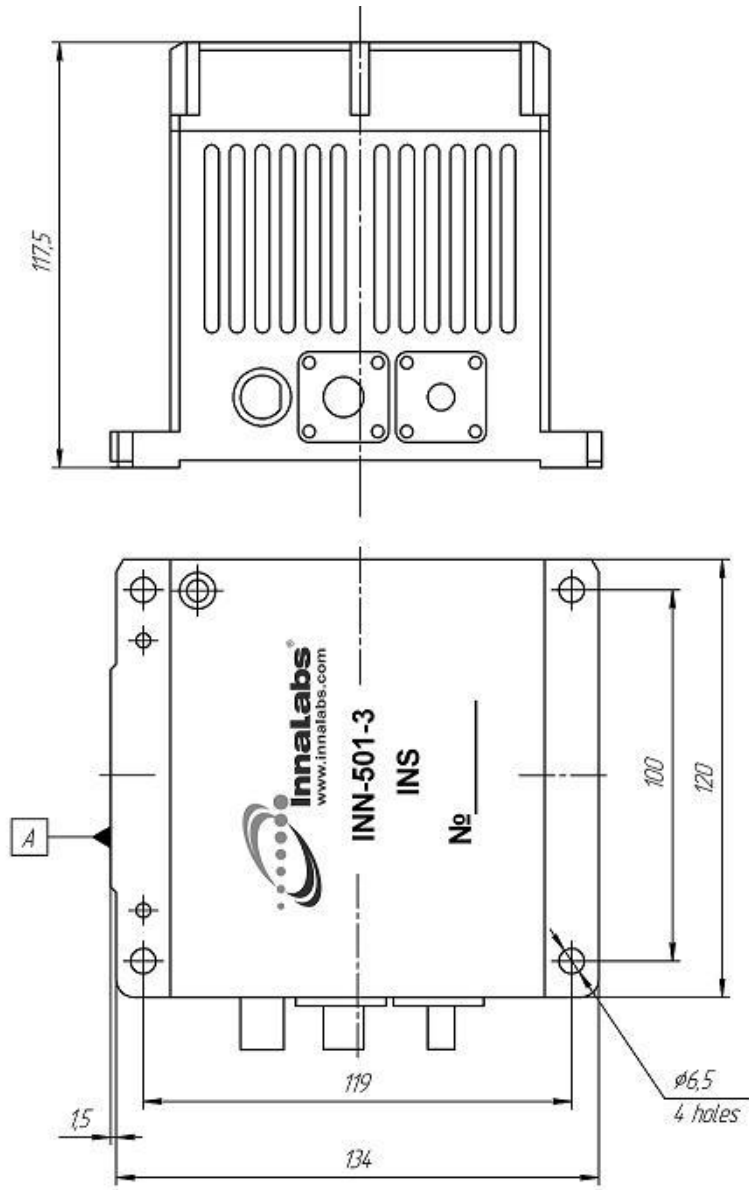
- Avionics Systems
- Remotely Operated Vehicles
- Land Vehicle Guidance
- Platform Stabilization



SPECIFICATIONS

#	Parameter	Unit	Value
1.	Update Rate	Hz	<100
2.	Startup Time	sec	< 1
3.	Full Accuracy Data	sec	180
4.	Position / Velocity		
4.1	Position Accuracy	m CEP	2
4.2	X,Y Velocity Accuracy	m/s RMS	0.05
4.3	Z Velocity Accuracy	m/s RMS	0.3
4.4	1PPS Accuracy	ns	50
5.	Heading		
5.1	Range	deg	0 ... 360
5.2	Static Accuracy over Temperature Range	deg	0.1
5.3	Dynamic Accuracy	deg RMS	0.2
5.4	Resolution	deg	0.01
6.	Attitude		
6.1	Range: Pitch, Roll	deg	±90, ±180
6.2	Static Accuracy over Temperature Range	deg	0.05
6.3	Dynamic Accuracy	deg RMS	0.1
6.4	Resolution	deg	0.01
7.	Angular Rate		
7.1	Input Range: Yaw, Pitch, Roll (optional)	deg/sec	±150
7.2	Bias stability over Temperature Range	deg/sec RMS	0.02
7.3	NonLinearity	% FS	0.1
7.4	Random Walk	deg/vhr	6
8.	Linear acceleration		
8.1	Input Range: X/Y/Z	g	±5
8.2	Bias Stability over Temperature Range	mg, RMS	0.5
8.3	NonLinearity	% FS	0.1
8.4	Random Walk	m/s/vhr	0.06
9.	Environment		
9.1	Operating Temperature	deg C	-40 to +60
9.2	Vibration (random)	g ² /Hz	0.04
9.3	Shock	g	100, /2 sine
10.	Electrical		
10.1	Input Voltage	VDC	+27±9
10.2	Power Consumption	W	8
10.3	Digital Output Format	-	RS-232,RS-422,CAN2.0 Option
11.	Physical		
11.1	Dimensions (L*W*H)	mm	134 * 120 * 117.5
11.2	Weight	kg	≤1.5

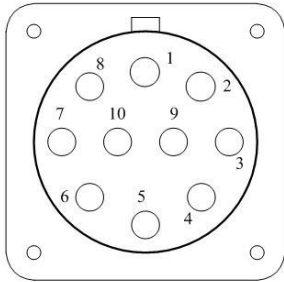
Dimensions drawing (mm):



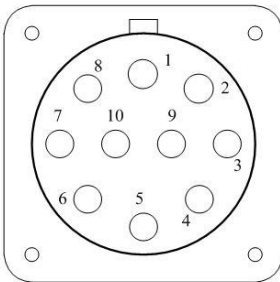
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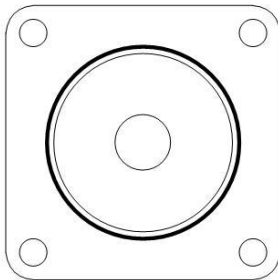
Connector pin description:



PIN	Signal	PIN	Signal
1	Input power	6	RS422 RXD+
2	NC	7	RS422 RXD-
3	Ground	8	RS232 TX
4	RS422 TXD+	9	RS232 RX
5	RS422 TXD-	10	RS232 GND



PIN	Signal	PIN	Signal
1	Input power	6	COMPASS – RS232 GND
2	NC	7	NC
3	Ground	8	NC
4	COMPASS – RS232 TX	9	NC
5	COMPASS – RS232 RX	10	NC



SMA-MMCX

For more information please contact us:

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