

Innalabs[®]

Inertial Navigation System

INN-501-1 M / INN-501-1

Datasheet

November, 2009

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The **Innalabs**[®] **INN-501-1 M INS** is an inertial navigation system composed of GPS-aided 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 accurate data for navigation, guidance, control, and stabilization purposes. It is designed for use in unmanned aircrafts, land vehicles, various platforms, and others.

Features

- High Stability Solid-state Sensors
- Kalman Filter Algorithm
- EMI & Vibration Resistant
- Environmentally Sealed
- Magnetometer is an option

Applications

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

The **INN-501-1 M** is supplied with a separately mounted magnetic heading sensor but it is possible the customer to order the **INN-501-1** INS modification without magnetometer.



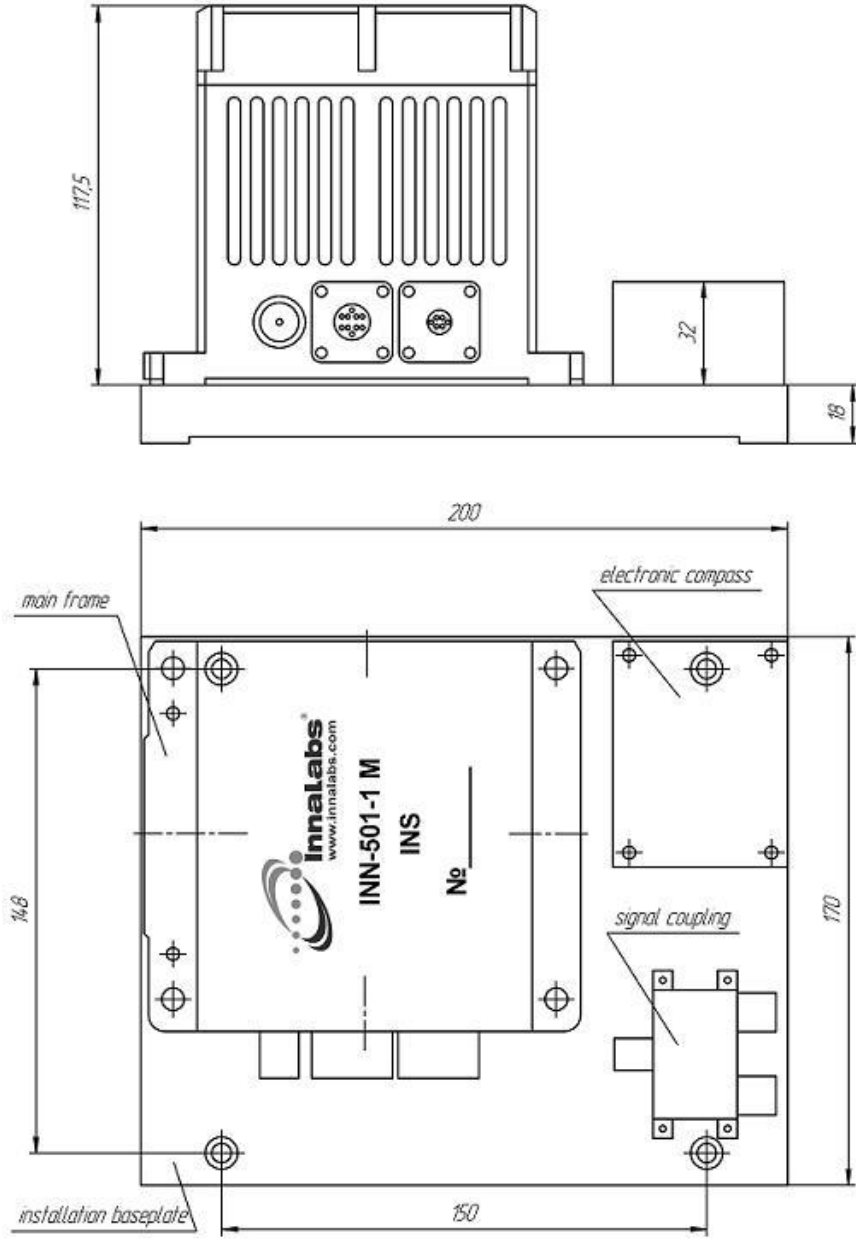
Innalabs Holding Inc.

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E-mail: contact.sales@innalabs.com
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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	5
4.2	X,Y Velocity Accuracy	m/s RMS	0.5
4.3	Z Velocity Accuracy	m/s RMS	1
4.4	1PPS Accuracy	ns	50
5.	Heading		
5.1	Range	deg	0 ... 360
5.2	Static Accuracy over Temperature Range	deg	0.5
5.3	Dynamic Accuracy	deg RMS	0.8
5.4	Resolution	deg	0.1
6.	Attitude		
6.1	Range: Pitch, Roll	deg	±90, ±180
6.2	Static Accuracy over Temperature Range	deg	0.3
6.3	Dynamic Accuracy	deg RMS	0.5
6.4	Resolution	deg	0.1
7.	Angular Rate		
7.1	Input Range: Yaw, Pitch, Roll (optional)	deg/sec	±300
7.2	Bias stability over Temperature Range	deg/sec RMS	0.1
7.3	Non-linearity	% FS	0.1
7.4	Random Walk	deg/vhr	6
8.	Linear acceleration		
8.1	Input Range: X/Y/Z	g	±10
8.2	Bias Stability over Temperature Range	mg, RMS	10
8.3	NonLinearity	% FS	0.2
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	6
10.3	Digital Output Format	-	RS-232,RS-422,CAN2.0 Option
11.	Physical		
11.1	Dimensions: INN-501-1 M INN-501-1	mm	200 * 170 * 135.5 134 * 120 * 117.5
11.2	Weight	kg	≤1.5

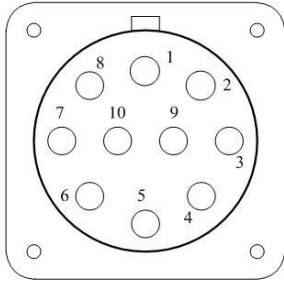
Dimensions drawing (mm):



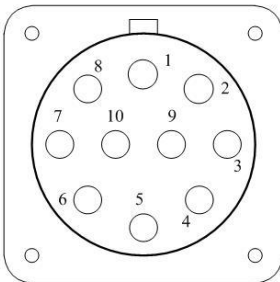
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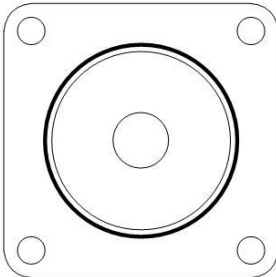
Connector pin description:



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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