

Innalabs[®]

Vertical Gyro

INN-miniVG-1

Datasheet

October, 2009

This document contains information proprietary to Innalabs[®]

The **Innalabs**[®] **INN-miniVG-1** series of vertical gyros (VG) is miniature stabilization system based on MEMS gyros and accelerometers aided with internal temperature sensor.

The **INN-miniVG-1** is used to measure angular displacement and rate in slight motion environment. It designed mainly for antenna stabilization purposes.

FEATURES

- Dynamic accuracy of 2 deg/sec
- Solid-state MEMS Sensors
- Low Power Consumption, 0.44W
- Compact design & Light weight
- Low Cost
- Engineering Support



APPLICATIONS

- Antenna Stabilization
- Platform Stabilization
- Automotive Testing

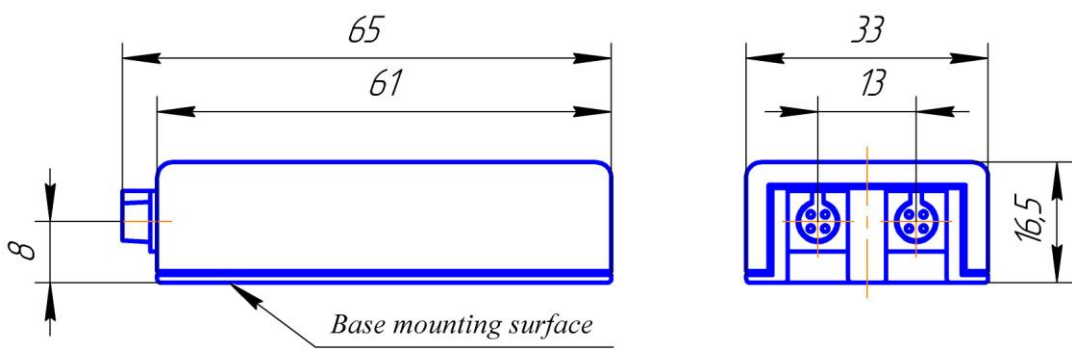
Data from the gyros, accelerometers as well as the internal temperature sensor is gathered by a digital signal processor (DSP). As its basic algorithm, the **INN-miniVG-1** uses the adaptive Kalman filter. The Kalman filter automatically adjusts for changing dynamic conditions without any external user input. It is possible to request data of the following types: raw data and quaternion data.

Each **INN-miniVG-1** device is calibrated in a special non-magnetic laboratory.

SPECIFICATIONS

Parameter	Unit	Value
Update Rate	Hz	120
Output data	-	Euler angles, angular rates, accelerations
Euler angular		
Range (pitch, roll)	deg	±90, ±180
Static Accuracy (pitch / roll)	deg	< 0.5
Dynamic Accuracy (pitch / roll, RMS)	deg	2
Angular resolution	deg	0.05 – 0.07
Angular Rate		
Range	deg/sec	≥ ±100
Zero Bias (room temperature, 1σ)	deg/sec	0.05
Temperature Drift (1σ) over the operating temperature range	deg/sec	≤1
Linearity	% FS	0.2
Noise (1σ)	deg/sec	0.5
Bandwidth	Hz	40
Environment		
Operating Temperature	deg C	-20 to +70
Storage Temperature	deg C	-25 to +85
Electrical		
Supply voltage	V	5.1 ... 5.7
Supply current	mA	75 ... 85
Power consumption	mW	440
Interface		
(Standard) RS485	-	TIA/EIA-485A(half-duplex)
Baud Rate	bps	115200
Byte Size	bites	8
Stop Bits	bit	1
Parity	-	NO
Physical		
Size	mm	65 * 33 * 16.5
Weight	gram	27

Dimensions drawing (mm):



For more information please contact us:

Innalabs Holding Inc.
Address: 10 Pidgeon Hill Dr, Suite 80, Sterling, VA 20165, USA
Tel: +1 (703) 596-0276, +1 (703) 880-4222, Fax: +1 (703) 935-8377
E-mail: contact.sales@innalabs.com
Website: www.innalabs.com