



Powerful Sensing Solutions for a Better Life

# VG350

VERTICAL GYRO SYSTEM

The MEMSIC VG350 is a robust entry-level Vertical Gyro System that utilizes MEMS-based inertial sensors and Extended Kalman Filter algorithms to provide unmatched value in terms of both price and performance. The VG350 is a next generation replacement for the widely accepted VG320 used in dynamic control and land navigation systems with over 1500 systems currently in service.



Antenna Stabilization



Sea State Monitoring

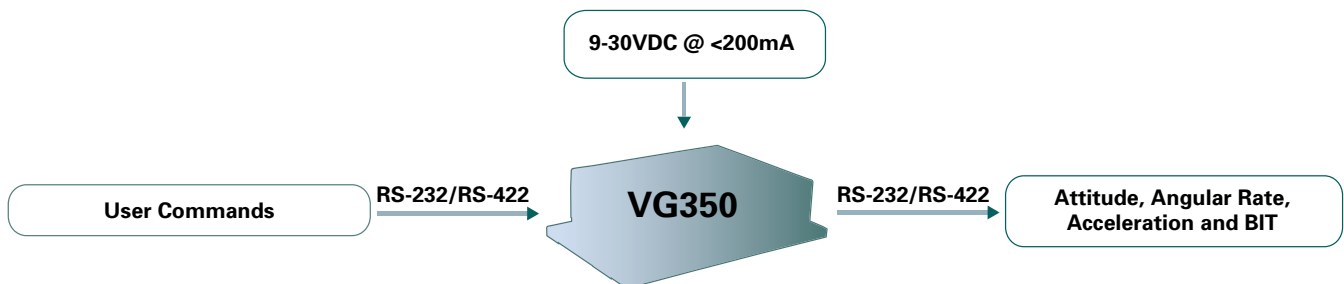
This rugged low-cost inertial system meets the demanding environmental requirements for operation in a wide variety of land vehicle and marine platform systems, and it is ideally suited for cost-sensitive high-volume OEM applications.

### Features

- Angle, Rate and Accel Data at 100Hz
- High Reliability MEMS Sensors
- Enhanced Kalman Filter Algorithm
- Wide Temp Range (-40°C to +70°C)
- Wide Input Power Range (9-30V)
- Low Profile <1.5"
- Lightweight <0.5lbs

### Applications

- Antenna Stabilization
- Sea State Monitoring
- Unmanned Vehicle Control



## Performance

## VG350

Attitude	
Range: Roll, Pitch (°)	± 180, ± 90
Dynamic Accuracy <sup>1</sup> (°)	< 0.75
Resolution (°)	< 0.1

Angular Rate	
Range: Roll, Pitch, Yaw (°/sec)	± 300
Bias Stability In-Run <sup>2</sup> (°/hr)	< 12
Bias Stability Over Temp <sup>3</sup> (°/sec)	< 0.5
Scale Factor Accuracy (%)	< 1
Non Linearity (%FS)	< 1
Resolution (°/sec)	< 0.02
Angle Random Walk (°/sq-rt hr)	< 3
Bandwidth (Hz)	50

Acceleration	
Input Range: X/Y/Z (g)	± 3
Bias Stability In-Run <sup>2</sup> (mg)	< 1
Bias Stability Over Temp (g)	< ± 0.015
Scale Factor Accuracy (%)	< 1
Non Linearity (%FS)	< 1
Resolution (mg)	< 0.5
Velocity Random Walk (m/s/sq-rt hr)	< 1
Bandwidth (Hz)	50

## Specifications

Environment	
Operating Temperature (°C)	-40 to +70
Non-Operating Temperature (°C)	-55 to +70

Electrical	
Input Voltage (VDC)	9 to 30
Power Consumption (W)	< 3
Digital Interface	RS-232 or RS-422 (user selectable)

Physical	
Size (in)	2.50 x 2.50 x 1.50 (excl. flanges)
	(cm)
Weight (lbs)	< 0.5
	(kg)
Connector	DSub-9, Male

Reliability	
MTBF (hours)	>35,000

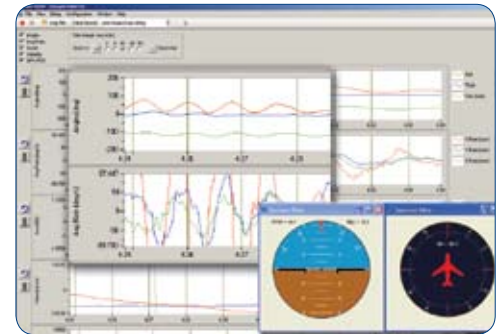
## Ordering Information

Model	Description
VG350CA-300	Vertical Gyroscope

This product has been developed exclusively for commercial applications. It has not been tested for, and MEMSIC make no representation or warranty as to conformance with, any military specifications or its suitability for any military application or end-use. Additionally, any use of this product for nuclear, chemical or biological weapons, or weapons research, or for any use in missiles, rockets, and/or UAV's of 300km or greater range, or any other activity prohibited by the Export Administration Regulations, is expressly prohibited without the written consent and without obtaining appropriate US export license(s) when required by US law. Diversion contrary to U.S. law is prohibited. Specifications are subject to change without notice. Notes: <sup>1</sup> 1-sigma, MEMSIC aggressive drive test. <sup>2</sup> 1-sigma, constant temperature, Allan Variance curve. <sup>3</sup> 1-sigma.

## NAV-VIEW 3.X

### Configuration & Display Software



NAV-VIEW 3.X provides an easy to use graphical interface to display, record and analyze all of the VG350 measurement parameters.

## Other Components

Each VG350 is shipped with an interface cable, MEMSIC's User's Manual and NAV-VIEW 3.X configuration and display software.

## Support

For more detailed technical information please refer to the 350-Series User's Manual available online at:

[www.memsic.com/Support](http://www.memsic.com/Support)