



Powerful Solutions for a Better Life

VG800

LOW DRIFT MEMS VERTICAL GYRO

MEMSIC's VG800CA establishes a new level of performance for standalone "unaided" inertial systems. The VG800CA combines advanced MEMS rate gyro and accelerometer technologies to provide a superior solution for measurement of dynamic roll and pitch angles in demanding environments.



NEXT GENERATION

Features

- Advanced MEMS Sensors
- Low Drift < 3°/hr
- High Reliability, MTBF > 20,000 hrs
- Stabilized Roll/Pitch Angle Outputs
- Fully Compensated Angular Rate and Linear Acceleration Outputs
- Digital (RS-232/RS-422) & Analog Outputs
- VG700-Compatible Interface Option



UGV/UUV Navigation

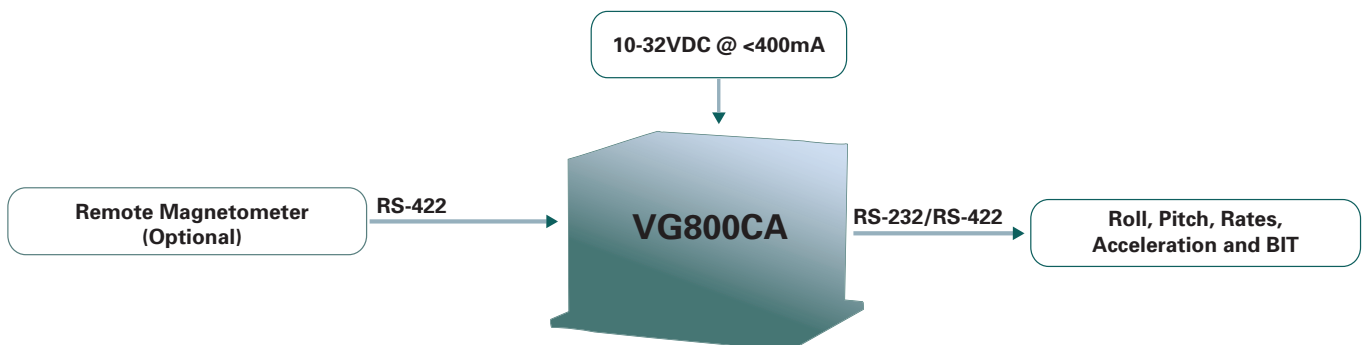


Antenna /Camera Stabilization

The VG800CA can be configured as a high performance IMU for integrated navigation systems, or as a vertical gyro for stabilization and control applications. Output data is available in both analog and digital formats, and a VG700-compatible mode is available for customers converting from the VG700 to VG800.

Applications

- Unmanned Vehicle Navigation (UGV, UUV)
- Antenna /Camera Stabilization
- Geo-referencing



Performance

VG800CA

Attitude	
Range: Roll, Pitch (°)	± 180, ± 90
Static Accuracy ¹ (°)	< 0.25
Dynamic Accuracy ² (°)	< 0.5
Resolution (°)	< 0.03

Angular Rate	
Range: Roll, Pitch, Yaw (°/sec)	± 200
Bias In-Run ³ (°/hr)	< 3
Scale Factor Accuracy (%)	< 1
Non-Linearity (% FS)	< 0.1
Resolution (°/sec)	< 0.025
Bandwidth (Hz)	50
Random Walk (°/hr ^{1/2})	< 0.1

Acceleration	
Range: X/Y/Z (g)	± 5
Bias In-Run (mg)	< 1.0
Scale Factor Accuracy (%)	< 1
Non-Linearity (% FS)	< 0.1
Resolution (mg)	< 0.5
Bandwidth (Hz)	50
Random Walk (m/s/hr ^{1/2})	< 0.5

Specifications

Environment	
Operating Temperature (°C)	-40 to +71
Non-Operating Temperature (°C)	-55 to +85
Non-Operating Vibration (g rms)	6
Non-Operating Shock (g)	100

Electrical	
Input Voltage (VDC)	10 to 32
Input Current (A)	< 0.4
Power Consumption (W)	< 5
Digital Output Format	RS-232/RS-422
Analog ⁴ Range (VDC)	+/-5V, +/-10V, 0-5V (selectable)

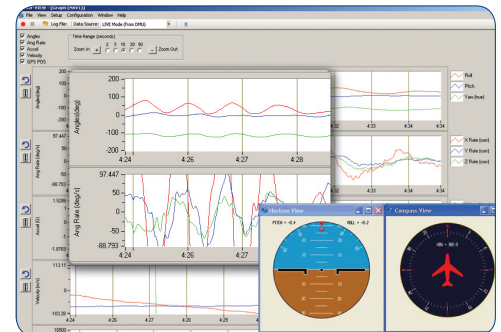
Physical	
Size (in)	4.0 x 4.0 x 2.91
(cm)	10.16 x 10.16 x 7.40
Weight (lbs)	< 3.5
(kg)	< 1.6
Connector	MIL-DTL 38999 Series 3

Ordering Information

Model	Description
VG800CA-200	Ultra High Performance MEMS Vertical Gyro

This product has been developed by MEMSIC exclusively for commercial applications. It has not been tested for, and MEMSIC makes 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 of Crossbow 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: ¹One Sigma Value. ²RMS Value. ³Constant temperature, Allan Variance Curve. ⁴All DAC analog outputs are fully buffered and are designed to interface directly to data acquisition equipment.

GYRO-VIEW 2.5 Configuration & Display Software



GYRO-VIEW 2.5 provides an easy to use graphical interface to display, record and analyze all of the VG800 measurement parameters.

Other Components

Each VG800CA is shipped with an 800-Series Installation Manual, and MEMSIC's GYRO-VIEW 2.5 configuration and display software.

Support

For more detailed technical information please refer to the 800-Series User's Manual available online at: www.memsic.com/Support