



# VG380SA

VERTICAL GYRO SYSTEM

The ACEINNA VG380SA is a standalone fully-integrated Vertical Gyro System offering a complete dynamic measurement solution in a miniature environmentally protected package. The VG380SA offers a highly-effective solution for cost-sensitive demanding applications.



*UAV Flight Control    Uncertified Avionics*

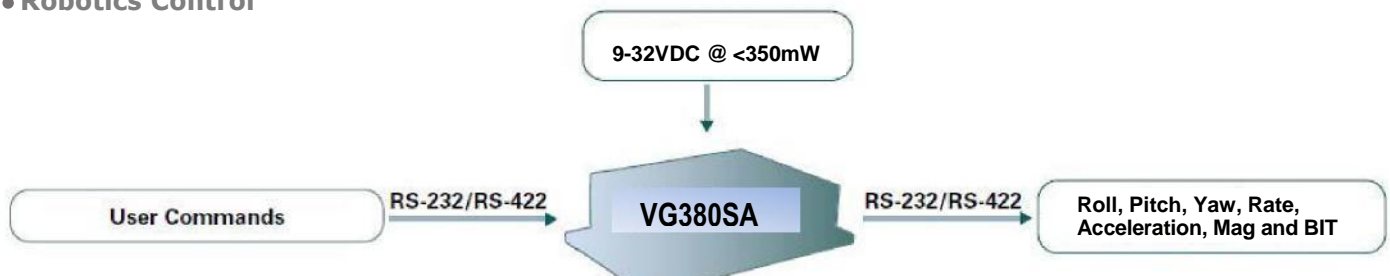
The ACEINNA VG380SA integrates highly-reliable MEMS 6DOF inertial sensors with extended Kalman filtering in a miniature factory-calibrated module to provide consistent performance through the extreme operating environments in a wide variety of dynamic control and navigation applications.

## Features

- Complete 6DOF Inertial System
- Roll/Pitch Outputs
- RS-232 or RS-422 Interface
- Update Rate, 1Hz to 100Hz
- Miniature Package, 41 x 48 x 22mm
- Wide Input Voltage Range, 9-32VDC
- Low Power Consumption < 350 mW
- Wide Temp Range, -40C to +85C
- High Reliability, MTBF > 50k hours
- Environmentally Protected Enclosure

## Applications

- Unmanned Vehicle Control
- Uncertified Avionics
- Platform Stabilization
- Robotics Control



## Performance VG380SA (-200, -400)

Attitude	
Range: Roll, Pitch (°)	± 180, ± 90
Accuracy (°)	< 1.0 <sup>3</sup> , < 0.2 <sup>4</sup>
Resolution (°)	< 0.02
Angular Rate	
Range: Roll, Pitch, Yaw (°/sec)	± 200 (± 400 High Range Model)
Bias Instability (°/hr) <sup>1,2</sup>	< 10
Bias Stability Over Temp (°/sec)	< 0.1
Resolution (°/sec)	< 0.02
Scale Factor Accuracy (%)	< 0.1
Non-Linearity (%FS)	< 0.1
Angle Random Walk (°/√hr) <sup>2</sup>	< 0.75
Bandwidth (Hz)	5-50 (user-configurable)
Acceleration	
Range: X, Y Z (g)	±4 (± 8 High Range Model)
Bias Instability (mg) <sup>1,2</sup>	< 0.02
Bias Stability Over Temp (mg)	< 5
Resolution (mg)	< 0.5
Scale Factor Accuracy (%)	< 0.1
Non-Linearity (%FS)	< 0.1
Velocity Random Walk (m/s/√hr) <sup>2</sup>	< 0.05
Bandwidth (Hz)	5-50 (user-configurable)

## Specifications

Environment	
Operating Temperature (°C)	-40 to +85
Non-Operating Temperature (°C)	-55 to +105
Enclosure	Aluminum (Gold Chem Film - ROHS)
Electrical	
Input Voltage (VDC)	9 to 32
Power Consumption (mW)	< 350
Digital Interface	RS-232 or RS-422 (user-configurable)
Output Data Rate	2Hz to 100Hz (user-configurable)
Physical	
Size (mm)	41 x 48 x 22
Weight (gm)	< 30
Interface Connector	9-Pin Micro-D

## Ordering Information

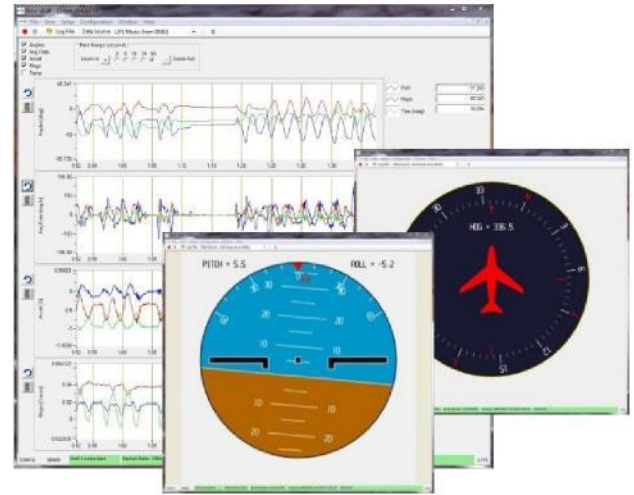
Model	Description
VG380SA-200	Vertical Gyroscope, 200dps Range
VG380SA-400	Vertical Gyroscope, 400dps Range

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<sup>1</sup> Allan Variance Curve, constant temperature. <sup>2</sup> 1-sigma error. <sup>3</sup> RMS error under all dynamics.

<sup>4</sup> RMS error under static conditions over full temperature range.



NAV-VIEW provides an easy to use graphical interface to display, record, playback, and analyze all of the VG380SA Vertical Gyro System parameters.

NAV-VIEW can also be used to set a wide range of user-configurable fields in the VG380SA to optimize the system performance for highly dynamic applications.

## Other Components

The VG380SA evaluation kit includes an VG380SA, interface cable and USB cable, allowing direct connection to a PC for use with NAV-VIEW display and configuration software.