



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

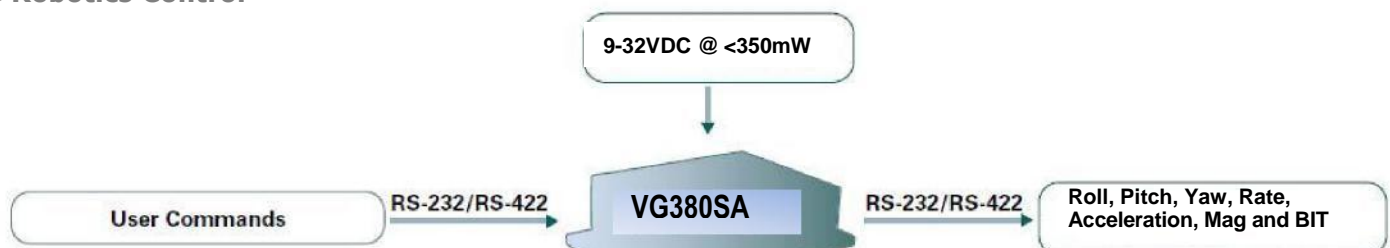
The ACEINNA VG380SA integrates highly-reliable MEMS 6DOF inertial sensors with extended Kalman filtering in a miniature factory-calibrated module to provide consistent performance through the extreme operating environments in a wide variety of dynamic control and navigation applications.

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





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Performance VG380SA (-200, -400)

Attitude	
Range: Roll, Pitch (°)	± 180, ± 90
Accuracy (°)	< 1.0 ³ , < 0.2 ⁴
Resolution (°)	< 0.02
Angular Rate	
Range: Roll, Pitch, Yaw (°/sec)	± 200 (± 400 High Range Model)
Bias Instability (°/hr) ^{1,2}	< 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) ²	< 0.75
Bandwidth (Hz)	5-50 (user-configurable)
Acceleration	
Range: X, Y Z (g)	±4 (± 8 High Range Model)
Bias Instability (mg) ^{1,2}	< 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) ²	< 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

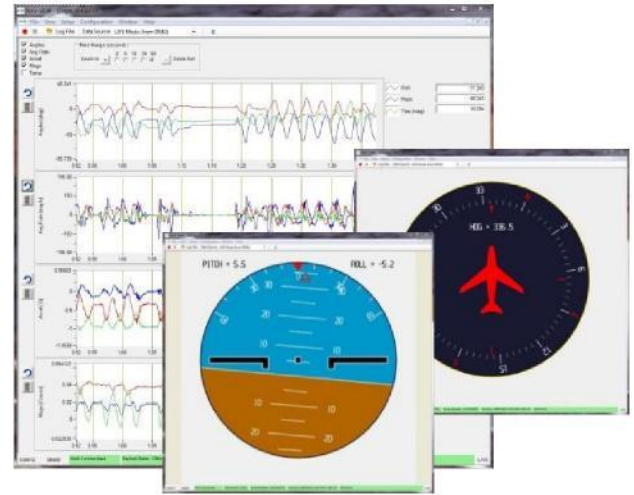
Model	Description
VG380SA-200	Vertical Gyroscope, 200dps Range
VG380SA-400	Vertical Gyroscope, 400dps Range

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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.

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

⁴ 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.

NAV-VIEW software is available for download from ACEINNA's website at: www.aceinna.com/support

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.

Support

For more detailed information please refer to the DMU380SA-Series User's Manual available online at:

www.aceinna.com/support