MEMSIC's AHRS500GA is the most widely used MEMS-based Attitude and Heading Reference System for avionics upgrades. The field-proven FAA-certified AHRS500GA is providing accurate and reliable attitude and heading information to instrument panels and autopilots in more than five hundred fixed-wing and rotary-wing aircraft.

FAA CERTIFIED

Primary Flight Display Systems

Flight Test Instrumentation

This standalone AHRS solution is designed for avionics retrofit and OEM aircraft applications. The AHRS500GA is available in several different configurations that provide the flexibility to accommodate various system interfaces, and typical mounting orientation and installation location requirements.
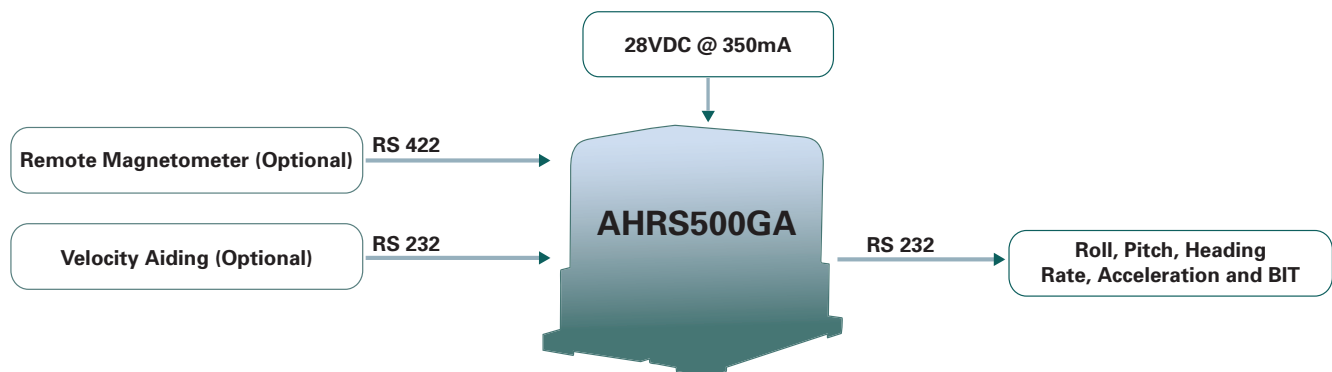
Applications

- Primary Flight Display Systems
- Attitude Indicators
- Flight Test Instrumentation

Features

- Complete "Standalone" AHRS Solution
- Meets TSO without External Aiding
- Maintains High Stability during long "Orbiting" Maneuvers
- Low Power < 4W
- Comprehensive BIT (Built-in-Test)
- High Reliability MEMS Sensors
- MEMSIC's CRM-Series Remote Magnetometer (optional)

Certifications

- TSO C4c and TSO C6d
- DO-178B Level C

28VDC @ 350mA

Remote Magnetometer (Optional) — RS 422 → **AHRS500GA**

Velocity Aiding (Optional) — RS 232 → **AHRS500GA**

AHRS500GA — RS 232 → **Roll, Pitch, Heading Rate, Acceleration and BIT**

Performance   AHRS500

Heading	
Range (°)	± 180
Accuracy[1] (2σ)	± 2.0
Resolution (°)	0.1

Attitude	
Range: Roll, Pitch (°)	± 180, ± 90
Accuracy[1] (2σ)	± 1.0
Resolution (°)	< 0.1

Angular Rate	
Range: Roll, Pitch, Yaw (°/sec)	± 200
Bias: Roll, Pitch, Yaw (°/sec)	< ± 0.1
Resolution (°/sec)	< 0.15
Bandwidth (Hz)	25

Acceleration	
Range: X/Y/Z (g)	± 10
Bias: X/Y/Z (mg)	< ± 15
Resolution (mg)	< 2.0
Bandwidth (Hz)	25

Specifications

Environment[2]	
Operating Temperature (°C)	-40 to +70
Non-Operating Temperature (°C)	-55 to +85
Enclosure	Sealed Housing

Electrical	
Input Voltage (VDC)	12V or 24V Elec. System
Power Consumption (W)	< 4
Digital Interface	RS-232

Physical	
Size (in)	4.66 x 4.53 x 4.863
(cm)	11.84 x 11.51 x 12.35
Weight (lbs)	3.5
(kg)	1.6
Connector	DB15, D-sub 15-pin Male

GYRO-VIEW 2.0
Configuration & Display Software
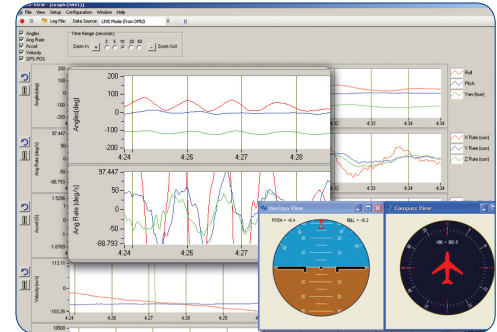
GYRO-VIEW 2.0 provides an easy to use graphical interface to display, record and analyze all of the AHRS500 measurement parameters.

Other Components

Each AHRS500GA is shipped with an interface cable (used during installation alignment), MEMSIC's 500 Series User's Manual and GYRO-VIEW 2.0 configuration and display software.

The AHRS500GA is designed for stand-alone operation, but may also be used with MEMSIC's CRM500 remote magnetometer for installations requiring a wing or tail mount magnetometer.

Ordering Information

Model	Description
AHRS500GA-220	AHRS (install with connector aft, 100Hz update rate, 38400 baud rate)
AHRS500GA-221	AHRS (install with connector fwd, 100Hz update rate, 38400 baud rate)
AHRS500GA-224	AHRS (install with connector aft, 25Hz update rate, 9600 baud rate)
AHRS500GA-225	AHRS (install with connector fwd, 25Hz update rate, 9600 baud rate)

Support

For more detailed technical information please refer to the AHRS500GA Installation and Operator's Manual available online at:
www.memsic.com/Support