

AHRS510

ATTITUDE & HEADING REFERENCE SYSTEM

- Primary Flight Attitude and Heading
- Standard ARINC429 Messages (Label 320, 324, 325 etc.)
- FAA Certified for TSO C4c and TSO C6d
- DO-160E and DO-178B Level B (Level A Pending)
- Comprehensive BIT (Built-in-Test)
- Used with Crossbow Remote Fluxgate Magnetometer

Applications

- Primary Flight Display Systems
- Autopilots
- Antenna Control

ARINC429 Outputs



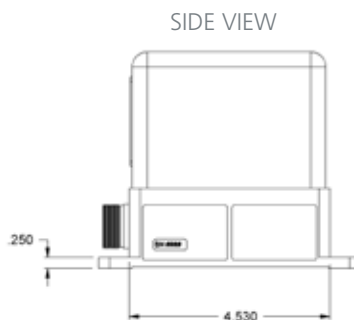
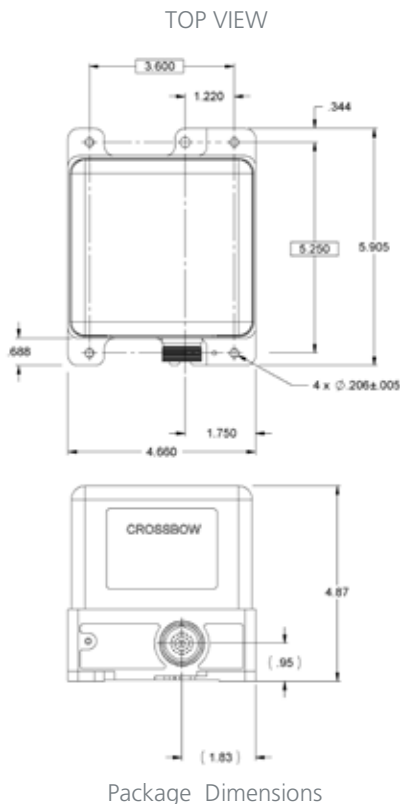
AHRS510GA

The AHRS510GA is the world's first FAA certified MEMS Attitude and Heading Reference System (AHRS) with a standard aircraft ARINC429 interface. The AHRS510GA is designed for use in FAA certified aircraft and has passed an extensive regimen of rigorous DO-160E qualification tests.

The AHRS510GA system utilizes Crossbow's new CRM series remote fluxgate magnetometer to ensure optimum heading alignment in any installation environment.

For high-performance aircraft installations and complex retrofits, the AHRS510GA allows for aiding inputs from air data or GPS sensors.

A sophisticated suspension system, similar to those found on commercial air transport navigation systems, ensures full performance in aircraft vibration environments. A sealed enclosure provides long trouble-free life and full performance over the entire altitude and temperature range without risk of moisture contamination. A comprehensive Built-in-Test (BIT) architecture continuously monitors all sensors, internal electronics, power circuitry and system calibration during operation, and updates the system BIT status in every output message. Output data is provided via a standard ARINC429 data bus.



Specification	AHR5510GA	Remarks
Performance		
Update Rate (Hz)	100	
Full Accuracy Data (sec)	< 60	
Heading¹		
Range (°)	± 180	
Accuracy (°rms)	± 3	
Resolution (°)	< 0.1	
Attitude		
Roll Range (°)	± 180	
Pitch Range (°)	± 90	
Accuracy (°rms)	± 2	
Resolution (°)	< 0.1	
Angular Rate²		
Range (°/s)	± 128	
Accuracy (°/s)	< 0.1	Kalman Filter Stabilized
Resolution (°/s)	< 0.05	
Linear Acceleration²		
Range (g)	± 4	
Accuracy (mg)	± 12	
Resolution (mg)	< 1	
Environment³		
Operating Temperature (°C)	-40 to +70	
Non-Operating Temperature (°C)	-55 to +85	
Operating Vibration (grms)	4.12	DO-160E, Section 8, Category S, Curve C
Altitude (ft)	50,000	
Electrical		
Input Supply Voltage (VDC)	18-32	DO-160E Section 16, Category B
Input Power (W)	< 10	@ 28 VDC
Digital Output Format	ARINC429	
Physical		
Size (in)	4.66 x 4.53 x 4.87	Excludes Mounting Flanges
(cm)	11.84 x 11.51 x 12.35	Excludes Mounting Flanges
Weight (lbs)	3.0	
(kg)	1.36	
Connector	MIL-C-38999, Series III	Shell size 15

Notes

¹ Requires connection to CRM Series Remote Magnetometer and correct MagAlign.

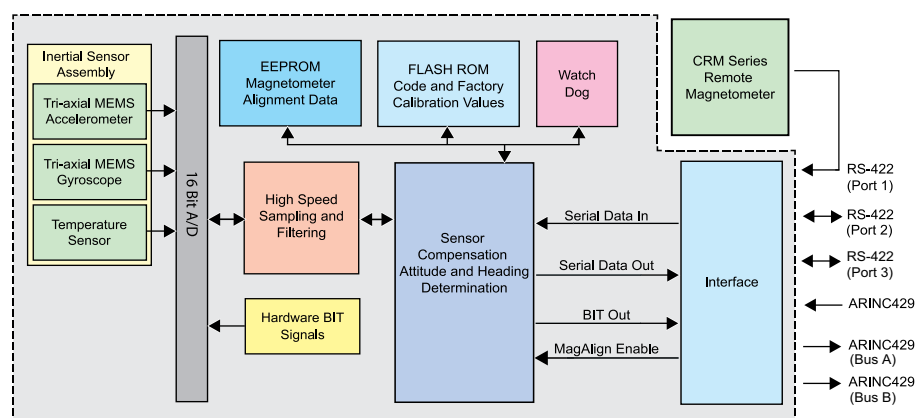
² Call factory for other ranges.

³ DO-160E Environmental Category: C4XBBBSCXXXXXZBABCC(WW)MA2J33XXAX

Specifications subject to change without notice.

Pin	Function
1	Power B Ground
2	Chassis Ground
3	ARINC Output Bus A + to System
4	ARINC Output Bus B + to System
5	ARINC Input + from System
6	No Connection
7	Port 3 RS422 Return GPS
8	Port 2 RS422 Return ADC
9	Port 2 RS422 Rx + from ADC
10	Port 2 RS422 Rx - from ADC
11	Port 3 RS422 Rx + from GPS
12	Port 3 RS422 Rx - from GPS
13	Factory Use Only
14	Factory Use Only
15	Port 1 RS422 Rx + from CRM
16	Power Output to CRM
17	Power B Input
18	Power A Input
19	Power A Ground
20	ARINC Output Bus A - to System
21	ARINC Output Bus B - to System
22	ARINC Input - from System
23	No Connection
24	Port 2 RS422 Tx - to ADC
25	Port 2 RS422 Tx + to ADC
26	Port 3 RS422 Tx + to GPS
27	No Connection
28	Port 1 RS422 Rx - from CRM
29	Factory Use Only
30	Factory Use Only
31	Factory Use Only
32	Port 1 RS422 Return CRM
33	No Connection
34	Port 3 RS422 Tx - to GPS
35	Factory Use Only
36	Factory Use Only
37	Factory Use Only

AHR5510 Pin Diagram



AHR5510GA System Block Diagram

Ordering Information

Model	Description	Interface	Data Rate
AHR5510GA-[]	Attitude & Heading Reference System	ARINC429	High Speed

AHR5510 SYSTEM REQUIRES CRM SERIES REMOTE MAGNETOMETER

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