AHR50

Attitude Heading Reference System

Pictured: Elbit Hermes UAV

Two developments will dominate the next era of aviation: unmanned systems in the national airspace (NAS) and deeper integrations of subsystems to reduce architecture complexity and SWAP budgets. Enter this era with the AHR50 AHRS (Attitude Heading Reference System) from Archangel Systems.

By leveraging existing IP into a compact form factor, the AHR50 is ideally suited for certified Unmanned Aerial Systems (UAS) in the national airspace. Qualifications include DO-178B Level A certified software (Mission Critical), TSO C4c and C6e approval, and DO-160E certifications for altitude, temperature, shock/vibration, humidity, and fungus.

Due to its small size and certification pedigree, the AHR50 can also function as an embeddable AHRS. In essence, Archangel becomes your AHRS provider, freeing your team to focus on the higher system design.

Archangel's AHR150A-2 MSU provides heading data for the AHR50. The MSU is fully qualified to DO-160E, DO-178C Level A, and TSO C6e. And unlike most AHRS, the AHR50 can also accept air data information via RS-232 and blend it with inertial measurements for enhanced attitude estimates.

AHR50

FEATURES

Qualified for Mission Critical applications including IFR, SAR, primary flight systems, and UAS in the national airspace

Complete set of support documents supplied for embedding into larger systems

Certified for Part 23, 25, 27, and 29 aircraft

AHR150A-2 MSU provides heading

RS-232 I/O

Filtered micro DB9 connectors

CERTIFICATIONS

DO-178B Level A software (the highest level)

FAA TSO C4c and C6e

DO-160E environmental certifications for altitude, temperature, shock/vibration, humidity, and fungus

EXPORTING

Exportable worldwide

No end-user statement required

Archangel SYSTEMS INC

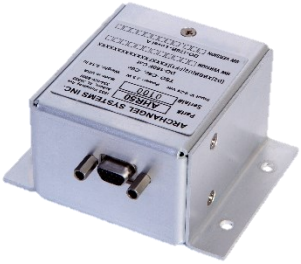
www.archangel.com
334.826.8008 x 22
Dan Reida – Director of Sales 417.896.4407
lets.talk@archangel.com

AHR50

Attitude Heading Reference System

The AHR50 is a highly flexible inertial sensor system for cost-sensitive attitude and control functions. With both integrated sensors and additional input capabilities, the AHR50 functions as a bank and pitch instrument. When combined with the AHR150A-2 Magnetic Sensing Unit (MSU), the resulting suite is a powerful and compact AHRS with DO-178B Level A certified software and FAA TSO C4c, and C6e approvals.

The certification pedigree and small size aligns the AHR50 with FAA strategies for incorporating UAS in the national airspace. Or, the AHR50 can be embedded into a larger system with the customer's enclosure providing DO-160E protections. All engineering and quality support documents needed for integration and certification activities are provided by Archangel.



AHR50 Dimensions/Weight

Size	1.25" x 2.5" x 2.0" (H x W x D)
Weight	0.17 lbs

AHR150A-2 MSU Dimensions/Weight

Size	0.75" x 3.0" (H x diameter)
Weight	0.5 lbs

Environment/Power

Temperature	-40°C to +70°C operating -55°C to +125°C non-operating
Altitude	-1,500 to 52,000 ft pressure altitude
Power	8–24 VDC, 0.4 A @ 12 V nominal

Inputs/Outputs

RS-232 Out	All inertial data
RS-232 In	Air data
Output Data Rate	100 Hz (new message every 10 ms)
RS-232 Baud Rate	115200
RS-485	Bi-directional MSU Interface

Ranges (Normal Operations)

Rates	±150°/second
Accelerations	±10 g

Data Accuracy (Dynamic—Normal Flight)

Pitch, Roll	±1.0°, 3 σ
Heading	±2.0°, 3 σ
Body Rates	0.2% of input rate

Certifications/MTBF

FAA	TSO C4c and C6e
Environmental Categories	DO-160E [D2]XBBB[U2(FF1)] XXXXFXXXXXXXXXXXX
Software Categories	DO-178B Level A

Notes

www.archangel.com
334.826.8008 x 22
lets.talk@archangel.com