

AHR150A

Air Data Attitude Heading
Reference System



Pictured: Boeing CH-47 Chinook

The AHR150A ADAHRS (Air Data Attitude Heading Reference System) from Archangel Systems represents a paradigm shift in the ADAHRS market. Using MEMS sensors and sophisticated blending algorithms, the AHR150A yields "FOG-grade" performance at greatly reduced size, weight, power, and cost.

Several companies, including The Boeing Company, Erickson Corporation, and Airbus, have selected the AHR150A for their supplemental and type certificates in rotary- and fixed-wing platforms.

Rate limits for the AHR150A are $\pm 128^\circ/\text{second}$. A variant, the AHR300A, reaches $\pm 256^\circ/\text{second}$ and is similarly certified. And, with multiple high- and low-speed ARINC 429 ports, both products seamlessly integrate into any avionics suite.



AHR150A-1 ISU

AHR150A-2 MSU

FEATURES

Qualified for Mission Critical applications including IFR, SAR, and primary flight systems

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

Air data is RVSM compliant

Designed with low data latency for fly-by-wire aircraft

Directional Gyro mode meets TSO C5f requirements

Mil Spec 38999 filtered connectors

Angle rate limit of $\pm 128^\circ/\text{second}$ ($\pm 256^\circ/\text{second}$ on the AHR300A)

CERTIFICATIONS

DO-178B Level A software

FAA TSO C4c, C5f, C6e, C88b, and C106

EASA—All equivalent ETSOs

DO-160E Environmental certifications including EMI, EMC, and HIRF

EXPORTING

Exportable worldwide

No end-user statement required



Archangel
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AHR150A

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AHR150A ISU Dimensions/Weight

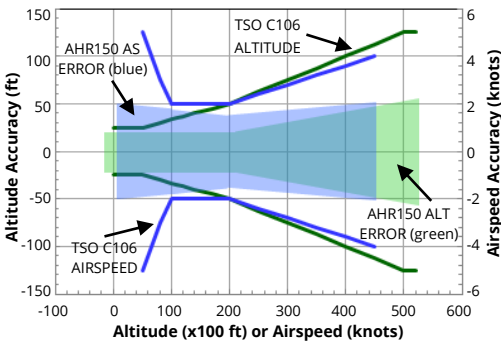
Size (AHR150A-1)	4.375" x 5.25" x 5" (H x W x D)
(AHR300A-1)	
Weight (AHR150A-1)	3.1 lbs
(AHR300A-1)	



AHR150A-2 MSU Dimensions/Weight

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

Air Data Accuracy (6 σ)



Environment/Power

Temperature	-40°C to +70°C operating
	-55°C to +125°C non-operating
Altitude	-1,000 to 52,000 ft pressure
Power	16-36 VDC, 0.5 A @ 28 V nominal

Inputs/Outputs

ARINC 429	4 high-speed transmit, 1 receive, ARINC 705-5 words 4 low-speed transmit, 1 receive, ARINC 706-4 words
Discrete Outputs	Master fault, 11-bit ICAO altitude select
Discrete Inputs	CW/CCW slewing, DG/Mag mode select
User-programmable Inputs	Orientation, Unit ID, Lever Arms, SSEC/PSEC Select

Ranges (Normal Operations)

Rates	AHR150A $\pm 128^\circ/\text{second}$ AHR300A $\pm 256^\circ/\text{second}$
Accelerations	$\pm 10 g$

AHRS Accuracy (Dynamic—Normal Flight)

Pitch, Roll	$\pm 1.0^\circ, 3 \sigma$
Heading	$\pm 2.0^\circ, 3 \sigma$
Body Rates	0.2% of input rate 0.1% non-linearity

Certifications/MTBF

FAA	TSO C4c, C5f, C6e, C88b, and C106
EASA	All similar ETSOs
Environmental Categories	DO-160E [D2]XABB[UK1]EWFDFS ZZAZZ[Y(QKL)]L[B4K44]XAAX
Software Categories	DO-178B Level A
MTBF MIL-HDBK-217 35°C ambient	13,800 hours in fixed wing 9,600 hours in rotary wing

Notes



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