A Cost-Effective Solution for Next Generation Flight Decks

Universal Avionics’ AHS-525 Attitude Heading Reference System (AHRS) presents the superb reliability of Micro-Electromechanical Systems (MEMS) technology needed to support NextGen flight decks. MEMS-based technology combines the computational ability of microelectronics with the acuity and control of micro-sensors and micro-accelerometers.

The AHS-525 contains multiple rate gyros to measure angular aircraft motion in the pitch, roll and yaw axes and several accelerometers to measure aircraft linear motion along the longitudinal, lateral and vertical axes of the aircraft. This allows a single AHS-525 to replace multiple Line Replaceable Units (LRU) found in a typical aircraft installation that would be performing the same functions. Therefore, there is a reduction in the LRU footprint, weight, wiring and power requirements.

A fixed mounting plate incorporating two precision alignment pins allows the unit to be easily removed for service and replaced without repeated and time-consuming system realignment. In addition, a straightforward alignment process reduces service time.

Incorporated into the AHS-525 is one “solid-state” main MEMS-based component, using digital electronic subcomponents. In comparison to older mechanical “spinning” gyroscopes, the MEMS-based AHS-525 produces a significant advantage in overall reliability.

The AHS-525 features digital, analog, discrete and synchro inputs and outputs (I/O) to support a wide variety of interfaces on Part 23 and Part 25 Fixed Wing aircraft, and Part 27 and Part 29 Rotorcraft.

Simplifying retrofit installations, equating to significant installation and operating cost savings, the AHS-525 is a clear choice for operators seeking a cost-effective and reliable AHRS solution.

Universal Avionics® AVIONICS SYSTEMS CORPORATION
Specifications

Hardware

Size: 5.31 in. H x 5.25 in. W (with Mounting Plate)
5.00 in. H x 5.25 in. W (without Mounting Plate)

Depth: 8.65 in.

Weight: 7.5 lbs. (with Mounting Plate)
6.5 lbs. (without Mounting Plate)

Mounting: Fixed

Components

• Attitude Heading Reference Unit (AHRU)*
• Magnetic Sensing Unit (MSU) for magnetic heading data
• Attitude Heading Configuration Module (AHCM) to store configuration data and alignment offset values
• AHRU Aircraft Mounting Plate that is permanently affixed to the aircraft
• Universal Avionics Electronic Flight Instrument System (EFIS) or
Discrete Inputs for Operator Control

Inputs/Outputs

3 ARINC 429 input ports
4 ARINC 429 output ports
1 RS-232 input/output port (bi-directional)
1 Input Manchester bus port
6 3-Wire Synchro output ports
4 2-Wire Synchro output ports
6 Gnd/Open discrete input ports
1 Open/+28 V discrete input port
6 Open/+28 V dc configurable discrete output ports
3 26 VAC 400 Hz Synchro Reference input ports
3 Analog DC differential output ports
2 ±10 VDC Analog DC output ports
2 2-Wire Analog DC input ports

Power

Primary Input: 28 VDC standard

FAA TSO/ETSO

TSO-C3e: Turn and Slip Indicator Performance
TSO-C4c: Bank and Pitch Instruments
TSO-C5F: Direction Instrument, Nonmagnetic (Gyroscopically Stabilized)
TSO-C6e: Direction Instrument, Magnetic (Gyroscopically Stabilized)
ETSO-C3d: Turn and Slip Indicator Performance
ETSO-C4c: Bank and Pitch Instruments
ETSO-C5e: Direction Instrument, Nonmagnetic (Gyroscopically Stabilized)
ETSO-C6e: Direction Instrument, Magnetic (Gyroscopically Stabilized)

Supported Interfaces

The AHS-525 interfaces with several aircraft systems, including, but not limited to, the following:

• Electronic Flight Instrument System (EFIS)
• Flight Data Recorder (FDR)
• Weather Radar
• Autopilot/Flight Director
• Enhanced Ground Proximity Warning System (EGPWS)
• Flight Management System (FMS)
• Air Data Computer (ADC)
• Terrain Awareness and Warning System (TAWS)
• Traffic and Collision Avoidance System (TCAS)
• Radio Awareness and Warning System (RAMS)
• Attitude Magnetic Indicator (RMI)
• Attitude Direction Indicator (ADI)
• Vertical Situation Indicator (HSI)

*As with any AHRS installation, dual AHRU installation is required for Part 23 Class 3 and 4 and Part 25 Fixed Wing aircraft. It is also required for Part 27 and Part 29 Rotorcraft AHRS installation.

MEMS Inertial Sensor provided by Archangel Systems, Inc.

Features and capabilities are representative of systems at time of printing.
Please contact your Universal Avionics sales representative for the latest system enhancements.
Specifications contained herein are subject to change without notice.