

Air Data, Attitude and Heading Reference System (ADAHRS)



**INNOVATIVE
AEROSYSTEMS**

Air Data, Attitude and Heading Reference System (ADAHRS)



Features & Benefits

- Versatile interface capability
- Highly accurate data sensors
- Directional Gyro Mode
- Software RTCA DO-178C Level A
- Hardware: RTCA DO-254 Level A
- Hardware Qualification: RTCA DO-160G
- Control interfaces via discretes and/or ARINC 429
- No forced air cooling
- Increased safety and reliability
- Logistics and maintenance benefits by integrating multiple functions into one LRU
- Analog I/O module configuration in support for legacy integration
- RVSM capable
- GPS aiding option for improved accuracy beyond certified specification

Technical Overview

Innovative Aerosystems ADAHRS replaces independent DG/VG's, AHRS and air data computers in a single, compact, low weight unit. The ADAHRS Unit is digital but provides analog interfaces to adapt to legacy autopilots and avionics instruments.

The ADAHRS incorporates an integral Inertial Measurement Unit (IMU) which includes tri-axial accelerometers and gyros. The IMU includes an integral air data module to measure static and total pressure for independent display of air data information.

An external Magnetic Sensor Unit (MSU) input is used to provide long term magnetic aiding to compute Magnetic Heading output. A Directional Gyro Heading output can be computed if the DG mode is selected via provided interfaces.

The ADAHRS can be configured for aircraft specific parameters such as Maximum Allowable Airspeed Limit, static source error correction, type of temperature probe, attitude offset calibration, MSU calibration, and other optional functionality via the Installation Configuration Module (ICM).

Designed with the latest in MEMS Gyro technology coupled with the unparalleled history of Innovative Aerosystems air data and RVSM product experience; the result is a highly reliable and accurate ADAHRS for retrofit and OEM applications.

System Specifications

ADAHRS Signal Inputs/Outputs

- RS422: 2 RX/TX channels, 1 RX only channel
- ARINC 429: 2 outputs (ADC, AHRS). Outputs are configurable

1 input (Control)
- Analog: Temperature Probe
- Discretes: 4 input discretes

1 AHRS valid discrete out

Analog Output Configuration differs between aircraft types. ADAHRS analog output configuration can be configured for the specific aircraft application.

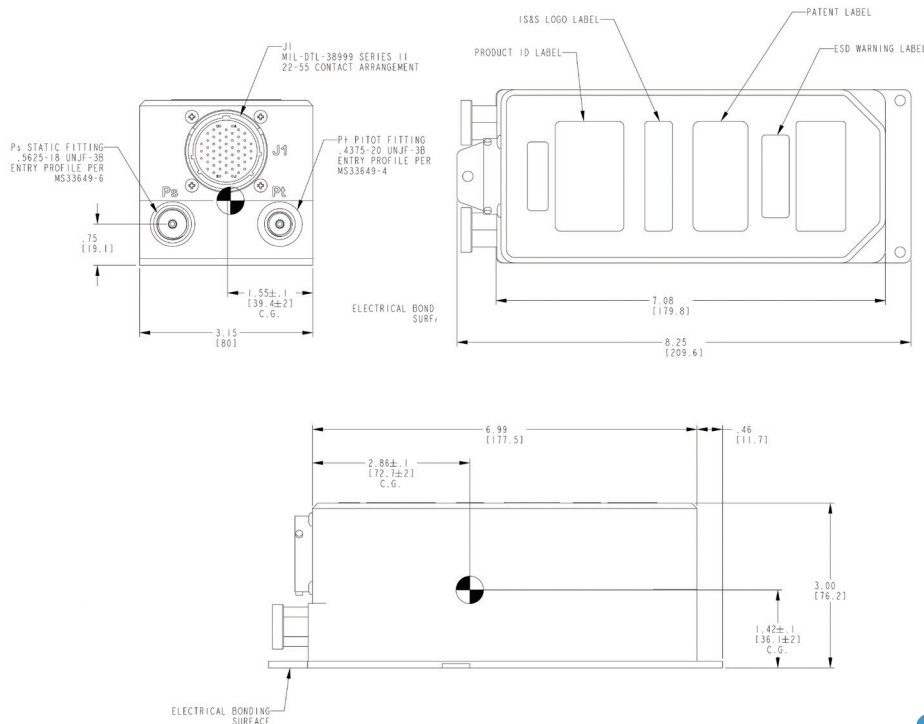
Certifications

- TSO C106 Air Data Computer
- TSO C201 Attitude and Heading Reference System
- RTCA DO-334 Compliance
 - A3 = Attitude
 - H1 = Magnetic (Slaved) Heading
 - H9 = Directional Gyro (DG) Heading
 - T1 = Slip/Skid
- Degraded attitude mode with unavailable air data is A4.

Operating Specifications

- ADAHRS Unit**
- Weight: 2.8 lbs.
- Power: 28 VDC, 12 watts
- Reliability: 45,000 hours MTBF
- Qualifications: DO 160G
DO-178C Level A
DO-254 DAL A
- Temperature: -55 to +70 deg C
- Altitude: -1000 to +55,000 ft
- Airspeed: 20 to 700 knots
- Gyro Range: +/- 500 deg/sec
- Accel Range : +/-8 g

Outline Dimensions





**Data Sheet and all information contained in it is proprietary to Innovative Aerosystems
All specifications subject to change without notice from the manufacturer.**

Innovative Aerosystems is the world's leading supplier of RVSM solutions and a trusted integrator of Cockpit Information Systems (Cockpit/IP®) across the Commercial Air Transport, Military, and Business Aviation markets. We deliver advanced, cost-effective avionics by incorporating leading-edge technologies into proven, mission-ready systems for the global aerospace industry.



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