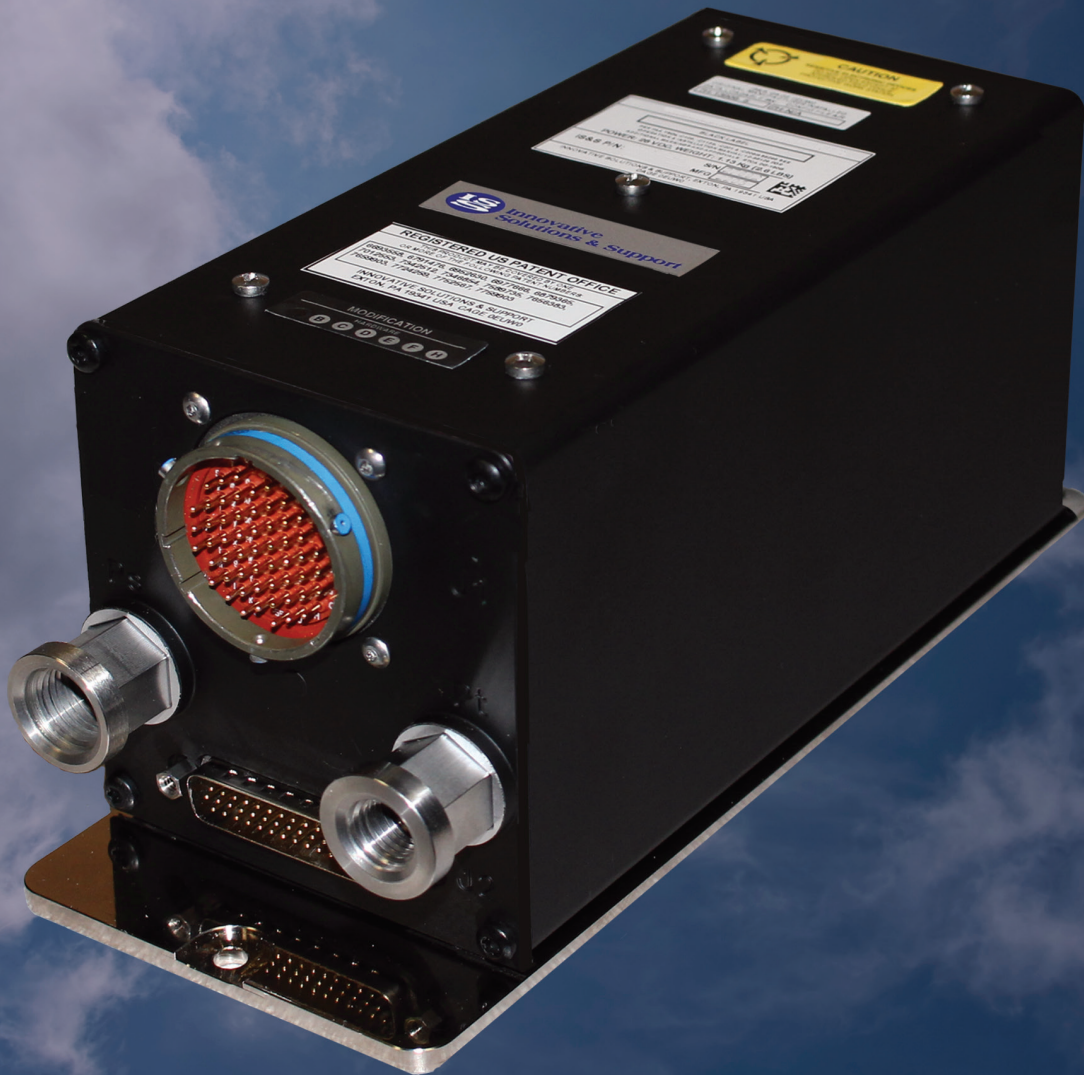




Innovative
Solutions & Support



Air Data, Attitude and Heading
Reference System (ADAHRS)

IS&S 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

The IS&S 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 IS&S 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

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.	

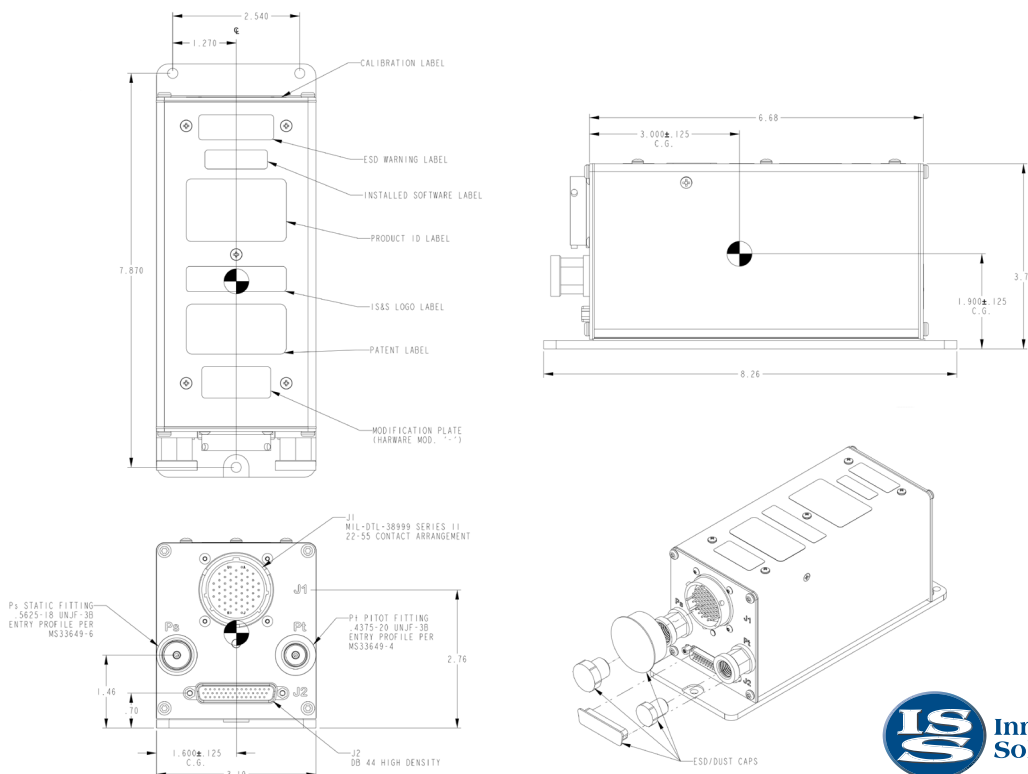
Operating Specifications

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

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

Outline Dimensions





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All specifications subject to change without notice from the manufacturer.

IS&S is the world's leading supplier of RVSM systems and integrator of Cockpit Information Systems (Cockpit/IP®) for the Commercial Air Transport, Military, and Business Aviation Markets. IS&S incorporates leading edge technologies into sophisticated, cost-effective solutions for the aerospace industry.



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