ESCADU

Enhanced Software Configurable Air Data Unit

Key Features

- TSO – C106 certified
- RTCA DO-178B level A certified
- RTCA DO-254 level A certified
- Configurable for up to 15 platforms
- Instantaneous vertical speed indication (IVSI)
- Mass – less than 2.9 lb (1.3 kg)
- Latest sensor and micro-electronics technology
- Increased environmental capability
- RVSM capability
- Encoding altimeter output (Gilham Code)
- Reliability – in excess of 10,000 hours
- ETI information available on ARINC 429 bus

Applications

- Air data parameter acquisition

Overview

All aircraft systems need the same key air data parameters such as altitude, airspeed, height deviation and temperature to ensure safe and accurate flight detail, on both rotary and fixed wing aircraft. The Curtiss-Wright Enhanced Software Configurable Air Data Unit (ESCADU) is a highly configurable, highly reliable Air Data Unit. The ESCADU computes the following aircraft functions:

- Altitude parameters
- Airspeed parameters
- Height deviation
- Mach number
- Air temperature parameters
- Maximum allowable
- Signal validities airspeed

The ESCADU is intended to be the primary supply of air data parameters to the aircraft systems. The ESCADU calculates the air data parameters from information received from the integrated pitot and static pressure sensors and an outside air temperature probe. This computed information is supplied to other aircraft systems via an ARINC 429, analog DC or discrete signals.

Traditional rotary installations have required mechanical dampening in order to remove the effects of rotor-wash from the display screens. The ESCADU is able to counter this by using electronic filtering to negate this effect, reducing cost of ownership by reducing weight and removing maintenance issues for the operators. Its features include

- Reduced Vertical Separation Minima (RVSM) capability
- Encoding altimeter (Gilham) to ARINC 575-3
- ETI information available via ARINC 429 bus
- Instantaneous vertical speed indication (IVSI)
- Configuration data file loaded by ARINC 429
- Weighs less than 2.9 lb (1.3 kg)

Specifications

The majority of the ESCADU parameters can be configured by software to tailor the unit for a specific aircraft type. Configuration data file loaded by ARINC 429 allows easy re-configuration of analog, discrete and ARINC 429 parameters. Up to 15 aircraft configurations can be stored in the unit, simplifying logistics and increasing versatility.

Output signals - digital

- Pressure altitude: 1,479 to 52,370 ft (450 to 16,000 m)
- Instantaneous vertical speed: 0 to ±10,000 ft/min
- Computed airspeed range: 15 to 579 kts
- Static air temperature: 100 to + 90ºC
- Mach number: 0 to 4.0
- Baro setting: 745 to 1,050 mBar

ARINC 429 outputs

- Static pressure
- Pressure altitude
- Barometric corrected altitude
- Vertical speed (instantaneous)
- Impact pressure – mBar
- Total pressure – mBar
- Indicated airspeed
- Computed airspeed
- Mach number
- Total air temperature
- Static air temperature
- True airspeed
- Maximum allowable airspeed

Analog DC Output

- Four configurable to any parameter/parameter derivation

Other outputs

- Encoding altimeter (Gilham) output to ARINC 575-3, 4 discrete outputs for validities or parameter switches
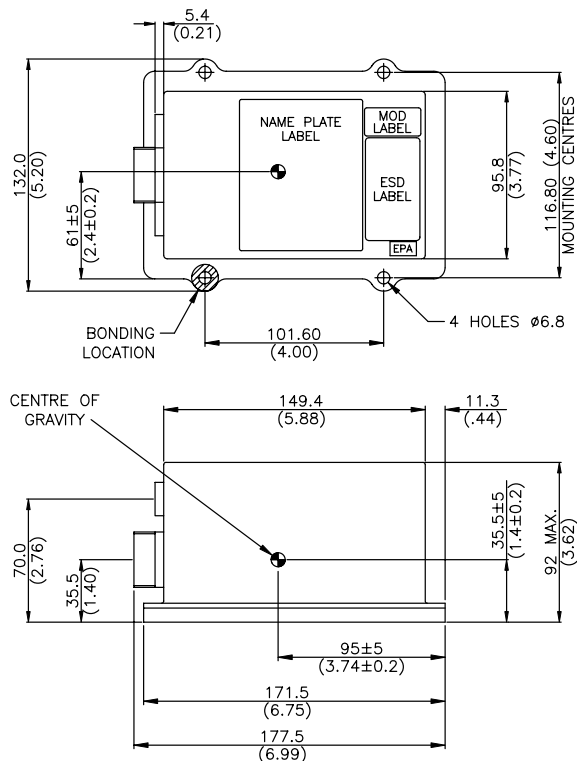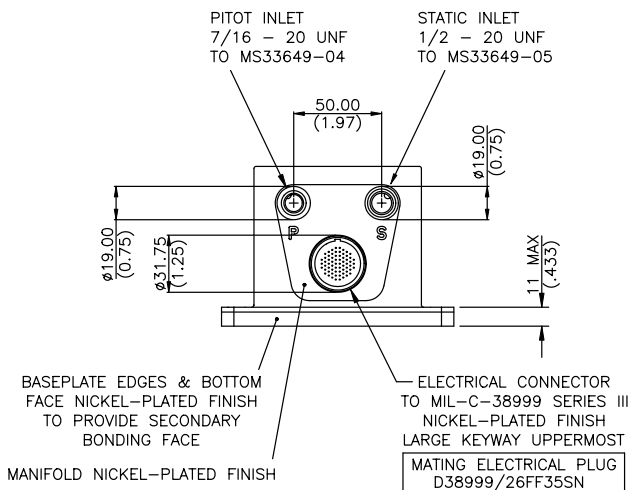- Configurable SSEC/PSEC

Environmental

- Operating temperature: -45 to +71ºC
- Reliability: In excess of 10,000 hours
- Tested and certified to: RTCA/DO-160D

Physical

- Power: 28 VDC, 15W max
- Mass: <2.9 lb (1.3 kg)

Ordering Information

Please contact Curtiss-Wright Defense Solutions.

ESCADU dimensions and connectors