



Dual Digital Air Data Computer (DDADC)

T-38 DADC - P/N 9B-81090-3

Technical Overview

The IS&S Dual Digital Air Data Computer (DDADC), P/N 9B-81090-3 is a dual channel, RVSM compliant unit. Developed as an avionics upgrade for the NASA T-38N aircraft, the DDADC contains two totally independent air data channels within a single enclosure. Each air data channel has its own set of pressure sensors that process static and pitot pressure (Ps and Pt), total temperature (Tt), angle of attack (AoA), and baro correction input data. These inputs are used to compute accurate air data information for primary flight displays, navigation, flight controls, and other aircraft systems. Extensive built in test is also provided.



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The DDADC performs a multitude of data processing functions to determine the validity of its inputs, compute output data, and indicate its operational status as well as output validity. It performs various signal processing functions to format the outputs into analog, discrete, and serial data signals, making them compatible with a wide range of interfaces. Air data supplied by the DDADC supports the operation of equipment including altimeters, mach airspeed indicators, altitude alerters, autopilot, stability augmentation system, and other instrumentation and flight control systems.

The 9B-06758-(XX) and 9B-06759-(XX) Installation Configuration Modules (ICM) are used with the 9B-81090-3 DDADC. The ICMs contain the SSEC data for the aircraft. Each DDADC channel has a dedicated ICM. The ICMs are connected to the DDADC through the front mounted connectors and remain with the aircraft by attachment of the provided lanyards.

- Dual Fully Independent Air Data Processing Channels
- Full RVSM Compliance
- Computes air data for interfacing equipment in analog, digital, and discrete formats.
- Supports operation of altimeters, airspeed indicators, autopilot controllers, and other instruments.
- Integral data checking and fault detecting operation.
- Fault response, data output control, and status indication.
- For OEM and retrofit installations
- Certifications: RTCA/DO-160E

Dual Digital Air Data Computer IS&S Model 9B-81090-3

Signal Outputs

| FWD Fine Alt Synchro Output: | MIL-A-83419C |
|----------------------------------|--------------|
| AFT Fine Synchro Output: | MIL-A-83419C |
| FWD AOA Ratio: | Synchro |
| AFT AOA Ratio: | Synchro |
| AOA Valid: | Discrete |
| AOA Indexer : | Discrete |
| DADC Fail: | Discrete |
| ARINC 429 Bus A: | Serial Data |
| ARINC 429 Bus B: | Serial Data |
| Qc Potentiometer: | Analog |
| Landing Gear Warning: | Relay |
| FWD Altimeter, 115 VAC Power: | Relay |
| AFT Altimeter, 115 VAC Power: | Relay |
| Serial Data Bus | Serial Data |

Operating Specifications

| Altitude Range: | -1000 to 65,000 ft |
|-----------------|--------------------|
| Airspeed: | 30 to 725 kts |
| Mach Number: | 0.1 to 2.0 Mach |

Signal Inputs

| Primary Power: | 28 VDC (1 amp max.) |
|---------------------------------------|--|
| Aircraft Identification: | Discrete/Jumpers |
| Indicated Total Temp: | Resistance, MIL-P-27723, 50 ohms at 0° C |
| Indicated Static Pressure: | Pneumatic |
| Indicated Total Pressure: | Pneumatic |
| System Test Switch: | Discrete |
| Serial Data Bus: | Serial Data |
| Flap Position: | Synchro |
| AOA: | Synchro (DDADC Channel 1 Only) |
| Landing Gear: | Discrete |
| Baro Setting: | MIL-A-83419C |
| Installation Configuration Module: | Serial Data |
| 115 VAC Altimeter Power Input: | Power |

Reliability:

19,127 hours each channel MTBF @ 25°C for AIC environment per MIL-HDBK-217

Weight:

15 lbs max.





2X REAR HOLD DOWN PIN-PER MS 91405 .410±.003



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