

Fortress DAFR

Data Acquisition Flight Recorder

**CURTISS-
WRIGHT**

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Key Features

- Combined voice, data, datalink and image recording (stand-alone options available)
- Enhanced data acquisition support including direct interface to a tri-axial accelerometer
- ED-112A compliant
- Designed to meet all current regulations
- Ultra compact and lightweight
 - + 8.1 lb (3.7 kg)
- Webserver for fast and free data download
- Approval to ETSO-C123c, C124c, C176a, C177a
- 90 day Ultrasonic Locator Beacon to TSO-C121b

Applications

- Crash protected recording
- Data acquisition and storage for
 - + FOQA/FDM/FDAP
 - + Aircraft performance monitoring
 - + Engine condition trend monitoring

Overview

Recorders are built to meet the latest regulations and often designed with any upcoming changes in mind. To ensure they meet the requirements of new and old aircraft, some modifications may be required, or additional data formatting hardware used. Curtiss-Wright has been manufacturing recorders since 1957 and introduced the world's first to obtain RTCA-DO178 approval for solid state recorders.

Fortress DAFR provides a complete aircraft recording solution supporting the recording of mandatory parametric flight data as well as additional data from different interfaces. This makes it idea for applications such as Flight Data Monitoring where it removes the need for a separate data acquisition unit and recorder.

Fortress DAFR also has four channels of cockpit voice recording, CPDLC recording (via ARINC 429 or ARINC 664) for up to 25 hours record capacity and image recording for two hours capacity. Fortress DAFR supports parametric data acquisition from either an ARINC 717, up to 4 ARINC 429 or dual input ARINC 664 interface.

Fortress DAFR is designed in accordance with RTCA/DO-178C and RTCA/DO-254. It meets all current FAA and EUROCAE requirements. Fortress DAFR has a 90 day ultrasonic locator beacon (ULB), certified to TSO-C121b. The core memory is expandable to support up to EUROCAE class 6 recorder requirements for CVR 25 hours recording capacity.

Fortress DAFR attaches directly to an airframe to eliminate the need for heavy mounts and equipment racks/trays while easily integrating with other systems to provide additional functionality such as

- High speed (<45 seconds) and license free flight data download at the gate via a Gigabit Ethernet link
- Enhanced EMC/Lightning protection for high reliability – especially on composite aircraft

The Fortress DAFR is supported by dedicated recorder independent power supply (RIPS), cockpit area microphone (CAM), cockpit area camera (CAC) and cockpit control unit (CCU). Supporting dual recorder installations, the CCU enables data and image distribution to two installed Fortress DAFR recorders through an integrated Ethernet switch.



Fortress DAFR key features

Specifications

Interfaces

- Flight Data Recorder (FDR)
 - + 25 hours capacity from either
 - › ARINC 717 format 64 – 4096 wps
 - › ARINC 717 FDR monitor output
 - › 4 ch ARINC 429 data at 12.5 or 100 KHz
 - › 2 channels of ARINC 664 data
- Cockpit Voice Recorder (CVR)
 - + 4 channels, 30 minutes to 25 hours duration
 - + 3 crew channels
 - + 1 cockpit area microphone channel (amplified or unamplified)
 - + Summed Audio Monitor output
- Datalink Recorder (CPDLC)
 - + 2 to 25 hours, ARINC 429 or ARINC 664
- Airborne Image Recording (AIR)
 - + 2 hours, up to 16 fps, 100BASE-T Ethernet
- Receives GMT/UTC via ARINC 429
- Comprehensive BIT including individual discrete output for each recording function
- OMS via ARINC 429
- Tri-axial accelerometer input
- Rotor tachometer input
- Gigabit Ethernet maintenance port

Electrical and Mechanical

- Power
 - + 28VDC
 - + 13W max
 - + Dual power input
- Mass: 8.1 lb (3.7 kg) including underwater locator beacon
- Dimensions (H x L x W) within
 - + 4.8 x 10.63 x 4.88" (122 x 270 x 124 mm)
- Underwater Locator Beacon: Beacon to TSO-C121b, battery and bracket included

Environmental

Adheres to ED-112A defined survival tests

- Fire intensity
 - + High: 1100°C for 60 minutes
 - + Low: 260°C for 10 hours
- Impact shock: 3,400 G for 6.5 ms
- Penetration resistance: 500 lb from 10 ft ¼ inch contact point
- Static crush: 5,000 lb for 5 mins per axis
- Shear/Tensile strength: 6,000 lb for 1 minute each axis
- Fluid immersion: Immersion in aircraft fluids for 24 hr
- Water immersion: 30 day sea water
- Hydrostatic pressure: Equivalent to depth of 20,000 ft

RTCA-DO160G Environmental Qualification

- Temperature:
 - + Operating: -55°C to 70°C
 - + Non-operating: -55°C to 85°C
- Altitude: -1,000 ft to 55,000 ft
- RTCA-DO160G categories
 - + E1ABB(R(C,C1),U2(F,F1))EWFSFTAZ(XX)AZCWXRMA3J3L3XXAC

Optional Equipment

- Cockpit Control Unit (CCU)
- Recorder Independent Power Supply (RIPS)
- Cockpit Area Camera (CAC)
- Cockpit Area Microphone (CAM)
- Flight Recorder System Accelerometer
- Ground Replay Support

Ordering Information

Please contact [Curtiss-Wright Defense Solutions](#).

TABLE 1		Ordering Information					
Part Number	ARINC-717	ARINC-429	ARINC-664	Rotor Tacho	Accelerometer	Comment	
D51707-003	1	4	1	1	Tri-axial	Std control and fault logic	
D51707-005	1	1	1	1	Tri-axial	Inverted control logic	
D51707-006	1	2	1	1	Tri-axial	Std control and fault logic	
D51707-007	1	3	1	1	Tri-axial	Std control and fault logic	
D51707-008	1	1	1	1	Tri-axial	Std control and fault logic	
D51707-010	1	4	1	1	Tri-axial	Voice and data erase	