

Current and anticipated FAA and EUROCAE requirements for crash protected recorders could be a considerable burden to your fleet and your business. A combined solution for the future also provides operational benefits today. Curtiss-Wright Controls Integrated Sensing (CWCIS) have developed the most versatile recorder available, in the most compact package, fully approved for current and anticipated requirements. On-aircraft download is achieved in less than 2 minutes and can be networked directly to a remote operational base for remote diagnostics and fault reporting.

- Less than 3.3kg (7.0lb) including under water locator beacon
- Attaches directly to airframe
- Maximum 10W of power at 28Vd.c.
- Fast Ethernet data recovery
- 25,000 hours MTBF

The Data Acquisition Flight Recorder (DAFR) is packaged as a compact unit ideal for the rotary wing or small/medium aircraft market. Importantly, this compact unit may be attached directly to the airframe without the need for bulky equipment racks or anti-vibration mounts, thus permitting optimum aircraft installation performance to be attained for lower operating costs.

Based on the successful Multi Purpose Flight Recorder (MPFR), DAFR uses state-of-the-art solid state microprocessor and memory systems. DAFR features include 4 channel cockpit voice recording for 120 minutes per channel (one wide band, 3 narrow band audio channels), a dual band rotor tachometer interface, 10 hours of flight data recording from three ARINC 429 high or low speed data bus inputs, 4 analogue potentiometer, 5 discrete and a single accelerometer input. Options exist for increased FDR memory capacities which, when coupled with the ability to configurable different parameter frame definitions allows the DAFR to be utilised across different aircraft configurations.

Information retrieval is made via a 10/100MB Fast Ethernet interface directly to a portable transfer device or analysis PC using standard network hardware and protocols, alternatively the Ethernet connection may be coupled through an aircraft based Wireless Data Link (WDL) to provide remote, autonomous data recovery. DAFR exceeds FAA, EUROCAE and UK CAA requirements for combined voice and flight data recorders and is qualified to the requirements of EUROCAE ED-55, ED-56A Amendment 1, ED-112, and FAA TSO-C123a / TSO-C124a, and RTCA/DO-160D, RTCA/DO-178B and MIL STD-810E.



### Cockpit Voice and Flight Data...

- more versatility
- more compact
- more information
- more comprehensive ground support
- less weight
- less operational costs

### Quality Approvals

CWCIS are committed to complete customer satisfaction in all products and services. International quality approvals include BS EN ISO9001:2000 and Civil Aviation Authority

[www.cwcontrols.com](http://www.cwcontrols.com)

# DAFR

## DATA ACQUISITION FLIGHT RECORDER

# DAFR

## DATA ACQUISITION FLIGHT RECORDER TYPICAL OUTLINE SPECIFICATION

### KEY FEATURES

Configurable Flight Data Recorder (FDR)	
Options:	Cockpit Voice Recorder (CVR) Combined Voice and Flight Data Recorder (CVFDR)
CVR:	4 channels x 120 minutes, rotor tachometer
FDR:	10 hours from integral Data Acquisition sources as identified in section Flight data acquisition interfaces
Data recovery:	FDR data < 1.5min, CVR data < 2min using Ethernet interface direct to network or PC

- Remote diagnostics capability
- Installation in any attitude
- Compact size, low weight
- Meets and exceeds EUROCAE ED55 and ED56A Amdt 11 and ED-112 UK CAA and FAA approved to (J)TSO-C123a and (J)TSO-C124a.

### SPECIFICATION

#### Cockpit Voice Recorder (CVR) function

Recording duration:	4 channels x 120 minutes
Audio inputs:	3 narrow band channels, 150Hz to 3.5kHz 1 single wide band area-microphone channel, 150Hz to 6.0kHz
Audio output:	1 real time monitor
Rotor Tachometer input:	single band
Playback/download:	Off-aircraft high-speed download of complete CVR record using Ethernet interface to portable PC or recovery device
Fault reporting:	Via discrete output or via web status pages
Output power:	+18V for CCU

#### Flight Data Recorder (FDR) Function

Duration:	10 hours at an equivalent data rate of 1024 WPS
Flight Data Acquisition interfaces:	3 ARINC 429 (high / low speed for data acquisition) 1 Accelerometer Input 5 Discrete Inputs ( 0 - 28Vdc) 4 analogue Inputs (3 wire including 5Vdc excitation)
Playback/download:	On- or off-aircraft high speed downloads of complete FDR record using Ethernet interface into portable PC or recovery device.
Fault reporting:	Via discrete output or via web status pages

#### MPFR Common to all configurations

Locator beacon:	Fitted with miniature ultrasonic locator beacon, to TSO-C121
Electrical power:	28Vdc, 10W max
Cooling:	Free air convection, no forced cooling
Connector:	MIL-C-38999 Series III.
Environmental:	RTCA/DO-160D (E2BBB[U/T]EWFD FSZZAZZWH A2F3XAA)
Operating temperature:	-55°C to +70°C
Storage temperature:	-55°C to +85°C
Altitude:	-1,500ft to +55,000ft
Lightning protection:	to AC20-136
Crash protection:	Exceeds ED-112, ED-55, ED-56A, Amdt 1, TSO-C123a, TSO-C124a
Impact:	3,400g for 6.5 msec
High temp fire:	1100°C for 60 minutes
Low temp fire:	260°C for 10 hours
Static crush:	2,270kg for 5 minutes
Penetration:	227kg from 3m
Deep water immersion:	60MPa (20,000ft)
MTBF:	25,000 hours-fixed wing 10,000 hours - rotary wing
Software level:	RTCA/DO -178B Level D, Field re-programmable via Ethernet interface

#### Dimensions

Size:	253 x 118 x 89mm (10 x 4.6 x 3.5 in) including ULB
Weight:	<3.2kg (7.0lb) including Underwater Locator Beacon (ULB)

#### Optional Equipment

Miniature Cockpit Area Microphone (CAM)
Slimline Cockpit Control Unit (CCU) (single or dual recorder support), NVG option
Mounting adapter for ARINC 757 retrofit installations
Portable Replay Equipment (PRE)
Flight Data Acquisition unit (FDAU)
Recorder Independent Power Supply

This data sheet provides basic technical details for the Data Acquisition Flight Recorder (DAFR) product.

For further information please contact the sales department.

#### Curtiss-Wright Controls Integrated Sensing

**Avionics & Electronics**  
Penny & Giles Aerospace Ltd  
1 Airfield Road  
Christchurch  
Dorset BH23 3TH  
United Kingdom  
+44 (0) 1202 481771  
+44 (0) 1202 484846 Fax  
avionics@pennyandgiles.com

#### Penny & Giles Controls Inc

5875 Obispo Avenue  
Long Beach  
CA 90805  
Telephone: (562) 531-6500 X.300  
Fax: (562) 531-4020  
us.sales@PennyandGiles.com

Innovation In Motion

**CURTISS  
WRIGHT** Controls, Inc.  
Integrated Sensing