



FA5300 Modular Airborne Data Recorder/Acquisition System

Flexible, high-speed recording and storage of critical data



The Acron Aviation FA5300 Modular Airborne Data Recorder/Acquisition System (MADRAS) provides a highly dependable, configurable high-speed recording and data storage unit for helicopters, business aviation, military aircraft and unique-mission vehicles.

Installed as a single Line Replaceable Unit (LRU) with proven performance and reliability, the FA5300 provides operators with the ability to customize data acquisition and inputs and outputs to their individual aircraft. The FA5300 records up to 2,048 words-per-second (wps) for a minimum of 25 hours, and has the capability to record four channels of high-quality audio for up to two hours. In addition, the FA5300 is able to record data over the ARINC 664 bus.

Operational costs and repairs are kept to a minimum with the FA5300 MADRAS unit's field-proven mean-time-between-failure (MTBF) rate of more than 25,000 hours. Additionally, control units, microphones, accelerometers and installation accessories are also available for aircraft in need of tailored recording solutions.

The MADRAS family provides operators with the ability to quickly download and analyze flight data for safety and preventative maintenance investigations. The units share the same common ground support equipment as the FA2100 Cockpit Voice Recorder (CVR) and Flight Data Recorder (FDR). This data helps accident investigators as well as provides thousands of parameters of data able for Flight Data Monitoring (FDM)/Flight Operations Quality Assurance (FOQA) supporting airlines Standard Operating Procedures (SOP).

Key Features

- > Data acquisition and data input
- > Aircraft configurable
- > Single-LRU provides flight data acquisition with data recording
- > Optional voice recording
- > 2 hours of high-quality audio recording
- > 25 hours of flight data recording at 2,048 wps
 - 1,024 wps of ARINC 717 data
 - 1,024 wps of acquired analog/digital/discrete data
- > MTBF > 25,000 hours
- > Wide range of analog, digital and discrete inputs
- > ARINC 664 input
- > Control units, microphones, accelerometers and installation accessories are available
- > Common ground support equipment as the FA2100 CVR and FDR
- > RIPS option



Specifications

FA5300 MADRAS		
PHYSICAL		
Height	6.57 in. (167 mm)	
Width	5.0 in. (12.70 cm)	
Depth	12.23 in. (310.6 mm)	
Weight	8.5 lb. (3.9 kg); add 1.7 lbs. (0.8 kg) with RIPS	
POWER		
Requirements	28 VDC	
RECORDING		
Time	25 hrs. of flight data storage (minimum) and 120 min. high-quality audio	
Channels	4 audio input channels, 1 data link channel and up to 64 virtual links over the ARINC 664 bus	
CONNECTORS		
Main	Three MIL-DTL38999 connectors	
ENVIRONMENTAL		
Temperature	Operating -55 °C to +70 °C / Non-operating -55 °C to +85 °C	
Altitude	Operating: -1,000 ft. to 55,000 ft	
Vibration	Standard and robust levels	
Penetration	ED-112: 500 lb./10 ft./¼-in. probe	
Static Crush	ED-112: 5,000 lb.	
Fire Protection	ED-112: 50,000 BTU/sq. ft./hr. for 60 min. at 1100 °C; 10 hrs. at 260 °C	
Impact	ED-112: 3,400 G, 6.5 ms, half sine shock wave	
CERTIFICATIONS		
Product	FAA TSO-C121, C123b, C124b, C155a and C177	
Company	ISO 9001:2008 and AS9100:2009 Rev. C Certified	
SPECIFICATIONS		
Regulatory	EUROCAE MOPS, ED-112, RTCA/DO-160G, RTCA/DO-178B, DO-254	
Industry	ARINC 429, 664, 717, 747, 757, 757A	
ADDITIONAL FEATURES		
Underwater Acoustic Beacon	Six-year battery and bracket supplied with unit	
Data Acquisition Channel Options	Analog	Up to 37* single-ended or 18* differential
	Discrete	Up to 37* shunt or series
	Synchro	Up to 4*
	Frequency	Up to 4*
	ARINC 429	8, high- or low-speed
	ARINC 664	Twisted pair or fiber optic

*Analog, Discrete, Synchro and Frequency channels share configurable inputs.

Acron Aviation FA5300 MADRAS

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