

Installation and Operation Manual

FD70ARM-G

7 Inch Dual LCD System





Table of Contents

General Information	3
Angled Views	3
Additional Information	3
Specifications	4
Installation Instructions	4
Power	4
Technical Drawing - Base	5
Wiring Suggestions	6
S-Video/Composite & Audio Wiring	6
VGA Wiring	7
Power & Ground Wiring	8
Power/Video Pinouts	9-11
Operation Instructions	12
Monitor Control Buttons	12
Technical Drawing	13
Technical Support	14
Instructions for Continued Airworthiness	14
Warranty	15
Log of Revisions	16



General Information

The FD70ARM-G is a 7" Dual LCD System, utilizing the latest version of our popular 7" Widescreen Display. Each arm unit is made of two separate parts, the metal enclosed LCD screen and the articulating arm.

Built with retrofit aircraft integration in mind, these displays can switch between three video input sources using the buttons on the bezel or the Infrared Remote.

The arms have both a hinge and a pivot point, can rotate 150° around the attach point at the base, and 90° at the bottom of the LCD. This mount will allow the monitors to tilt forward or backward from the passenger up to 20°.

Angled Views



Additional Information

The FD70ARM-G is made of all metal components. The milled aluminium arms represent the evolution of several design enhancements for an optimum removable mounting solution. As a dual LCD system, the FD70ARM-G was designed to be used with a base receptacle; the FDBASE-2G. The following bases can be used: FDBASE-FL, FDBASE-1G, FDBASE Ver SDI and the FDBASE.

The 7" Widescreen LCDs utilize a state of the art digital video decoding chipset for the analog video input. The three video sources in order of picture quality are VGA (computer graphics, like Moving Maps), and two Composite Video (DVD, Camera or VCR). Both NTSC and PAL formats are auto-detected.

The FD70ARM-G can also be connected to existing video switchers and can take composite video inputs from selector interface boxes. In this case, multiple input sources can be selected and displayed on the monitors.

The FD70ARM-G is also available as a single unit in either the left or right configuration.

Specifications

Display Type	7" TFT Color LCD
Supported Resolutions	640x480 ~ 1024x768
Display Brightness	450 cd/m ²
Contrast Ratio	500:1
Dimensions	6.80" (W) x 4.75" (H) x 1.20" (D)
LCD Dimension	6.00" (W) x 3.60" (H)
Mount Dimension	7" (W) x 3.9" (H) x 1.5" (D)
Total Weight (2 Display & Dual Base)	4.6 lbs.
Viewing Angle	140°/120°
Mount Type	Articulating Arm
Power	12VDC @ .6 Amps 28VDC @ .3 Amps
PC Video Input	VGA (Analog RGB 15 pin D-sub)
Standard Video Input	2 Composite Video
Video Type Supported	NTSC, PAL
Screen Control	On-Screen Display Menu
Remote Control	IR, included
Materials	Aluminum

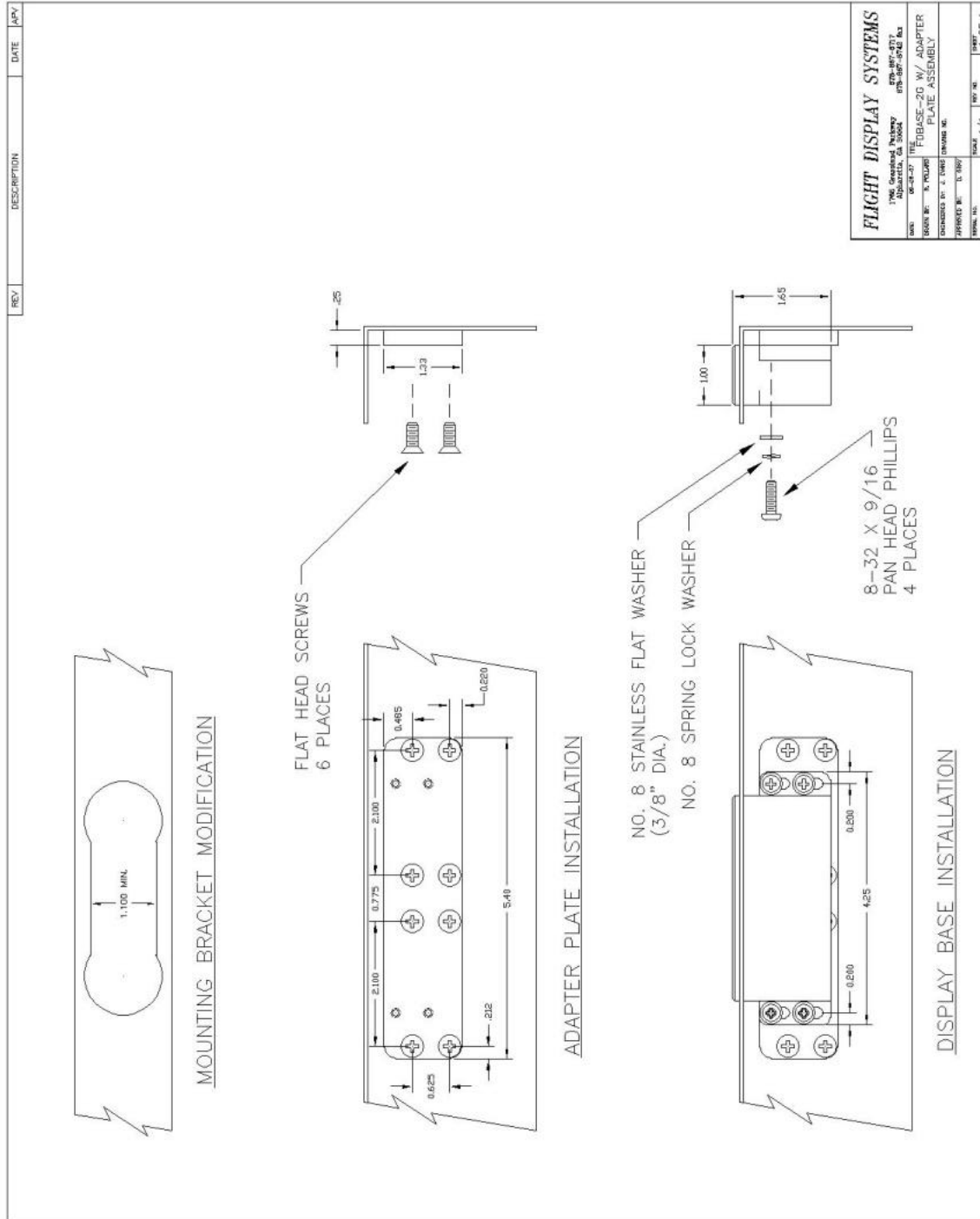
Installation Instructions

All cabin entertainment equipment, such as the FD70ARM-G, should be installed on a non-essential bus and have a dedicated circuit breaker. It is a requirement that a switch be installed in the cockpit so that the pilot can de-energize the entertainment system should it become necessary.

Power

The monitors in this dual system are **12-28VDC** monitors that require 0.3 Amps (@28V) to 0.6 Amps (@12V) of power to operate.

Technical Drawing - Base



Wiring Suggestions

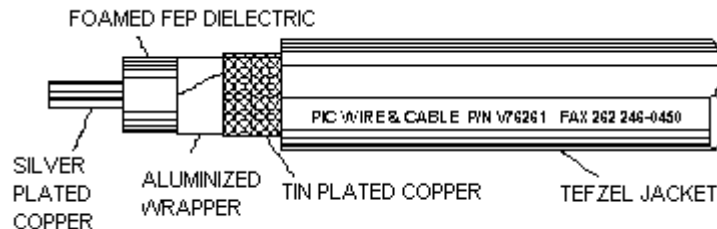
All shields should be grounded to the connector at the source, and floating at the display.

Avoid routing video wiring parallel to:

- AC wiring
- Strobe wiring
- DC motor supply cables
- Inverter cabling
- Or any other potential noise source.

S-Video/Composite and Audio Wiring

Recommended cable for s-video and audio purposes is PIC 75 Ohm Coax, P/N V76261. This is a lightweight, flexible, and low signal loss cable which meets FAA flammability requirements of FAR 23.1359(d), FAR 25.853(a) and FAR 25.869(a)(4).

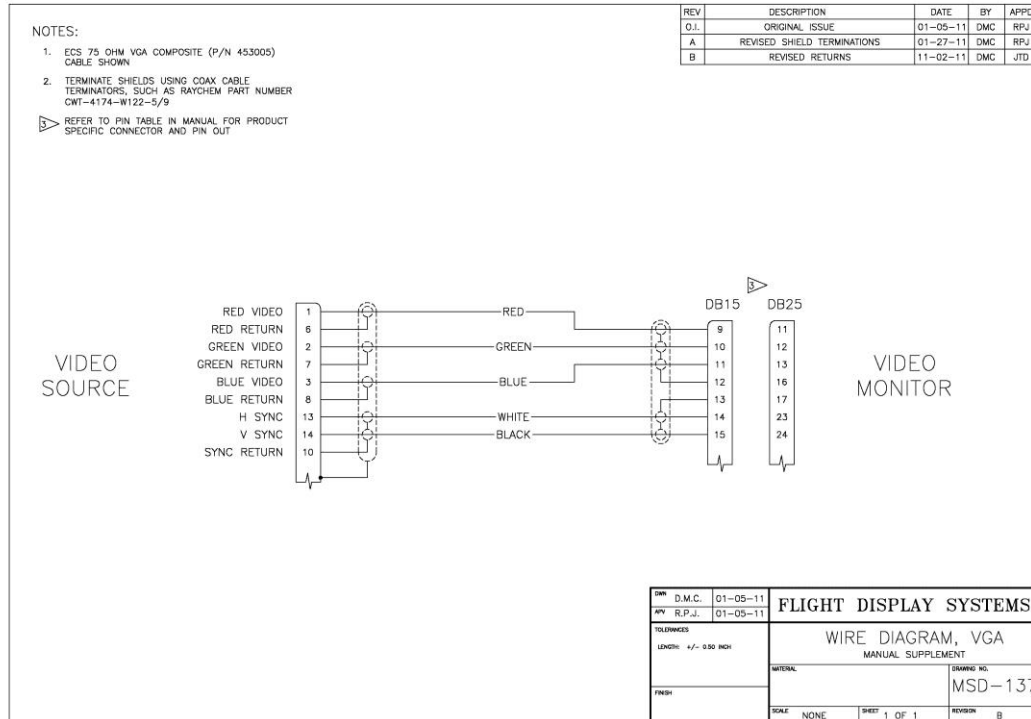


Similar aviation coaxial cable can be used from other vendors, as well.

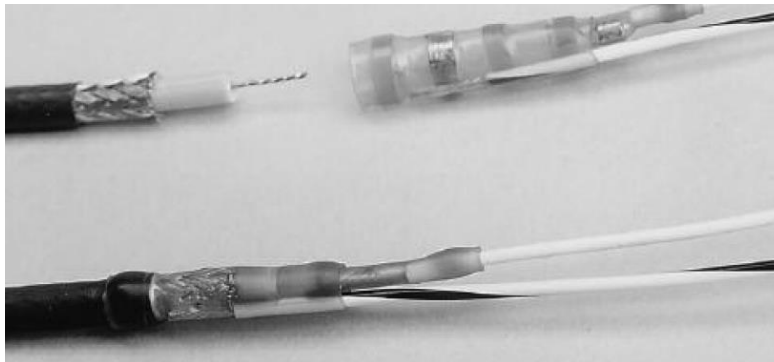
Some aircraft are prone to AC noise - we recommend adding to the composite source a 75 Ohm video isolation transformer such as Deerfield Laboratory, Inc. Part No. 162-1 (www.deerfieldlab.com, (650) 632-4090). In most cases this should be added to the video output of the source.

VGA Wiring

Recommended cable for VGA purpose is ECS P/N 453005. This is a single shielded cable containing 5 separate coaxial cables, color-coded to match the functions of the wires.



We recommend coax cables be terminated using solder sleeve coaxial cable terminators such as Raychem Part Number CWT-4174-W122-5/9.



Power and Ground Wiring

This is a 28VDC monitor that requires 1.5 amps of power to operate. To operate properly this monitor requires an input voltage of 18-29VDC.

The rated current of the equipment and associated voltage drop should be taken into consideration when selecting wire gauge. The following example is based on an install with a 28VDC power system and a total of 50 feet of wire between the circuit breaker, monitor and ground.

Example: 22awg wire has 16.2 Ohms per 1000 feet, this equates to .81 Ohms for 50 feet. 1.5 Amps of current on .81 Ohms will drop 1.22 Volts.

Resistance of Wire Type M22759/16-** (** = Gauge)	
Gauge (AWG)	OHMS/1000'
24	26.20
22	16.20
20	9.88
16	4.81
12	2.02
10	1.26
8	.701

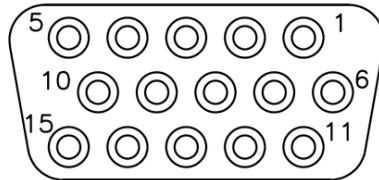
Also, use short heavy gauge wire and a clean tight connection for ground.

It is the installer's responsibility to understand the product's requirements to install the product in compliance with industry standards and safety.

Pinout for High Density DB-15 Receptacle

Connector
Crimp Contacts

P/N: M24308/2-286 or Equivalent
P/N: M39029/57-354 or Equivalent



MATING FACE

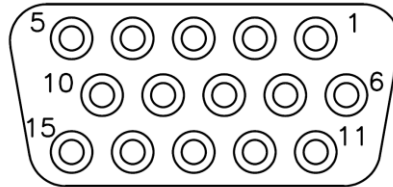
Pin Number	Description
1	12-28VDC Power
2	12-28VDC Ground
3	N/C
4	Composite Video 1 - Signal
5	Composite Video 1 - Shield
6	N/C
7	Composite Video 2 - Signal
8	Composite Video 2 - Shield
9	Red Video (Pin 1 on Standard VGA)
10	Green Video (Pin 2 on Standard VGA)
11	Blue Video (Pin 3 on Standard VGA)
12	Red Ground (Pin 6 on Standard VGA)
13	Green Ground (Pin 7 on Standard VGA)
14	Horizontal Sync (Pin 13 on Standard VGA)
15	Vertical Sync (Pin 14 on Standard VGA)

For Use with the Select CMS

Supplied mounted in Arm Mount

Connector
 Crimp Contacts

P/N: M24308/2-286 or Equivalent
 P/N: M39029/57-354 or Equivalent



MATING FACE

Pin Number	Description
1	28VDC Power
2	28VDC Ground
3	N/C
4	N/C
5	N/C
6	N/C
7	N/C
8	N/C
9	Video Red (-) (T568B Cat5 Pin 1)
10	Video Red (+) (T568B Cat5 Pin 2)
11	Video Blue (-) (T568B Cat5 Pin 3)
12	Video Blue (+) (T568B Cat5 Pin 6)
13	Video Green (-) (T568B Cat5 Pin 5)
14	Video Green (+) (T568B Cat5 Pin 4)
15	Video Ground (T568B Cat5 Pin 8)

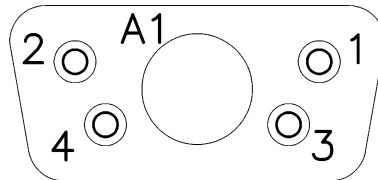
Note: Cat5 Pin 7 is not used

Pin out for P1 (5W1 Combo-D Female Receptacle)

Supplied, mounted in FDBASE Ver SDI

Connector
 Coax Contact

P/N: Conec – 3005W1SM99A10X
 P/N: Conec – 132J30029X (for use with RG179)*
 *Other cable type contacts available from Conec



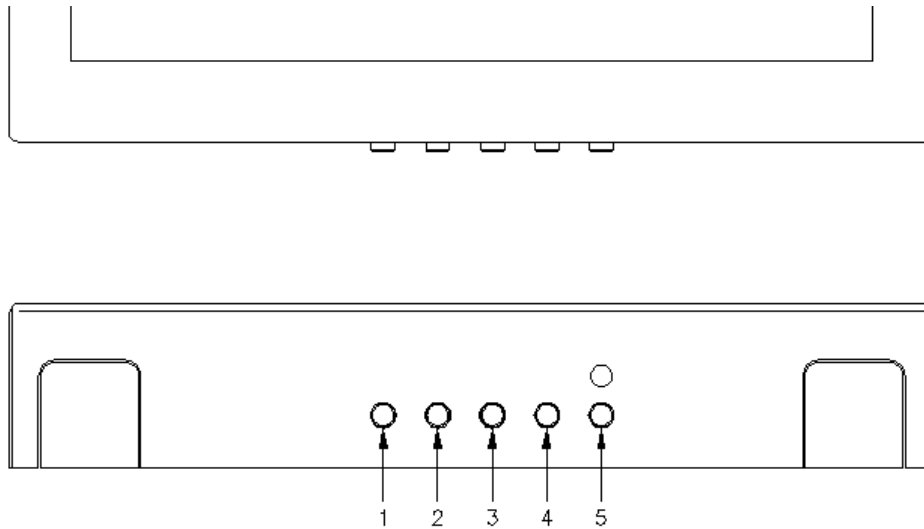
MATING FACE

Pin Number	Description
1	28VDC Power
2	28VDC Ground
3	N/C
4	N/C
A1	HDSDI IN

Operation Instructions

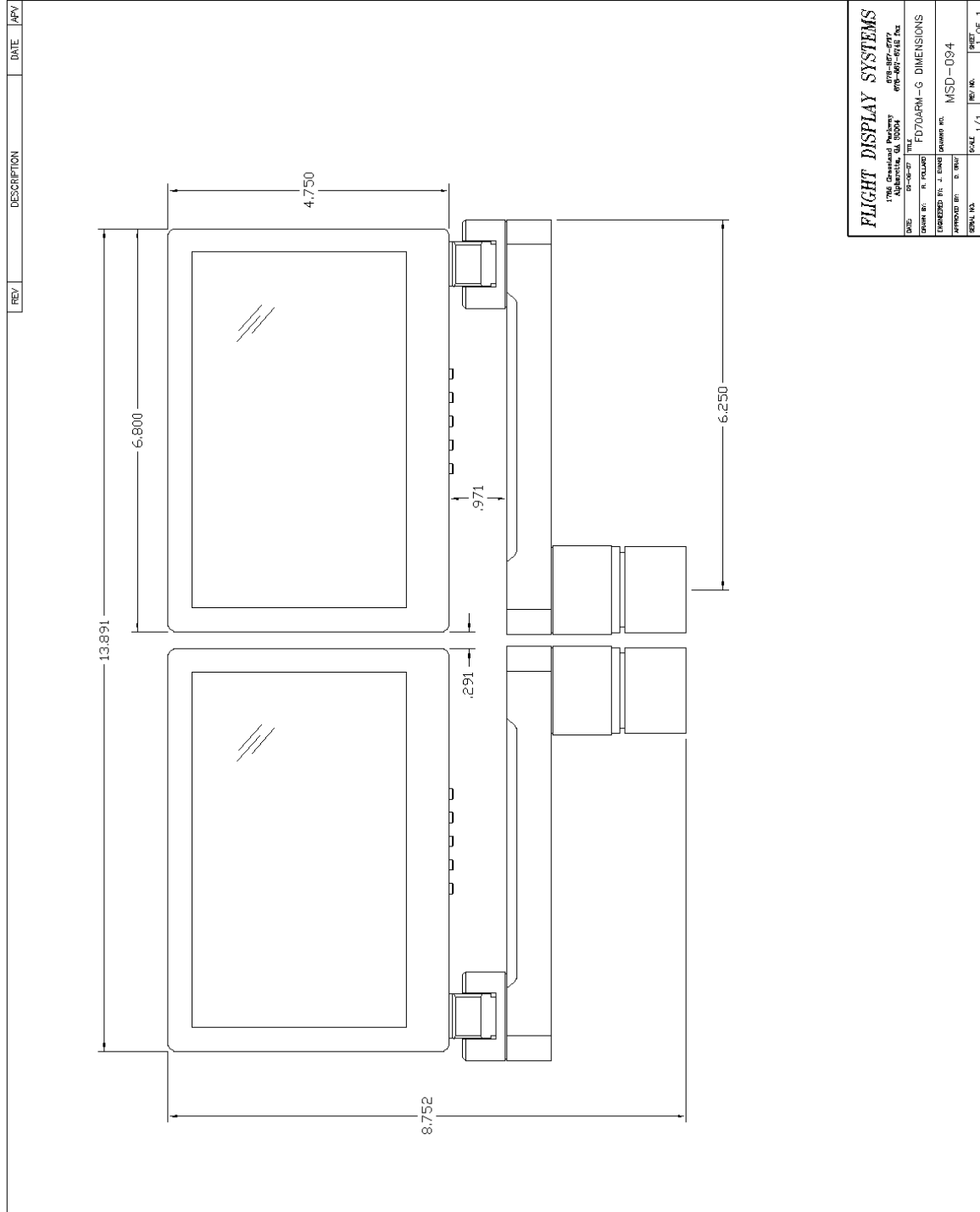
The FD70ARM-G is continuously on but can be de-energized by removing power from the entertainment system. No pilot or aircrew action is necessary during flight or ground operation. Passengers can change the video output from the FD70ARM-G using the video source select switch on the LCD monitor, or remotely throughout the cabin with the included IR remotes.

Monitor Control Buttons



BUTTON	FUNCTION	DESCRIPTION
1	POWER	Press to turn the monitor on if currently off. Hold to turn the monitor off.
2	SOURCE	Press to switch between sources.
3	UP	Press to increase the value of a menu item.
4	DOWN	Press to decrease the value of a menu item.
5	MENU	Press to activate Menu.

Technical Drawing





Technical Support

Should you have any questions concerning this product or other FDS Avionics Corp. products, please contact our Product Support representatives at (470) 239-7421.

FDS Avionics Corp.
6435 Shiloh Road
Alpharetta, GA 30005
Phone: 470-239-7400
Fax: 470-239-7439
Email: sales@FDSAvionics.com

For further product information, technical data and sample wiring diagrams, please click on the **Dealers** section of our web site at www.FDSAvionics.com

Instructions for Continued Airworthiness

The FD70ARM-G is designed not to require regular general maintenance.



Warranty Information

All FDS Avionics Corp. (FDS) products are warranted to be free from material or manufacturing defects for a period of 24 months from the date of shipment for General Aviation customers or 12 months from the date of shipment for Government/Special Mission customers. Any material or repair workmanship for in warranty repair service will be specifically warranted for 90 days or the remainder of the original warranty period, whichever is longer. If the original warranty period has expired, the 90 day repair warranty is limited to the material and workmanship specific to the repair activity completed.

The following conditions are exclusions to warranty coverage:

1. Labor costs associated with installation, removal or reinstallation of any product.
2. Damage to or malfunction caused by any unauthorized alteration made to the product.
3. Resolving signal quality issues caused by externally generated noise introduced by aircraft electrical systems or other components connected to any FDS product.
4. Any malfunction caused by improper installation or connection to aircraft wiring, industry standard cabin management/ inflight entertainment systems, or third party commercial equipment not specifically identified as compatible with FDS products.
5. Any malfunction caused by installation that does not conform to precautions associated with operating environments listed in the operating manual or consistent with industry best practices such as; high temperature, adequate ventilation, high humidity, high dust, or power surges.
6. Cosmetic damage or damage to internal components caused by installation or removal, failure to follow installation or operating instructions, or any neglect or misuse of the product.
7. Any product that is returned for service with a broken tamper evident seal, indicating tampering or improper handling of the product by an unauthorized person. Violation of product tamper evident seals or modification of factory installed serial and PMA labels voids any warranty, either expressed or implied.

The FDS technical support team is available to provide distance troubleshooting support during business hours (8:00am to 5:00pm EST) Monday through Friday at (470) 239-7421.

Many repair requests can be resolved through distance support and may not require return of merchandise to the factory. If a product must be returned to the factory for repair, an RMA number will be issued as directed by the technical support team and communicated by the repair coordinator.

Upon request by the customer, FDS may send a service technician onsite to repair any non-PMA products. The travel expenses incurred to include transportation, lodging and meals along with the technician's hourly rate shall be payable by the customer in accordance with FDS' applicable rates and procedures.

FDS Avionics Corp. will, upon receipt of returned merchandise, remanufacture or replace the unit at our discretion and return the product by Ground Return Shipping. Express return shipment will be the responsibility of the sender.

This warranty is not transferable.

Any implied warranties expire at the express limited warranty expiration date. FDS shall not be held liable for any indirect, special, punitive, incidental or consequential damages.

Some states do not allow limitation on the length of an implied warranty. In such states, the exclusions or limitations of this limited warranty may not apply.



Log of Revisions

Rev	Date	Page	Description
A	09/12/2007	---	---
B	02/26/2009	2,10	Updated specifications, warranty info
C	01/08/2010	1,2,5,6,7,11	Update picture, specs, pinout, monitor buttons, assembly drawing
D	04/11/2011	8	Added pinout for FD70ARM-G Ver SDI, updated VGA wiring
E	5/22/2017	All	New Corporate Name, New Branding, New Warranty, Drawings,etc.

