



Installation and Operation Manual

FD171CV VER HDSDI

FD171CV VER HDSDI-DVI

FD171CV VER HDSDI-PM

17.1” High-Definition Widescreen LCD





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General Information

The FD171CV VER HDSOI, FD171CV VER HDSOI-DVI, AND FD171CV VER HDSOI-PM are 17.1" High-Definition Widescreen LCDs which have features that allow installation in the smallest of mounting areas with the minimum of interface equipment. Built with retrofit aircraft integration in mind, this display can switch between four video input sources using an infrared remote.

Front View



Additional Information

The FD171CV VER HDSOI, FD171CV VER HDSOI-DVI and FD171CV VER HDSOI-PM utilize a state of the art digital video decoding chipset for the analog video input. There are FOUR video source inputs available. They are in order of picture quality: (1)HDSOI, (1) VGA, (1) S-Video, and (1) Composite Video. In addition, the FD171CV VER HDSOI-DVI has (1) DVI Input. The FD171CV VER HDSOI and the FD171CV VER HDSOI-PM have (1) HDSOI Loop Through Driver Output.

The FD171CV VER HDSOI, FD171CV VER-HDSOI-DVI and the FD171CV-HDSOI-PM can also be connected to existing video switchers and use only a composite video input from a selector interface box. In this case, the IR remote will only be used to set up the screen after installation. e.g. adjust brightness, contrast, etc.

The LCD is protected with a .060" Lexan lens. The purpose of this lens is to prevent scratching of the LCD and reduce glare. The FD171CV VER HDSOI, FD171CV VER HDSOI-DVI and FD171CV VER HDSOI-PM are made of all metal components.

The FD171CV VER HDSOI-PM has firmware that presents side-by-side picture in picture images in 16:9 aspect ratio.



Specifications

Display Type	17.1" TFT Color LCD	
Display Color	16.7 Million Colors	
Native Resolution	1440 x 900	
Video Sources	(1) HD-SDI, (1) VGA, (1) S-Video, (1) Composite. * FD171CV VER HDSDI-DVI only (1) DVI-D ** FD171CV VER HDSDI & FD171CV VER HDSDI-PM only (1) HD-SDI Loop-Through Driver Out	
Supported Video Input (Composite and S-Video)	NTSC	(525/59.94i)
	PAL	(625/50i)
Supported Input Resolutions (VGA and DVI)	VGA - WUXGA (640x480 - 1920x1200) @ 60 Hz	
Supported Input Resolutions (SD-SDI and HD-SDI)	SMPTE-274	1080i(60/59.94/50) 1080P(30/29.97/25/24/24sF/23.98/23.98sF)
	SMPTE-296M	720P(50/59.94/60)
	SMPTE-125M	480i(59.94)
	ITU-R.BT.656	576i(50)
	2K Format	2048 x 1080(23.98psf/24psf/23.98p/24p)
	Aspect Ratio	16:10
Brightness	250 cd/m ²	
Dimensions	16.25" (W) x 11.00" (H) x 1.75" (D)	
Display Size	14.36" (W) x 8.950" (H)	
Weight	7.30 Lb.	
Power @ Amp	28V DC @ 1.3A Max. Cont. Steady-State	
Screen Control	On Screen Display Menu	
Materials	Aluminum	
Pixel Pitch	.255 mm X .255 mm	
Operating Temperature	0-50° C (32-122° F)	
Test Certifications	N/A	



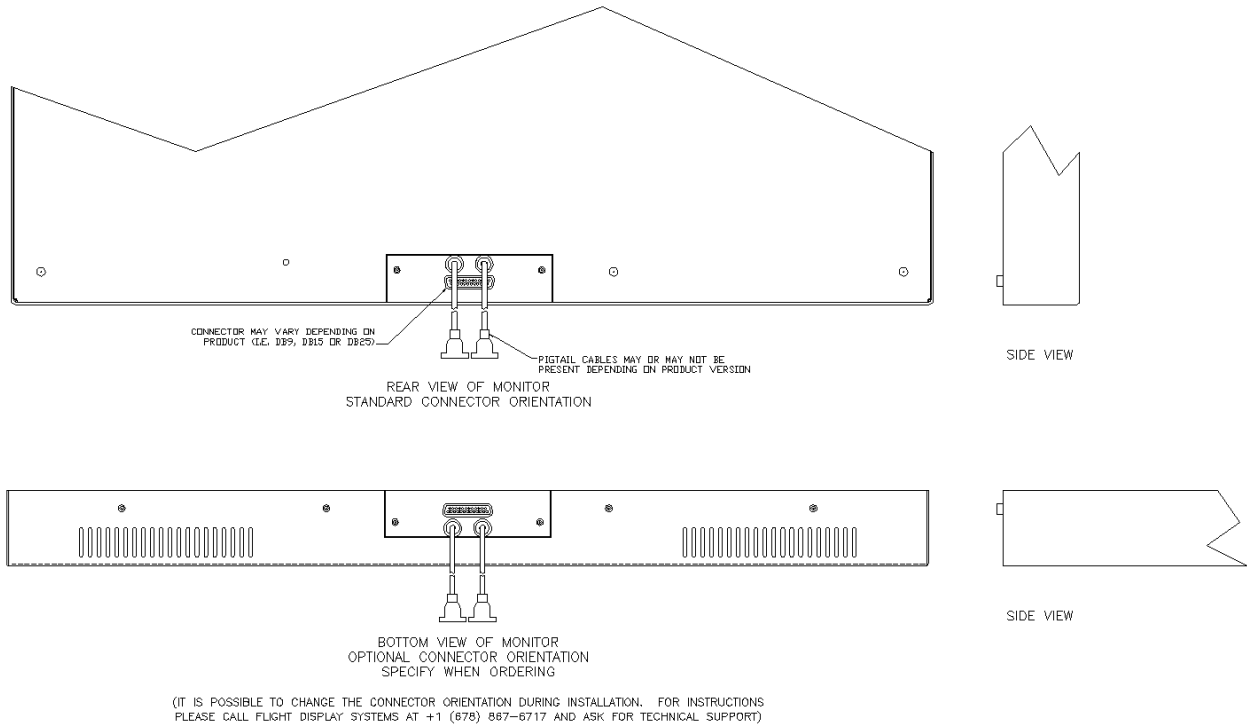
Installation Instructions

All cabin entertainment equipment, such as the FD171CV VER HDSDI, FD171CV VER HDSDI-DVI and FD171CV VER HDSDI-PM should be installed on a non-essential bus and have a dedicated circuit breaker.

There are eight 8-32 UNC mounting holes located on the sides and back of the display. Four holes are located at the four corners of the back and four holes are located two on each side of the bezel. It is sufficient to mount the display by four attach points.

Mounting against the bulkhead or on a bracket: The unit can be mounted internal, external, or partially internal to the bulkhead. It is recommended that you leave about ¼ inch of space around the rear, top and bottom of the display for the exhaust fan to have circulating air. When mounting from inside the bulkhead it is possible to have only the LCD visible to the cabin. The unit will come on automatically upon power application and if using an external video source selection box the IR is not needed. If you are using the IR to change the video source selection then you need to have the IR LED visible to the cabin.

Rear Connector Orientation – The rear connector of this monitor can be mounted horizontally (connector perpendicular to rear of monitor) or vertically (connector perpendicular to bottom of monitor) in order to give you the most convenient mounting options. By default, this monitor's connector ships in the rear/horizontal position. FDS Avionics Corp. will ship the unit with the optional bottom/vertical mounting connector configuration if specified at the time of order; contact your local sales representative for assistance. It is possible to change the connector orientation at the time of installation. For instructions on how to change the connector orientation please call FDS Avionics Corp. at +1 (470) 239-7421 and ask for Technical Support.



Power

This is a **28VDC** monitor that requires 1.3 Amps of power to operate. The unit turns on automatically upon power application.

Wiring Suggestions

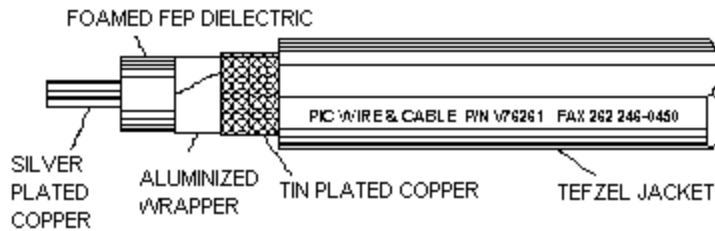
All shields should be grounded to the connector at the source, and floating at the display.

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

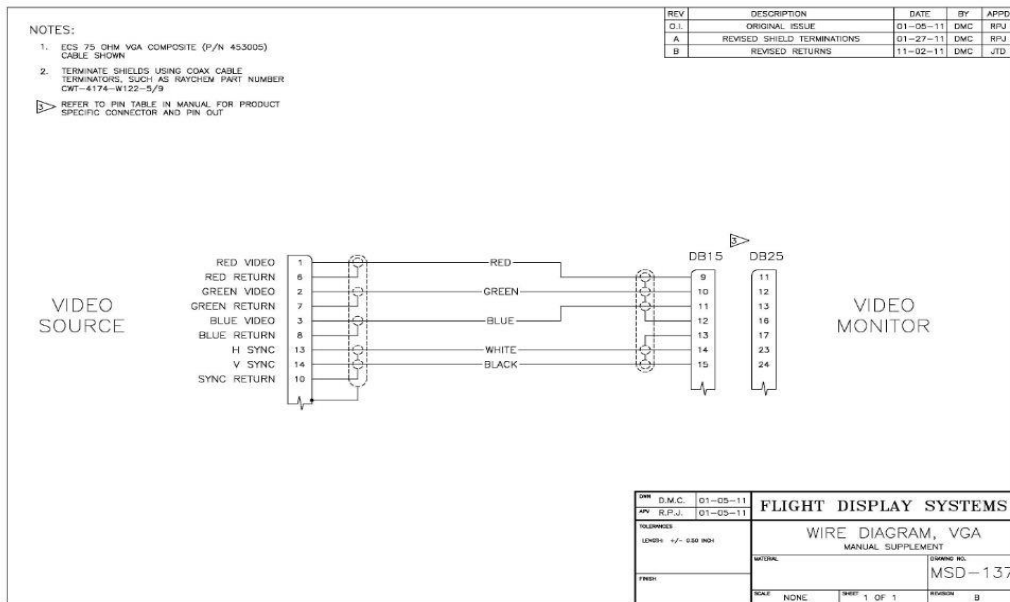
Recommended cable for s-video/composite and audio purposes is PIC 75 Ohm Coax, P/N V76261. This is a lightweight, flexible, and low signal loss cable which meets FAA flammability requirements of FAR 23.1359(d), FAR 25.853(a) and FAR 25.869(a)(4).



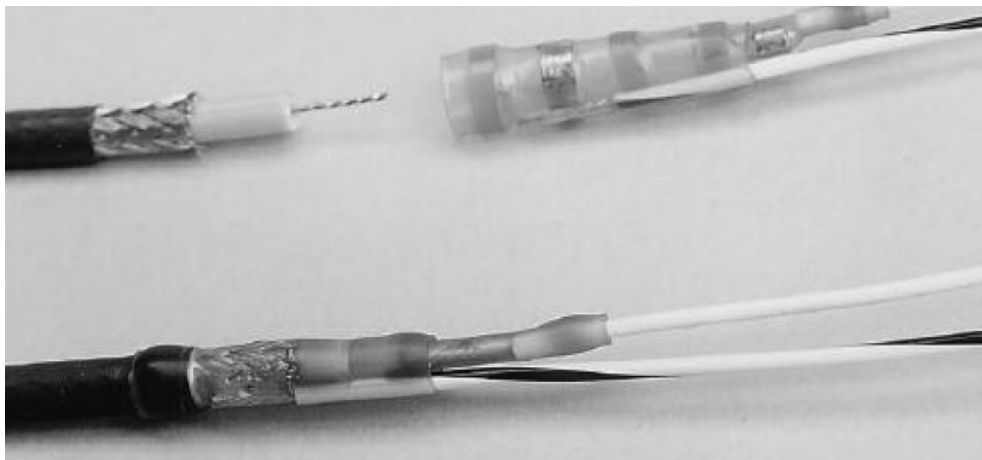
Similar aviation coaxial cable can be used from other vendors, as well. Some aircraft are prone to AC noise - we recommend adding to the composite source a 75Ohm video isolation transformer such as Deerfield Laboratory, Inc. Part No. 162-1 (www.deerfieldlab.com, (650) 632-4090). In most cases this should 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.



Coax cables should be terminated using solder sleeve coaxial cable terminators, Raychem P/N: CWT-4174-W122-5/9





Power and Ground Wiring

This is a 28VDC monitor that requires 1.3 amps of power to operate. To operate properly this monitor requires an input voltage of 18-28VDC.

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. 1.3 Amps of current on .81 Ohms will drop 1.05 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.



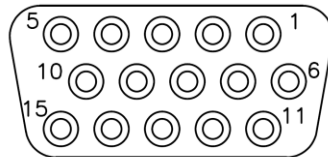
Power/Video

P1 (Power/Video)

High Density DB-15 Receptacle (supplied)

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	Composite Video 1 - Signal
4	Composite Video 1 - Shield
5	S-Video Y Signal
6	S-Video Y Shield
7	S-Video C Signal
8	S-Video C 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	Video Ground
13	Sync Ground
14	Horizontal Sync (Pin 13 on Standard VGA)
15	Vertical Sync (Pin 14 on Standard VGA)

P2 (HDSDI Input)

P3* (HDSDI Loop-Through)

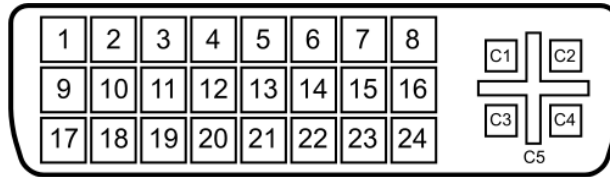
Standard 75Ω BNC Plug (RG179 connector supplied)

Pin	Description
Center	Video Signal
Shell	Video Return

* FD171CV VER HDSDI & FD171CV VER HDSDI-PM only

P3 (DVI-D Input)**

Accepts a standard DVI-D (Single Link) male connector (supplied)



Pin Number	Description
1	TMDS data 2-
2	TMDS data 2+
3	TMDS data 2 shield
4	N/C
5	N/C
6	DDC clock
7	DDC data
8	N/C
9	TMDS data 1-
10	TMDS data 1+
11	TMDS data 1 shield
12	N/C
13	N/C
14	+5 V
15	Ground
16	Hot plug detect
17	TMDS data 0-
18	TMDS data 0+
19	TMDS data 0 shield
20	N/C
21	N/C
22	TMDS clock shield
23	TMDS clock+
24	TMDS clock-
C1	N/C
C2	N/C
C3	N/C
C4	N/C
C5	N/C

** FD171CV VER HDS DI-DVI only



Operation Instructions

The FD171CV VER HDSDI, FD171CV VER HDSDI-DVI, AND FD171CV VER HDSDI-PM are 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.

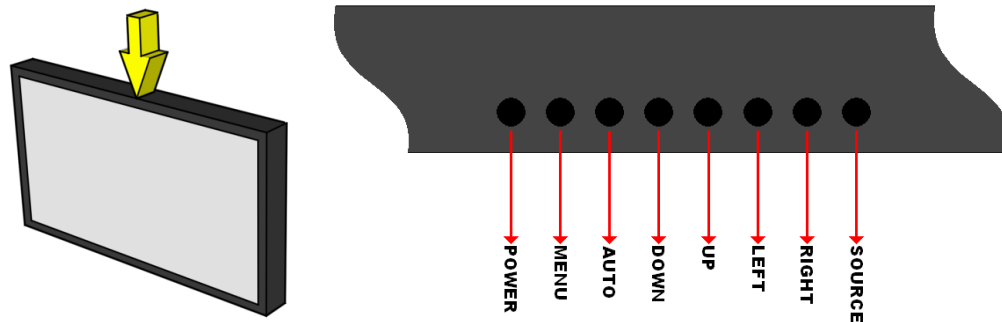
The passengers will be able to change the video output from the FD171CV VER HDSDI, FD171CV VER HDSDI-DVI or the FD171CV VER HDSDI-PM using the video source select button on the display, or remotely throughout the cabin with the included IR remote. Point the IR remote at the top of the LCD to make changes.

When applying 28VDC power, the display will turn on and look for a valid input on the last known source. If no input is found, the display will go to standby mode. Pressing the Select button will select new video input.



Button Controls

Located at the top (center) of all three units, FD171CV VER HDSDI, FD171CV VER HDSDI-DVI and the FD171CV VER HDSDI-PM are 8 buttons. Their functions are shown below:



BUTTON	DESCRIPTION
POWER	Toggles the power ON or OFF. Also, wakes the display up from SLEEP mode.
MENU	Opens the MENU.
AUTO	Auto-adjusts the display's size and position.
DOWN	Moves to the next selection in the menu.
UP	Moves to the previous selection in the menu.
LEFT	Decrease the selection's value in the menu.
RIGHT	Increases the selection's value in the menu.
SOURCE	Switches between sources coming into the display.

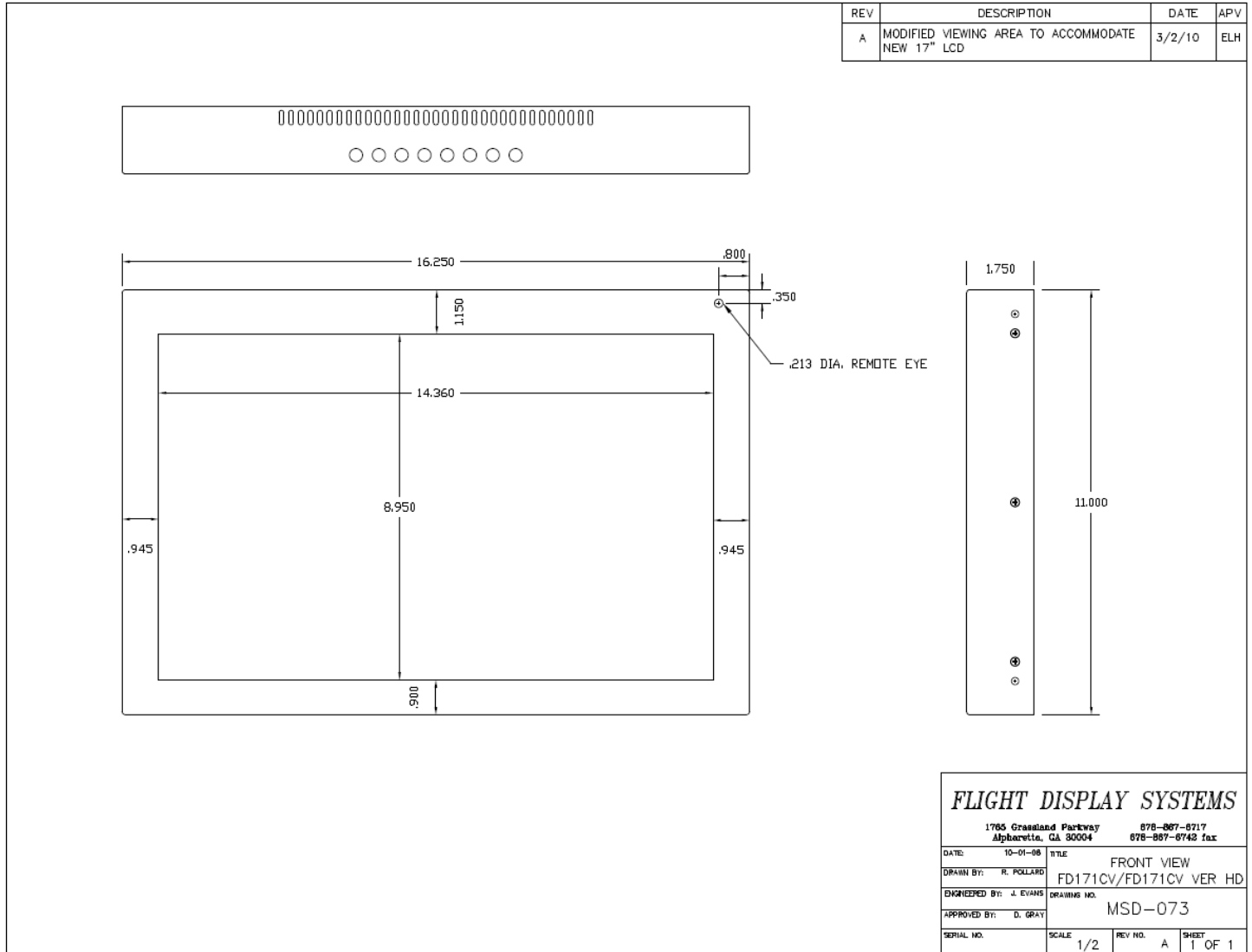
Remote Control Buttons

Refer to Button Controls on previous page.



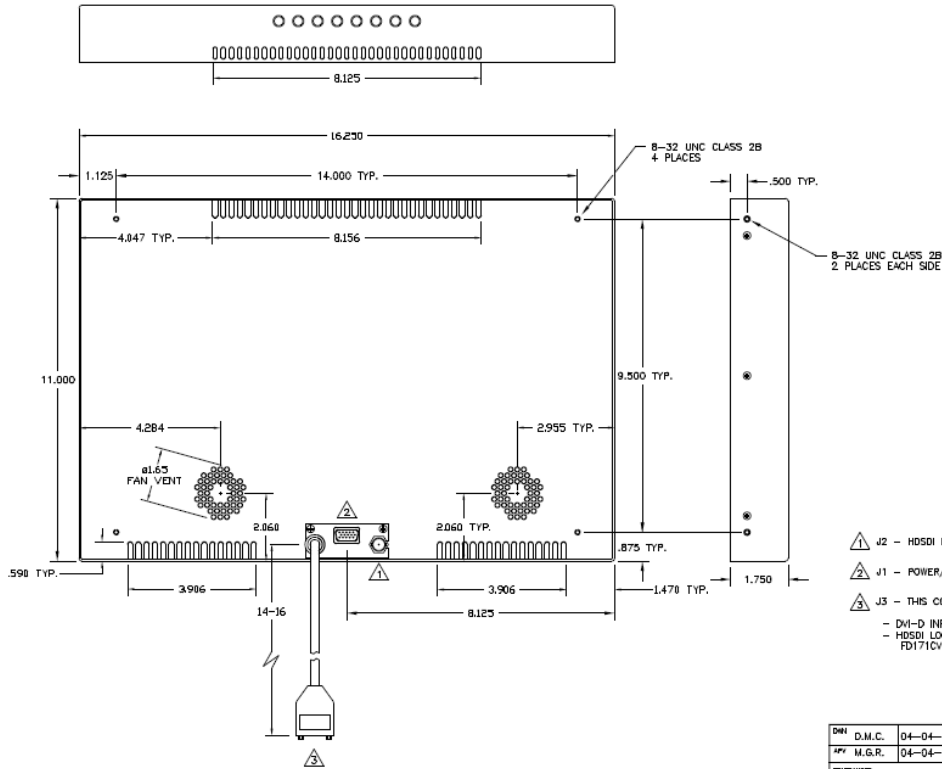


Technical Drawing



Technical Drawing

REV	DESCRIPTION	DATE	BY	APPD
0.1	ORIGINAL ISSUE	04-04-12	DMC	MGR
A	ADDED REF DESIGNATORS	02-21-13	DMC	MGR



- ⚠ J2 - HDSOI INPUT (BNC RECEPTACLE)
- ⚠ J1 - POWER/COMPOSITE/VGA INPUT (HD15M)
- ⚠ J3 - THIS CONNECTION VARIES BY MODEL
 - DVI-D INPUT (DVI-I RECEPTACLE) FD171CV VER HDSOI-DVI ONLY
 - HDSOI LOOP THROUGH (BNC RECEPTACLE) FD171CV VER HDSOI & FD171CV VER HDSOI-FM ONLY

DMC	D.M.C.	04-04-12	FLIGHT DISPLAY SYSTEMS	
APP	M.G.R.	04-04-12	MOUNTING SPECIFICATIONS	
TOLERANCES			FD171CV HDSOI VERSIONS	
FINISH			MATERIAL	GROUP NO.
BLACK POWDER PAINT			MSD-204	
SCALE	1/2	SHEET	1 OF 1	VERSION
				A



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 FD171CV VER HDSDI, FD171CV VER HDSDI-DVI and FD171CV VER HDSDI-PM is designed not to require regular general maintenance.





Limited Warranty

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.





Revisions Log

Rev	Date	Page	Description
A	03/15/2013	All	Initial Release
B	11/22/2013	6, 2 22	Updated Specifications, Address Information, Support Information. Warranty information.
B	1/12/2017	All	Company name change and formatting – No revision change necessary.

