



## Installation and Operation Manual

# FD600CAM-2/FD600CAM-2 Ver 28V

Glareshield Camera





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## General Information

The FD600CAM-2 and the FD600CAM-2 Ver 28V are Glareshield Cameras. This small color camera, when mounted in the cockpit, will provide passengers with an opportunity to observe taxi, take-off, and landing, adding a whole new dimension to the In-Flight Entertainment experience!

### Front View



## Specifications

<b>Video System</b>	NTSC or PAL
<b>Video Output</b>	1Vp-p, 75 Ohms
<b>Camera Sensor</b>	1/3" Color CCD
<b>Camera Lens</b>	4.0mm & 8.00mm (included)
<b>Camera Shutter Speed</b>	F 1.2
<b>Picture Element</b>	811H x 508V NTSC (795H x 596V PAL)
<b>Horizontal Resolution</b>	480 Lines
<b>Scanning System</b>	2:1 Interlace
<b>Signal to Noise Ratio</b>	>48 dB
<b>Minimum Illumination</b>	.05 Lux
<b>Dimensions, Camera</b>	1.35" (W) x 1.35" (H) x 2.92" (D)
<b>Dimensions, Mount</b>	2.0" (W) x 1.75" (H) x 1.75" (D)
<b>Weight</b>	6 oz
<b>Power</b>	FD600CAM-2 - 12VDC @ 90 mA FD600CAM-2 Ver 28V - 28VDC @ 45 mA
<b>Operating Temperature</b>	14°F to 140°F



## Installation Instructions

All cabin entertainment equipment, such as the FD600CAM-2 and the FD600CAM-2 Ver 28V, 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.

Mounting from the cockpit headliner is suggested. Excessive sunlight will make the video image hard to see. Mounting inside the cockpit and out of direct sunlight will provide a “visor” to the camera lens.

Remember to set the camera pointing down at an approximately 60° angle, as this will optimize the picture for takeoff and landings. When looking at the image while on the ground have the horizon 2/3 of the way up the video screen in the cabin.

## Power

The FD600CAM-2 is a 12VDC camera that requires 90mA power and can operate at 9 - 15VDC. The FD600CAM-2 Ver 28V is a 28VDC camera that requires 45mA power and can operate at 15 - 29VDC.

## Wiring Suggestions

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

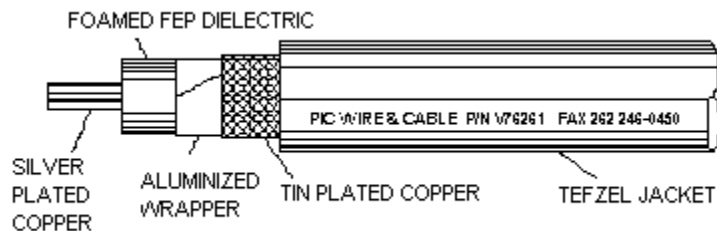
Avoid routing video wiring parallel to:

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



## Composite 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](http://www.deerfieldlab.com), (650) 632-4090). In most cases this should be added to the video output of the source.

## Power and Ground Wiring

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, 1.5-amp equipment load 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 Amp 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.

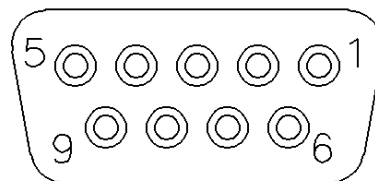
It is the installer's responsibility to understand the product's requirements in order to install the product in compliance with industry standards and safety.

## Power/Video

### Standard Density DB-9 Receptacle (supplied)

Connector  
 Crimp Contacts

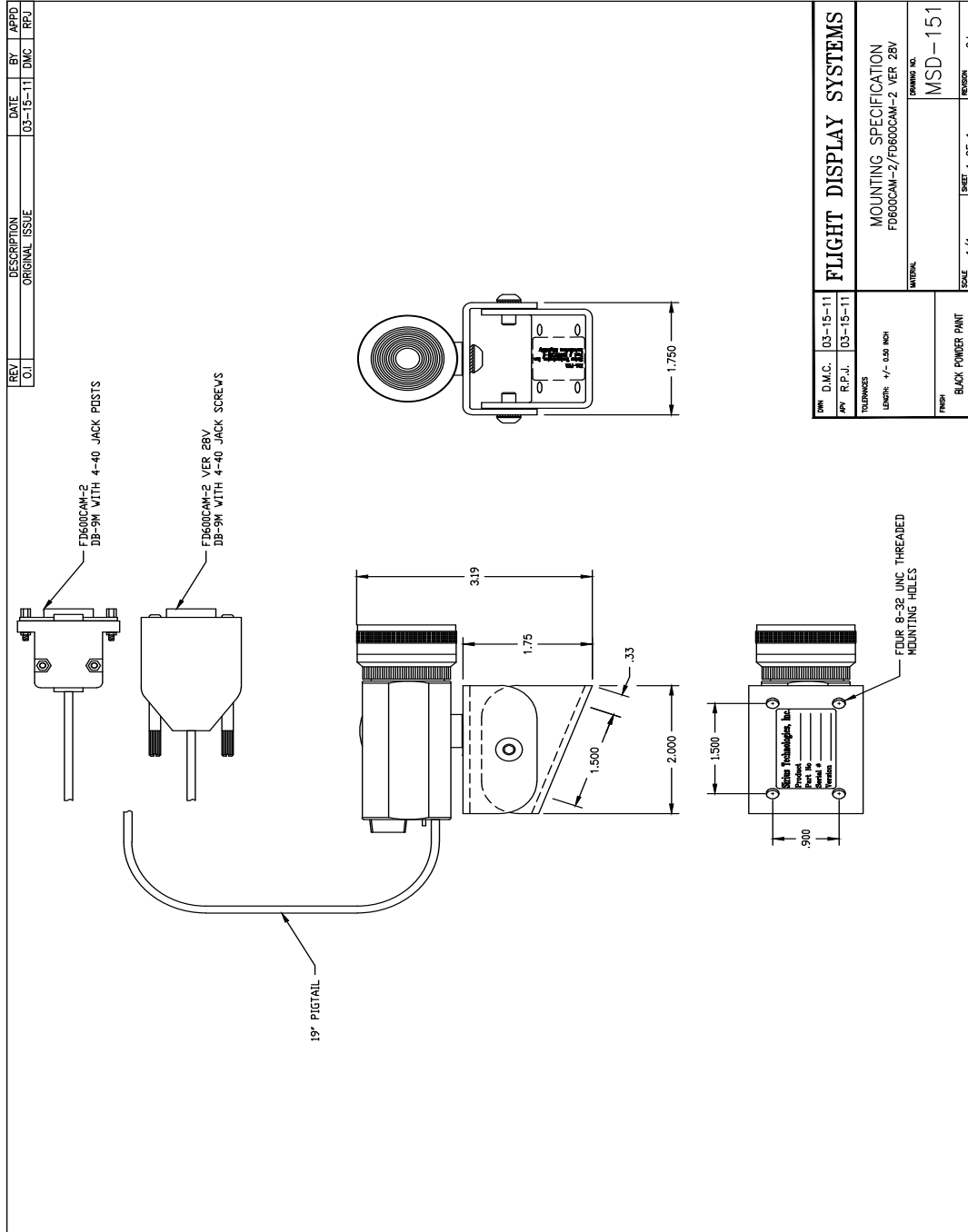
P/N: M24308/2-281 or Equivalent  
 P/N: M39029/63-368 or Equivalent



MATING FACE

Pin Number	FD600CAM-2 Description	FD600CAM-2 Ver 28V Description
1	12VDC Power	28VDC Power
2	12VDC Ground	28VDC Ground
3	N/C	N/C
4	Composite Video - Shield	Composite Video - Shield
5	Composite Video - Signal	Composite Video - Signal
6	N/C	N/C
7	N/C	N/C
8	N/C	N/C
9	N/C	N/C

# Technical Drawing







## Technical Support

Should you have any questions concerning this product or other FDS Avionics Corp. products, please contact our Service and 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](mailto: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](http://www.FDSAvionics.com)

## Instructions for Continued Airworthiness

The FD600CAM-2 and the FD600CAM-2 Ver 28V is designed not to require regular general maintenance.





## Limited Warranty

All FDS Avionics Corp. 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	03/08/2007		Initial Release
B	09/05/08	1	Updated camera lens specs, added operating temperature to spec list
C	04/14/2009	1,6	Updated specifications, warranty info
D	03/16/2011		Added FD600CAM-2 Ver 28V, new Composite Wiring info, new Pinout info, new Technical Drawing
E	07/11/2017	All	New Format, New Company Name, Warranty

