

Fiber Optic  
Video Transmission System  
Model B701VE

# installation instructions



**GENERAL**

This manual is a guide to the installation and operation of the B701VE series fiber optic video transmission system. Please read the entire manual before installing the equipment.

**NOTE:** The series number B701VE is used to describe all models unless noted otherwise.

The Series B701VE video transmission system offers one-way transmission of video from a camera to a monitoring station over one multimode fiber.

A complete system consists of one B701VET transmitter and one B701VER receiver.

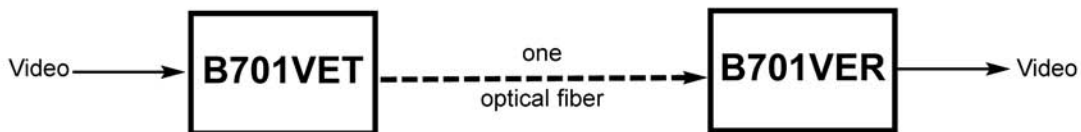
Units are designed for standalone operation or for installation in Fiber Options' 503H, 515R1 or 517R1 Card Cages.

**Unpacking the Unit**

In the event that anything is missing from the following list, contact your authorized Fiber Options dealer or representative.

B701VET Transmitter and B701VER Receiver  
Instruction manual

Save the original packing materials in case it becomes necessary to return the unit.

**BASIC SYSTEM DIAGRAM****INSTALLATION****Installation Considerations**

This fiber-optic link is supplied as a standalone module or as a rack card. Units should be installed in dry locations protected from extremes of temperature and humidity. The type of screws used for mounting must be suitable for the surface where a module will be mounted.

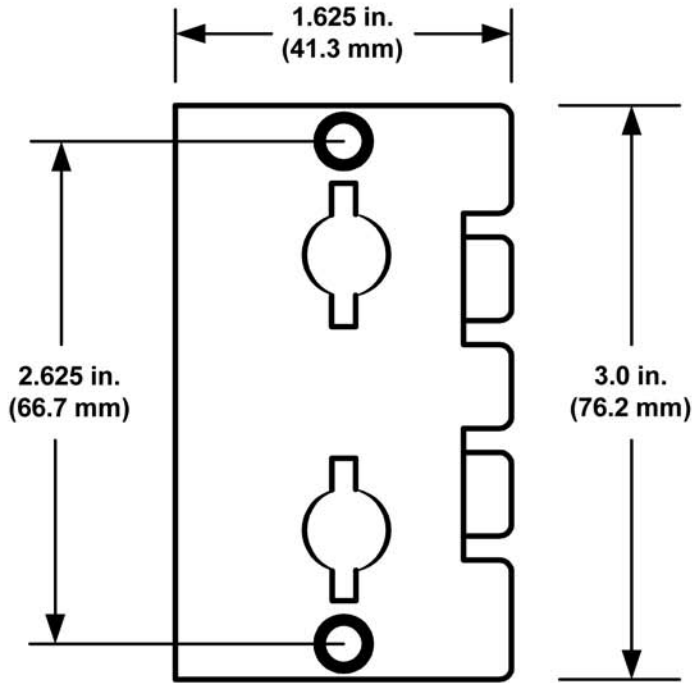
**Standalone Modules**

Standalone modules are provided with a mounting plate with holes for two No. 6 flat head screws (3-mm or 3.5-mm).

The type of screws must be suitable for the surface where a module will be mounted. See Figure 1.

1. Determine where the module will be installed, and ensure that there is adequate space at both ends for making the various cable connections and for reading the diagnostic LEDs.
2. Attach the mounting plate to a flat surface using two mounting screws. Once the plate is securely attached, align the tabs in the plate with the holes in the rear of the module and apply downward pressure until the module snaps in place.

FIGURE 1: STANDALONE MOUNTING BRACKET



### Rack Cards

Rack cards are designed to be installed in one of Fiber Options' 19-inch (483-mm) EIA standard card-cage racks, either the 503H, 515R1 or the 517R1. They may also be installed in the 501R standalone rack card enclosures. Follow these guidelines to install rack cards.

**CAUTION:** Although rack cards are hot-swappable and may be installed without turning off power to the rack, Fiber Options recommends that the power switch on the rack power supply be turned OFF and that the rack power supply is disconnected from any power source.

1. Make sure that the card is oriented right-side up, and slide it into the card guides in the rack until the edge connector at the back of the card seats in the corresponding slot in the rack's connector panel. Seating may require thumb pressure on the top and bottom of the card's front panel.

**CAUTION:** Take care not to press on any of the LEDs.

2. Tighten the two thumb screws on the card until the front panel of the card is seated against the front of the rack.

### 503H Horizontal Card Cage

**CAUTION:** The rack card module can only be powered by 13.5 VDC. AC power must not be used.

**CAUTION:** Fiber Options recommends that the card cage is not connected to any power source during installation.

1. Look inside the card cage to determine the location of the socket for the edge connector on the card. Orient the card so that it will seat in the socket, and slide it into the card guides in the card cage until the edge connector at the back of the card seats in the socket. Seating may require thumb pressure on the top and bottom of the card's front panel.

**CAUTION:** Take care not to press on any of the LEDs.

2. Tighten the two thumb screws on the card until the front panel of the card is seated against the front of the card cage.

**501R Rack Card Enclosure**

**CAUTION:** The rack card module can only be powered by 13.5 VDC. AC power must not be used.

**CAUTION:** Fiber Options recommends that the enclosure is not connected to any power source during installation.

1. Look inside the enclosure to determine the location of the socket for the edge connector on the card. Orient the card so that it will seat in the socket, and slide it into the card guides in the enclosure until the edge connector at the back of the card seats in the socket. Seating may require thumb pressure on the top and bottom of the card’s front panel.

**CAUTION:** Take care not to press on any of the LEDs.

2. Tighten the two thumb screws on the card until the front panel of the card is seated against the front of the enclosure.

**CONNECTIONS**

All fiber-optic links convert electrical signals into a light source at the transmitter and convert the light back to electrical signals for output at the receiver.

**Video Cable Connection**

The B701VE has one BNC connector and one fiber connector on the transmitter and receiver. See Figures 2 and 3.

**CAUTION:** Make sure all peripheral equipment that will be connected to the fiber unit is turned OFF during installation.

Fiber Options recommends using Belden number 9259 or equivalent RG59/U coaxial cable between the video equipment and the fiber units. Do not exceed the maximum distance recommended by the manufacturer of the video equipment.

**NOTE:** Coaxial cable must be terminated with female BNC connectors to properly connect with the Fiber Options equipment.

Connect the video equipment, such as a camera, to the input BNC jack on the B701VET transmitter using terminated coaxial cable.

Connect the monitoring equipment to the output BNC jack on the B701VER receiver with terminated coaxial cable.

**Fiber Optic Cable Connection**

Most cable manufacturers identify the individual fibers in the cable. Select appropriately terminated fiber and mark both ends with unique identification label (e.g. for cable no. 03, fiber no. 08) to ensure that the fiber connected to the near end is the same one that is connected to the far end.

The proper optical connection will link the transmitter's TRANSMIT (OUT) port to the receiver's RECEIVE (IN) port. See Figures 2 and 3.

1. Wipe the inside of the port’s sleeve with a lint-free pipe cleaner moistened with reagent-grade isopropyl alcohol. Blow dry with dry air.

2. Clean the connector using a lint-free cloth dampened with alcohol to thoroughly wipe the side and end of the ferrule. Blow the ferrule dry with dry air. Visually inspect the ferrule for lint.

3. Fasten the fiber optic cable to the port.

**Power Connections**

**Standalone Modules**

Standalone units may be powered either by 12 VAC or by 13.5 VDC. Standalone modules have a removable screw terminal connector for the electrical input connection.

Refer to Table 1 for 501R and 503H rack card enclosures and Figure 2 for standalone units.

**TABLE 1: STANDALONE ENCLOSURE POWER CONNECTIONS**

Pin	Connection
1	Ground
2	Not Used
3	DC +

NOTE: To provide earth ground reference, Stand Alone (Enclosure) modules need to be connected to a good earth ground. This can be accomplished by connecting a copper-based conductor from the modules DC Common/Ground pin to an approved earth ground.

FIGURE 2: STANDALONE MODULE CONNECTIONS

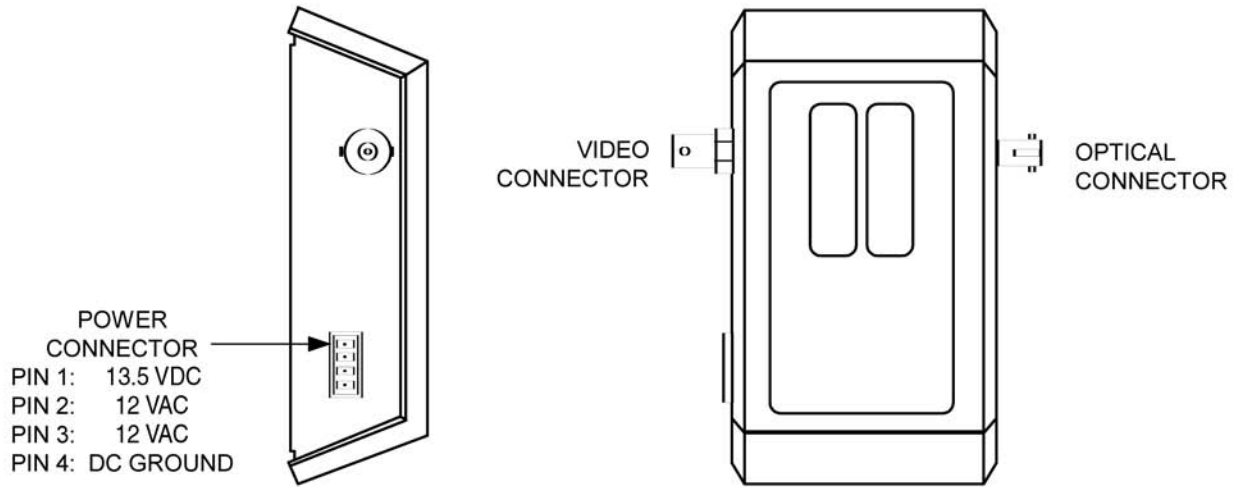
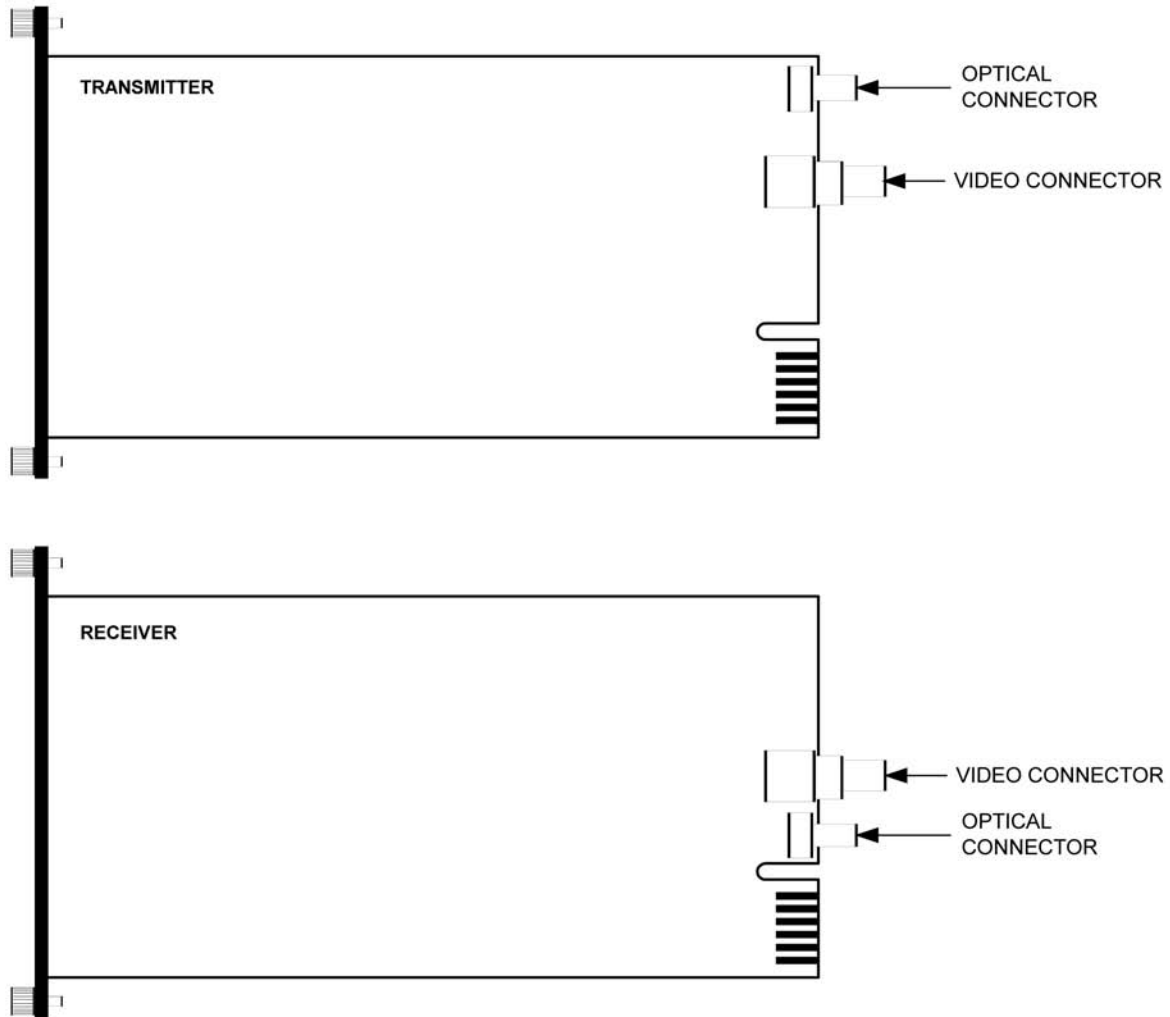


FIGURE 3: RACK-MOUNT MODULE CONNECTIONS



1. Identify the power connector and remove it from the module.
2. Make sure the power supply is not connected to any power source, and strip approximately 0.25-in (6-mm) of insulation from the ends of the cable.
3. Taking care to observe the correct polarization of the cable, insert one lead into one of the screw sockets and tighten the screw. Repeat for the other conductor. Confirm the security of the connection by a light pull on the cable.
4. Seat the connector in its position in the fiber unit.
5. Plug the power supply into a suitable outlet.

**CAUTION:** The rack card module can **ONLY** be powered by 13.5 - 16 VDC. AC power must not be used.

Power up the peripheral equipment and verify system operation by observing video on the monitor at the receiver end.

#### **Rack Modules**

Power connections are made automatically when the card is installed. To supply power to the rack, connect the rack power supply to an AC outlet and set the power switch to ON.

#### **SMARTS™ DIAGNOSTICS**

The B701VE has built in Status Monitoring And Reliability Test System (*SMARTS™*) diagnostic capabilities that includes LED indicators for monitoring video and optical status. They are described in the following sections.

#### **LED Operation**

The B701VE has 2 LED indicators that are very useful in describing the current state of operation, as well as the fiber optic signal strength. These indicators are LEVEL/LOSS™ and VIDEO. See Figure 4. They function as follows:

#### **LEVEL/LOSS™ Indicator**

This LED is useful for indicating the relative optical signal strength at the fiber optic receiver. When sufficient optical power is being received, the LED is green. If no or insufficient optical power is received, the LED will be red.

#### **VIDEO Indicator**

The VIDEO LED on the transmitter indicates the presence of a video signal. It will remain green as long as an adequate video signal is being input to the transmitter. The LED will be red when no video signal is present.

**NOTE:** A blank video screen can be a valid video input.

If the B701VE fails to operate and the cause of the failure cannot be determined, it may be necessary to contact Fiber Options.

#### **OPERATION**

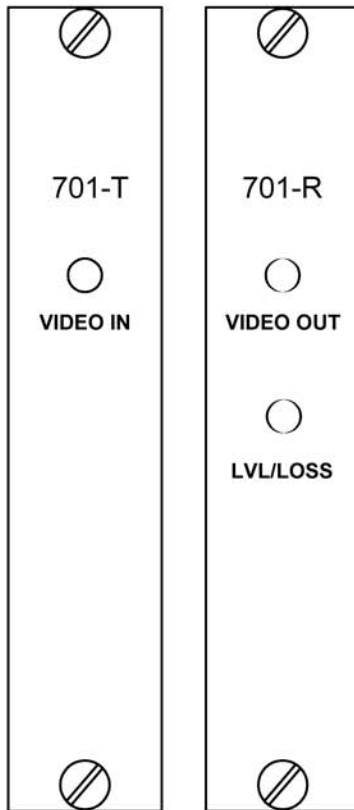
B701VE links operate automatically once installed. Refer to the Table 2 for an explanation of how to diagnose system faults using the LEDs built into the Fiber Options units.

For an explanation of LED color codes, refer to LED Operation.

#### **MAINTENANCE**

There is no operator maintenance other than keeping the units clean.

**FIGURE 4: RACK-MOUNT FRONT PANELS**



**TABLE 2: LED DIAGNOSTIC INDICATORS**

LED Name	Color	Indicates/Corrective Action
LEVEL/ LOSS	Green	Sufficient optical power received. <i>No action required.</i>
	Red	Insufficient optical power received. <i>Verify fiber connected &amp; within optical budget, transmitter and receiver power on.</i>
VIDEO	Green	Valid video signal at unit. <i>No action required.</i>
	Red	No video signal at unit. <i>Verify video connected, video source has power and is transmitting.</i>

## Customer Support

For assistance in installing, operating, maintaining, and troubleshooting this product, refer to this document and any other documentation provided. If you still have questions, please contact technical support during normal business hours (Monday through Friday, excluding holidays, between 6 a.m. and 5 p.m. Pacific Time).

### GE Security

Call: 888 437-3287 (US, including Alaska and Hawaii; Puerto Rico; Canada)

Outside the toll-free area: 503 885-5700

Fax: 561 998-6224

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



GE Security

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

#### U.S.

T (561) 998-6100

T 888-GE-SECURITY

888 (437-3287)

F 561 998-6224

E [gesecuritycustserv@ge.com](mailto:gesecuritycustserv@ge.com)

#### Asia

T 852-2907-8108

F 852-2142-5063

#### Australia

T 613-9239-1200

F 613-9239-1299

#### Canada

T 519-376-2430

F 519-376-7258

#### Europe

T 44-113-238-1668

F 44-113-253-8121

#### Latin America

T 305-593-4301

F 305-593-4300

As a company of innovation, GE Security reserves the right to change product specifications without notice.

For the latest product specifications visit GE Security online at [www.GESecurity.com](http://www.GESecurity.com) or contact your GE Sales Representative.

21-0701VE-B Released MAY-07

Copyright © 2007 General Electric Company. All rights reserved.