

Fiber Optic System
Digital Eight-Channel Video Multiplexer
Models S708V and S7708V

installation instructions



GENERAL

This manual is a guide to the installation and operation of the S708V series fiber optic video multiplexer systems. Please read the entire manual before installing the equipment.

NOTE: The series numbers S708VT and S708VR are used to describe all models of transmitters and receivers unless noted otherwise.

The Series S708V digital video multiplexers offer simultaneous digital transmission of eight full-frame video signals (color or monochrome) over multimode or single-mode fiber.

A complete system consists of an S708VT transmitter and an S708VR receiver.

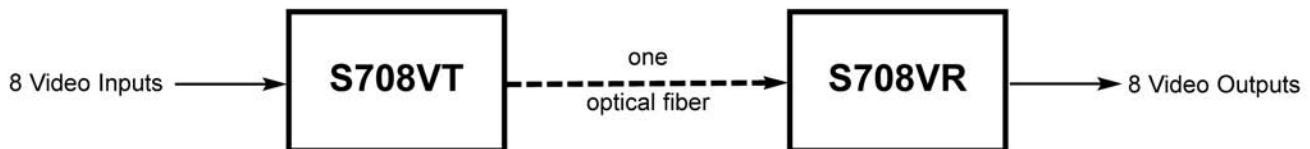
Units are designed for installation in Fiber Options' 515R1 or 517R1 Card Cages or in the 502R standalone enclosure.

Unpacking the Unit

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

S708VT Transmitter or S708VR Receiver
(S7708T Transmitter or S7708VR Receiver)
Instruction manual

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

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.

Standalone Modules

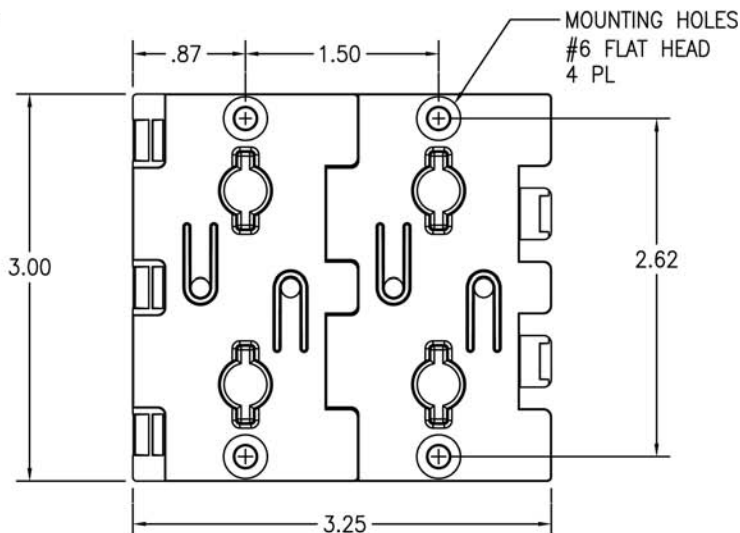
1. Determine where the module will be installed, and ensure that there is adequate space at both ends for making the various cable connections.

2. Standalone modules feature a wall-mounting plate which is attached to suitable flat surfaces with six No. 6 (3-mm or 3.5-mm) screws. Once the plate is securely attached to a flat surface, the S708V is mounted on the plate and can be easily removed. Refer to Figure 1.

3..An additional, optional bracket is also provided for more secure mounting. The type of screws must be suitable for the surface where a module will be mounted. Refer to Figure 2.

FIGURE 1: MOUNTING PLATE

Mounting plate attaches to selected surface with four suitable screws. Standalone modules are mounted by sliding it onto the plate's hooks until firmly seated. The module can be easily removed and remounted.



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 515R1 or the 517R1, or in the 502R standalone enclosure. Follow these guidelines to install rack cards after performing the MODULE SETUP procedures.

515R1 and 517R1 Card Cage Racks

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.

502R Rack Card Enclosure

CAUTION: The rack card module can only be powered by 13.5 - 16 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.

MODULE SETUP

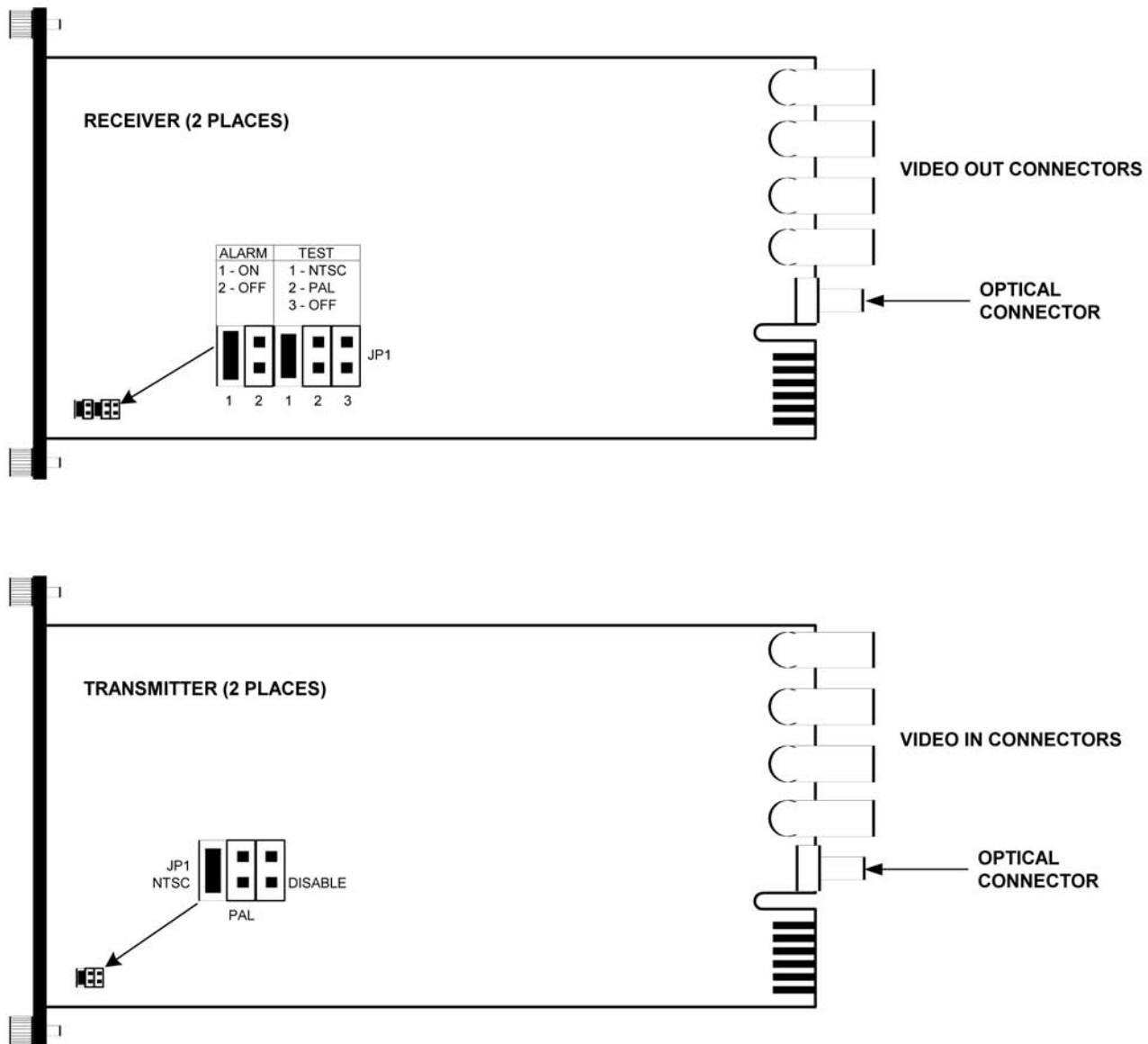
Alarm Jumper

Rack cards are supplied with an alarm function that activates if the optical signal input to the receiver fails. The alarm is always indicated on the front panel of the card by a red LEVEL/LOSS™ LED. The alarm may also be output to the rack power supply, where a sonalert (audible alarm) and alarm output contact closure may be activated.

The alarm is set to ON (position 1) at the factory. If the alarm output is not desired, move the ALARM jumper JP1 to position 2 (OFF). See Figure 3.

NOTE: Setting the ALARM jumper JP1 to position 2 (OFF) does not affect the operation of the LEVEL/LOSS™ LED. Loss of optical signal will always be indicated by a red LEVEL/LOSS™ LED.

FIGURE 3: S708V RACK-MOUNT RECEIVER AND TRANSMITTER



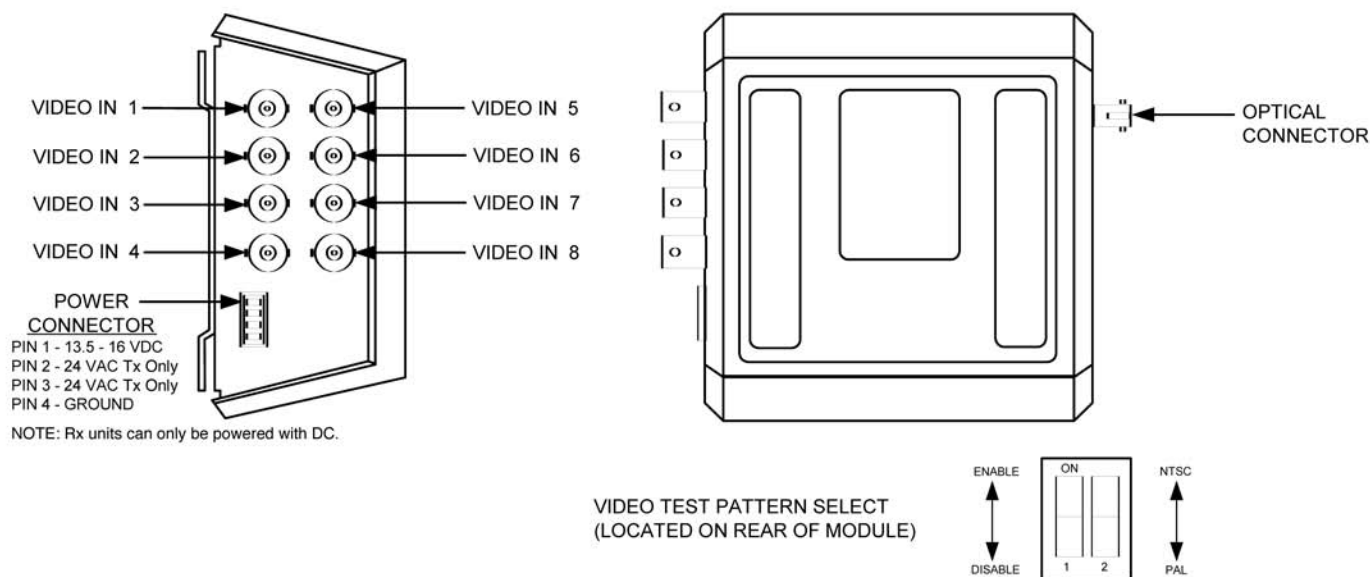
Video Format/Test Pattern Generator

The S708V links support both NTSC and PAL video standards without adjustment. The S708VT transmitter and S708VR receiver have jumpers to select the video format for the test pattern generator. To set the video format for the test pattern generator:

NOTE: In order for the test pattern generator to operate properly, both the transmitter and receiver must be set to the same format.

1. Set jumper JP1 on the receiver board to position 1 for NTSC, position 2 for PAL, or position 3 to disable the test pattern generator. See Figure 3.
2. Set jumper JP1 on the transmitter to the NTSC, PAL, or disabled position as required. See Figure 3 for rack-mount transmitters or Figure 4 for standalone transmitters/receivers.

FIGURE 4: S708V STANDALONE TRANSMITTER /RECEIVER



CONNECTIONS

All fiber-optic links convert electrical signals into a light source at the transmitter and convert the light back to electrical signals at the receiver. The electrical connections to the S708V series consist of four BNC connectors and one optical connector on both the transmitter and the receiver.

Video Cable Connections

CAUTION: Make sure all peripheral equipment to be connected to the fiber units is turned OFF during installation.

NOTE: Fiber Options suggests that Belden number 9259 or equivalent coaxial cable should be used. Consult the cable manufacturer's specifications for the maximum distance between the video equipment and the fiber equipment.

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

1. Connect the four video sources, such as cameras, to the input BNC connectors on the S708VT transmitter using terminated coaxial cable. See Figures 4 and 5.

2. Connect the monitoring equipment to the output BNC connectors on the S708VR receiver using terminated coaxial cable. See Figures 4 and 5.

Fiber Optic Cable Connection

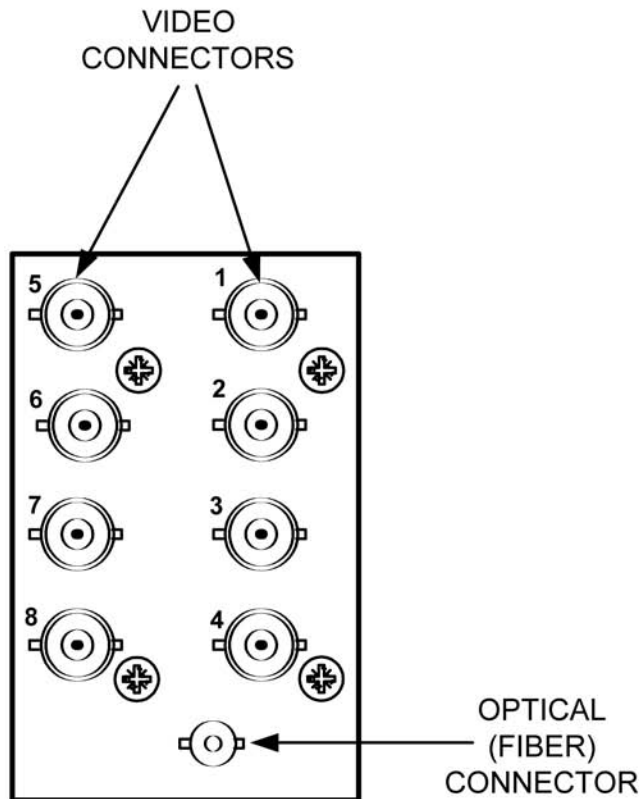
Most cable manufacturers identify the individual fibers in the cable. Select appropriately terminated fiber and mark both ends with unique identification label (e.g. for cable no. 03, fiber no. 08) to ensure that the fiber connected to the near end is the same one that is connected to the far end.

The proper optical connection will link the transmitter's TRANSMIT (OUT) port to the receiver's RECEIVE (IN) port. See Figures 3 and 4.

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.

FIGURE 5: RACK-MOUNT TRANSMITTER AND RECEIVER REAR PANEL



Power Connections

Standalone Modules

Standalone transmitter units may be powered either by 24 VAC or by 12 - 16 VDC. Connect input power according to the label on the module. See Figure 4. Rx units are DC only.

Rack Modules

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

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.

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

SMARTS™ DIAGNOSTICS

The S708V has built in Status Monitoring And Reliability Test System (*SMARTS™*) diagnostic capabilities. This includes LED indicators for monitoring optical status as well as video test pattern generators for verifying unit functionality. They are described in the following sections.

Video Test Patterns

The S708V includes an internal video test pattern generator that can ease installation and troubleshooting. The test patterns generated can notify the user of a fiber failure or a video source failure by outputting specific test patterns on the user's monitor.

This will verify proper functionality of the digital decoding process as well as troubleshooting fiber optic interconnections.

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.

Follow the procedures described in VIDEO FORMAT/TEST PATTERN GENERATOR on page 3 to enable the test pattern generator.

Table 1 provides a summary of the on-screen diagnostics displays that are available.

Disabling the test pattern generator causes no signal output during the failure conditions or test mode described above.

LED Operation

Refer to the Table 2 for an explanation of how to diagnose system faults using the LEDs built into the Fiber Options units.

The S708V has 3 LED indicators that are very useful in describing the current state of operation, as well as the current video status and fiber optic signal strength. See Figure 5. These indicators are LEVEL/LOSS™, VIDEO IN (or OUT), and LASER. 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.

If test patterns are enabled a grey screen with two white vertical bars will be output. If test patterns are disabled the screen will be black.

VIDEO IN (or OUT) Indicator

This LED indicates the presence of a video signal. The VIDEO IN LED on the transmitter remains 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. The VIDEO OUT LED on the receiver performs a similar function, except that it refers to the video that is output from the receiver. If test patterns are enabled a grey screen with a single white vertical bar pattern will be output when no video is present. If disabled, the screen will be black.

NOTE: The S708V monitors the video sync signals to determine the presence of the signal. It does not monitor the picture brightness signal. Thus, if the scene in front of a camera is totally dark, producing a blank monitor screen, the VIDEO IN/OUT LEDs will still be green.

LASER Indicator

The S708VT transmitter has LASER LEDs that indicate the status of the laser. A green LASER LED indicates the laser is operating normally. A red LASER LED indicates the laser is malfunctioning.

OPERATION

S708V links operate automatically once installed. Refer to Table 1 for a description of on-screen diagnostic indications.

For an explanation of LED color codes, refer to LED OPERATION and Table 2.

MAINTENANCE

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

FIGURE 5: S708V RACK-MOUNT TRANSMITTER AND RECEIVER FRONT PANELS

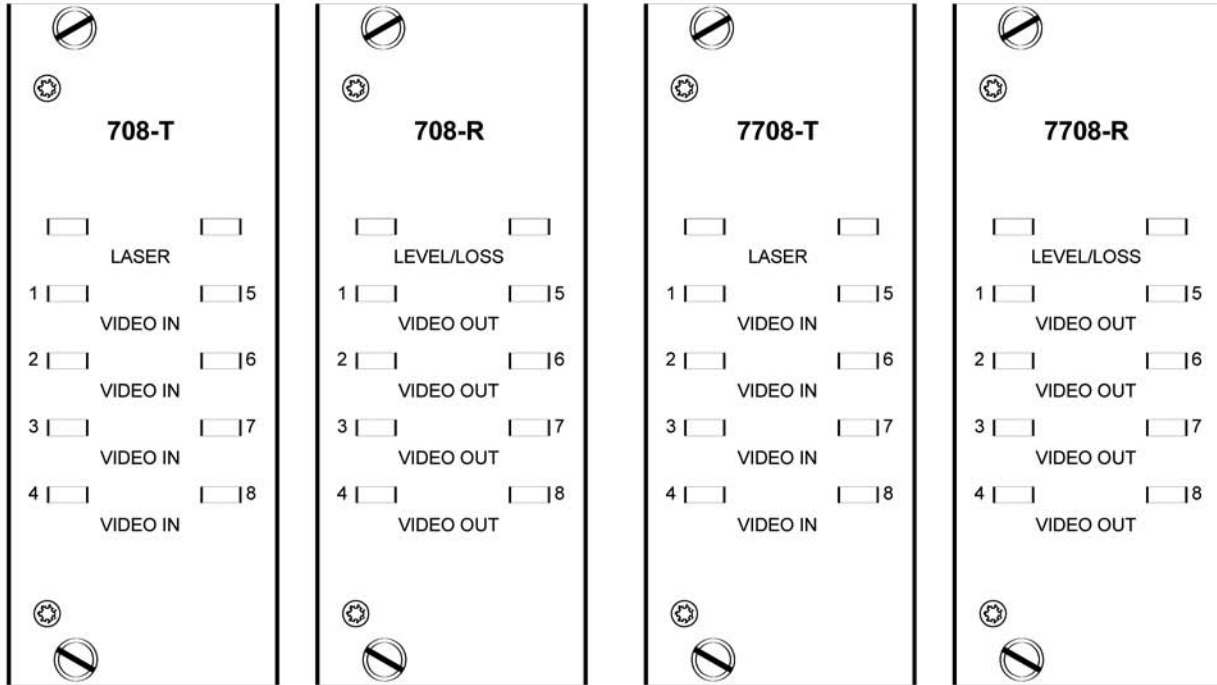


TABLE 1: ON SCREEN DIAGNOSTICS

Monitor Display	Meaning
Single white bar	No video input to transmitter on that channel
Double white bar	No optical input to receiver
Video test pattern	No video input to the transmitter on any channel

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 & within optical budget, receiver power on.</i>
VIDEO IN	Green	Adequate video input signal. <i>No action required.</i>
	Off	Inadequate video input signal. <i>Check video source and coaxial cable.</i>
VIDEO OUT	Green	Adequate video signal received from transmitter. <i>No action required.</i>
	Off	Inadequate video signal received from transmitter. <i>Check video input to transmitter and check LEVEL/LOSS™ for optical signal strength.</i>
LASER	Green	Laser is operating correctly. <i>No action required.</i>
	Red	Laser is inoperative. <i>Contact Fiber Options.</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).

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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



GE Security

www.GESecurity.com

U.S.

T (561) 998-6100

T 888-GE-SECURITY

888 (437-3287)

F 561 998-6224

E 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

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F 305-593-4300

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