



Global Traffic  
Technologies

**Installation Manual**

**February 2008**

Opticom<sup>™</sup> Infrared System  
Model 760 Card Rack

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## 1 About This Manual

### 1.1 Purpose of Manual

This manual provides step-by-step instructions for installing the Opticom™ Infrared System Model 760 Card Rack. It is intended for use by installers, maintenance personnel, and others who are responsible for the installation and maintenance of the system.

### 1.2 Manual Conventions

The conventions listed in Table 1-1 help to make this manual easier to use by presenting a uniform approach to the descriptions, phrases, and nomenclature.

### 1.3

## Manual Organization

This manual is divided into five sections.

### Section 1. About This Manual

Contains information about the organization and content of this manual.

### Section 2. Safety Information

Contains important information about the safety messages, safety labels, safety precautions, and procedures for installation of this device.

### Section 3. Description

Briefly describes the Model 760 card rack and its wiring harness.

### Section 4. Installation

Contains step-by-step installation instructions.

### Section 5. Maintenance

Contains information and recommendations to ensure reliable system operation.

Table 1-1. Manual Conventions

Element	Convention	Example
Acronyms	Uppercase	VAC
Model Names	First or formal reference: initial caps Subsequent use or informal reference: Initial caps for <i>Model</i> , lowercase for remainder	Opticom Infrared System Model 760 Card Rack Model 760 card rack, or the card rack

## 2 Safety Information

We provide important safety information and warnings to assist you in understanding and avoiding potential harm to yourself, and possible damage to equipment, during the installation of the Opticom™ Infrared System equipment. Although we have included many potential hazards you may encounter during the installation of this equipment, we cannot predict all of the possible hazards and this list should not be a substitute for your judgment and experience.

**Please read and observe all safety information and instructions in this manual before installing the system equipment. Also, save this installation manual and keep it near the equipment.**

If you are unsure about any part of this installation or of the potential hazards discussed, please contact your supervisor immediately.

### 2.1 Intended Use

The system is intended to assist authorized priority vehicles through signalized intersections by providing temporary right-of-way through vehicle operator interface to the system and through the use of common traffic controller functions.

### 2.2 Technical Support

If you have questions about the system, its use, or operation, please contact your dealer or call the Global Traffic Technologies Technical Service department at 1-800-258-4610.

### 2.3 Safety Messages and Safety Labels


We include safety messages and safety labels in this manual to help you protect your safety and the safety of others. This section contains important information to help you recognize and understand these safety messages.

**Please read all messages before proceeding with the installation.**

#### 2.3.1

### Safety Message Format

Safety messages are designed to alert you to potential hazards that can cause personal injury to you or others. They can also indicate the possibility of property damage.

Each safety message box contains a safety alert symbol (); one of three signal words: DANGER, WARNING, or CAUTION; and a safety message.

The signal words and symbols, and their meanings, are shown below:



**DANGER means you and/or someone else WILL be KILLED or SERIOUSLY HURT if you do not follow these instructions.**



**WARNING means you and/or someone else MAY be KILLED or SERIOUSLY HURT if you do not follow these instructions.**




**CAUTION means you and/or someone else MAY be HURT or property damage may result if you do not follow these instructions.**

In addition to the symbols and words explained above, each safety message identifies the hazard, describes what you can and should do to avoid the risk of exposure to the hazard, and tells the probable consequences of not avoiding the hazard.

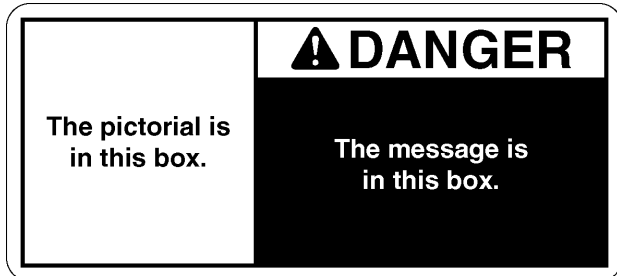
**2.3.2 Safety Label Format**

We include safety labels on the devices to help you protect your safety and the safety of others. Safety labels are designed to alert you to potential hazards associated with a piece of equipment that can cause personal injury to you or others. They can also indicate the possibility of property damage.

**Please read all safety labels.**

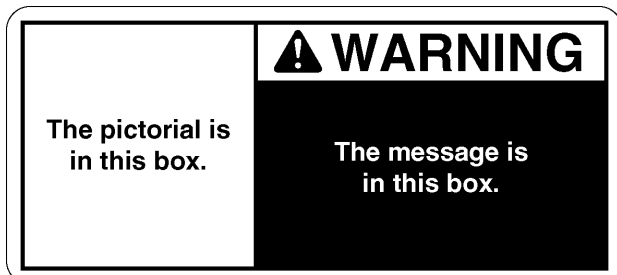
Each safety label contains a safety alert symbol, (); one of three signal words: DANGER, WARNING, or CAUTION; a pictorial showing the nature of the hazard; and a safety message.

The signal words and symbols, and their meanings, are shown below:



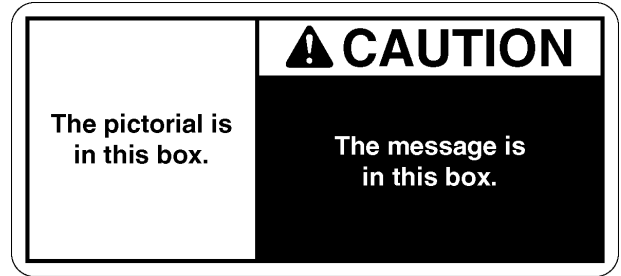
Opticom-242A

**DANGER** means you and/or someone else **WILL** be **KILLED** or **SERIOUSLY HURT** if you do not follow these instructions.



Opticom-243A

**WARNING** means you and/or someone else **MAY** be **KILLED** or **SERIOUSLY HURT** if you do not follow these instructions.



Opticom-244A

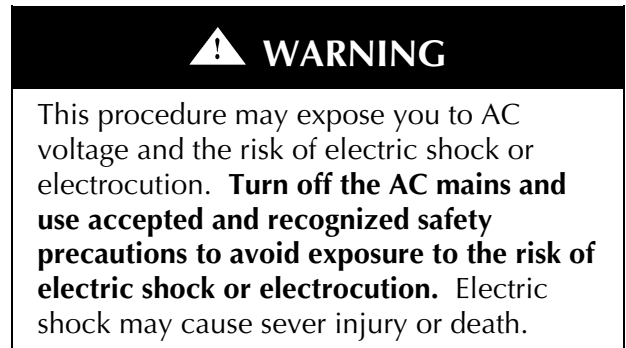
**CAUTION** means you and/or someone else **MAY** be **HURT** or **property damage** may result if you do not follow these instructions.

We consider safety labels to be an important part of all devices and they should be replaced immediately if they become hard to read.

If any of the safety labels are missing, or cannot be read, please contact your dealer or the GTT repair department for a replacement.

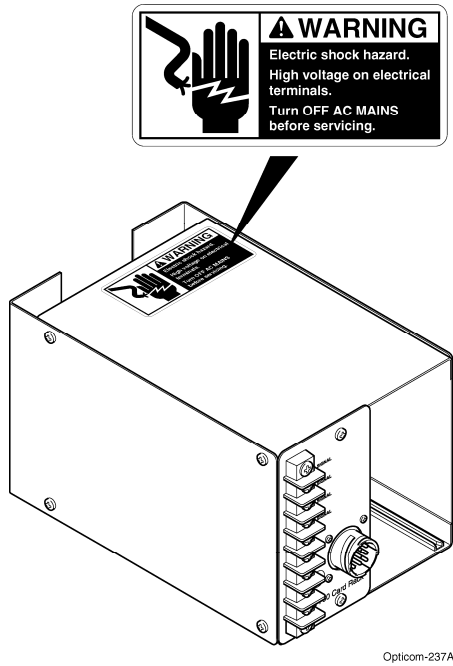
**2.4 Safety Message Contained in this Manual**

The following safety message appears in this manual:



**2.5 Safety Label Location**

There is one safety label on the Opticom™ Infrared System Model 760 Card Rack. If it is missing or cannot be read, please contact your dealer or GTT repair department for a replacement. See Figure 2-1 for the safety label location.



**Figure 2-1. Safety Label Location**

## 2.6 Safety Considerations

Please consider the following safety issues before beginning the installation.

Although we have provided this list of common safety considerations, it should not be considered as complete. It is not intended to take the place of your good judgment, training, and experience.

### 2.6.1 Personal Safety Equipment and Clothing

Personal safety equipment and clothing including high visibility vests, hard hats, gloves, electrical shock or electrocution protection clothing and equipment, safety shoes, safety glasses, face shields, goggles, and hearing protection devices are just some of the items available to you. Choose the right equipment for the job. If you are unsure of which safety equipment is recommended or appropriate for the job, ask your supervisor or foreman.

### 2.6.2

### Work Zone Traffic Control

Proper control of vehicle traffic is important during many procedures. When you switch the traffic controller to and from the flash mode we recommend that you have people trained in manual traffic control, such as police officers, assist you.

When you install devices that require you to position vehicles, equipment, or people in or near the roadway; it is important that you use appropriate work zone traffic control techniques, equipment, and procedures. Sometimes you may have to work on or near the roadway and these same techniques, equipment, and procedures should be used for your protection.

If you are unsure of which procedures are recommended or appropriate for the job, ask your supervisor or foreman.

### 2.6.3 Electrical Shock

The possibility of electrical shock exists when installing Opticom system equipment, since connections must be made to open terminals within the traffic control cabinet which may have 120 VAC present. Follow proper work procedures and read and understand the safety messages in this manual.

As a trained installer of electrical equipment you are aware of the dangers associated with the installation of electrical devices. Always be sure that the power to the equipment, and all associated equipment, is turned off before beginning any procedure. Use the equipment, techniques, and procedures that you learned during your training or apprenticeship or other electrical industry recognized safety procedures.

If you are unsure of which techniques, procedures, and protective equipment are recommended or appropriate for the job, ask your supervisor or foreman.

## 2.7 Disposal of Device

Please dispose of the device in accordance with all local, state, and federal laws and regulations.

## 3 Description

The Model 760 card rack is usually required in N.E.M.A.<sup>1</sup> type controller installations.

The Model 760 card rack is also used when input file space is not available for Type 170<sup>2</sup> controller installations.

Card slot X1 in the Model 760 card rack is dedicated to Opticom phase selectors and discriminators. The X1 edge connector is wired to connector J1 on the card rack front panel. The card rack is connected to the traffic controller by a 9-pin wiring harness. The wiring harness provides inputs and outputs to the traffic controller system hardware.

### NOTE

Illustrations and connections to the traffic controller may not be exactly as shown or described in this manual. Refer to the controller wiring diagram for correct terminal connections.

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<sup>1</sup> National Electrical Manufacturer's Association

<sup>2</sup> California/New York Type 170 Controller Input File

## 4 Installation

This section describes the installation of the Opticom™ Infrared System Model 760 Card Rack.

### WARNING

This procedure may expose you to AC voltage and the risk of electric shock or electrocution. **Turn off the AC mains and use accepted and recognized safety precautions to avoid exposure to the risk of electric shock or electrocution.** Electric shock may cause sever injury or death.

1. Place the card rack at the desired location in the controller cabinet.
2. Locate the controller terminals for AC+, AC-, chassis ground, logic ground, and the priority control (preemption) inputs.

#### NOTE

AC power connections should be made after the circuit breaker, and any surge protection devices.

3. Route the 9-pin harness wires to their terminals.
4. Strip 1/4-inch of insulation from each wire to be used.
5. Install a spade lug on each wire and connect it to the appropriate terminal. See Figure 4-1 and Table 4-1.

Table 4-1. 9-Pin Harness Wiring

Wire Color	Pin	Function
Black	1	115 VAC (AC+)
White	2	AC return (AC-)
Green	3	Chassis ground
	4	Not used
Gray/White	5	Ch A priority control output
Blue/White	6	Ch B priority control output
Violet/White	7	Ch C priority control output
Brown/White	8	Ch D priority control output
Gray/Black	9	Logic ground

6. Tape off and cable tie all unused wires.
7. Connect plug P1 to connector J1 on the Model 760 card rack front panel.

#### NOTE

The AC mains will be turned on when the phase selector or discriminator is installed in the card rack and the installation procedures are complete. For information on the phase selector or discriminator installation, see the *Installation Instructions* manual for the Model 752/754 and 752N/754N phase selectors, or the Model 452/454 and 252/254 discriminators.



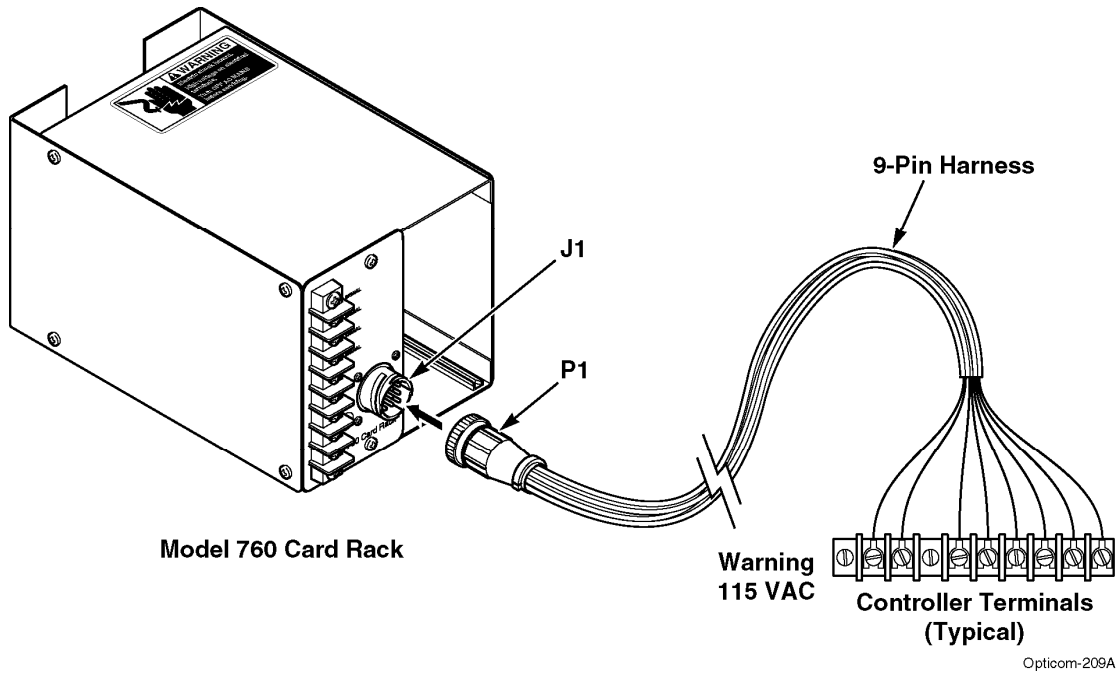


Figure 4-1. 9-Pin Harness Wiring

## 5 Maintenance

Opticom™ Infrared System components are designed for reliable operation. Inspect the components at regular intervals to ensure proper system operation.

GTT recommends the following:

- Each intersection and vehicle system should be inspected and tested at least every twelve months to ensure that it functions to your specifications and requirements.
- Intersection systems should be tested with known good emitter systems.
- Emitter systems should be tested with known good intersection systems.
- You should develop a test plan that fits your department's operations and meets the needs of your system.
- You should keep accurate and up-to-date records of system performance and test results.

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GTT warrants future system operability coverage as described herein. The warranties set forth in this document shall not apply to (A) incandescent lamps (confirmation lights) or (B) to any Opticom infrared system components which have been (1) repaired or modified by persons not authorized by GTT; (2) subjected to incorrect installation, misuse, neglect or accident; (3) damaged by extreme atmospheric or weather-related conditions; or (4) subjected to events or use outside the normal or anticipated course.

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Sale and use of the Opticom infrared system is expressly restricted to authorized agencies of government customers, within their specific jurisdictions. However, because the infrared signal generated by the Opticom infrared system is not exclusive, GTT does not warrant exclusive activation by purchaser.



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