Installers must read this Guide before using the Product
Important Warnings

It is important for your facility to implement and enforce the following warnings in order to keep all equipment functioning properly.

⚠️ WARNING: Installation and Configuration

It is the responsibility of the facility to follow the installation instructions carefully and to use the components and supplies specified by RF Technologies, Inc. for all (Safe Place® and Code Alert®) installations.

Failure to use the components and supplies specified by RF Technologies, Inc. may result in equipment and/or system failure.

⚠️ WARNING: User Training

It is the responsibility of the facility to implement structured training procedures for all employees using the system. Only users who have received adequate training on the use of the system should use the system.

Failure to adequately train employees may cause system failure due to user error. In addition, incorrect use of the equipment may also result in system failure.

⚠️ WARNING: System Maintenance and Testing

It is the responsibility of the facility to establish and facilitate a regular maintenance schedule of your (Safe Place® and Code Alert®) system. This includes regular inspection, testing, and cleaning.

Failure to provide regular maintenance and testing of these products may result in equipment and/or system failure.

⚠️ WARNING: Failure to follow the Warnings and Cautions in this guide voids any or all Product Warranties.
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Preface

Introduction

This guide provides detailed information about a component of the 9450 System. It provides detailed instructions about installing the component as well as specific requirements.

The 9450 System monitors doors, elevators, hallways, and stairwells, to assist staff in monitoring patients in a facility. A small Transmitter is placed on the ankle or the wrist of a patient. If a transmitter is detected in an Exit Alarm Zone, an alarm sounds at the exit. Depending on which equipment you have installed, the 9450 System can automatically lock doors, deactivate elevators, and activate remote cameras.

In addition, if the 9450 System in your facility includes computers, an alarm also sounds at a Central Server and its network of Clients. The Central Server and Clients also identify which patient sounded the alarm and the exit where the alarm occurred.

The 9450 System Cut Band Feature Option provides further security by alerting staff if a Transmitter band is tampered with or cut.

Additionally, if your system contains a Staff Alert Panel, a redundant alarm sounds if certain wires are cut or damaged.

**WARNING:** The 9450 system is designed and intended to work in conjunction with a facility’s overall patient security program, including reasonable operating policies and procedures. The 9450 system, by itself, cannot prevent the mismatch, abduction or elopement of patients.

About this Guide

The Class II Central Power Supply Installation Guide is intended for users who install and configure the 9450 System. It includes detailed information about the 9450 System, the Class II Central Power Supply, how to Wire the Central Power Supply, and the specifications the Class II Central Power Supply. It includes the following chapters

- Chapter 1- 9450 System Power Integration
Additional Detailed Documentation

Documentation for the 9450 System is available in Portable Document Format (PDF) on the 9450 System Documentation CD-ROM. The 9450 System Documentation includes the following guides:

- Delayed Egress Exit Alarm Controller Installation Guide
- Dual Frequency Exit Alarm Receiver Installation Guide
- Ethernet and Device Network Installation Guide
- Alarming Band Receiver Installation Guide
- CodeLock Installation Guide
- Quick Look Display and Interface Installation Guide
- Staff Alert Panel Installation Guide
- UHF Antenna Installation Guide
- Infant Transmitter User Guide
- Adult Transmitter User Guide
- Model 30 Keypad Installation Guide
- Infant Security System Administrator’s Guide
- Wanderer Monitoring System Administrator’s Guide
- Wanderer Monitoring Software User Guide
- Infant Security Software User Guide
- Patient Monitor System Administrator’s Guide
- Patient Monitor Software Guide
- Product Warranty

Product Warranty

Product Warranty information can be found on the 9450 System Documentation CD-ROM or with your original system proposal and invoice.

Contact Information

For more information about RF Technologies, Inc. products, go to www.rft.com. For technical support, contact (800) 669-9946 or (262) 790-1771. For questions or comments about 9450 documentation, contact the RF Technologies Technical Publications team at techpubs@rft.com.
Chapter 1

Integrating Power with the 9450 System

Introduction

The 9450 System monitors doors, elevators, hallways, and stairwells, to assist staff in monitoring patients in a facility. A small Transmitter is placed on the wrist of a patient. If a transmitter is detected in an Exit Alarm Zone, an alarm sounds at the exit.

In addition, if the 9450 system in your facility includes computers, an alarm also sounds at a Central Server and its network of Clients. The Central Server and Clients also identify which patient sounded the alarm and the exit where the alarm occurred.

The 9450 System Cut Band Feature Option provides further security by alerting staff if a Transmitter band is tampered with or cut.

Additionally, if your system contains a Staff Alert Panel, a redundant alarm sounds if certain wires are cut or damaged.

The Central Power Supply is used to connect multiple control units and other system components to a single power source. The Central Power Supply eliminates the need to run 120V AC to each detection zone.

Some of the Central Power Supply key features include:

- A keyswitch on the exterior of the metal enclosure to turn off the 15V DC output from the Central Power Supply.
- A red power lamp located on the outside front cover for visual confirmation of 120V AC.
- A green power LED for visual confirmation of voltage output that is located on the side of the case next to the keyswitch.
- A separate barrier strip for the Electromagnetic Locks is used to ensure disconnection of the CodeLocks during fire alarms.
- In most jurisdictions, conduit is not required due to current limited Class II low voltage outputs.
- Each current limited output contains a Yellow LED that enables you to troubleshoot short circuits by zone.

A Central Power Supply is required to power the 9450 System. This single source is supplied with 120V AC to provide 15V DC to multiple devices. There is a keyswitch on the exterior of the metal enclosure to turn off the 15V DC output; the 120V AC to the Central Power Supply remains on. The red LED on the front cover
indicates that the unit is receiving 120V AC power; the green LED indicates DC voltage output. If possible, install the Central Power Supply in the center of the facility to keep the wire runs short.

This chapter includes information about how to mount, connect, and wire the Central Power Supply to the 9450 System devices. For more information about a specific device, see the other 9450 Installation Guides listed in the Preface of this Guide.

WARNING: High voltage and high energy danger is present within Central Power Supply and can result in injury or death. This device may only be opened by trained service personnel.
Installing the Central Power Supply

The Central Power Supply must be located near 120 VAC. The location of the Central Power Supply should be of equal distance from each detection zone. This will reduce the amount of cable run to each detection zone.

WARNING: When installing a product, you must follow standard, accepted safety practices, such as wearing safety glasses.
To mount the Central Power Supply

1. Determine a suitable mounting location for the Central Power Supply. A 3/4” plywood backboard is recommended for mounting the Central Power Supply and other 9450 System devices.
2. Open the enclosure.
3. Holding the enclosure against the wall, mark out the four mounting holes at the back of the enclosure.
4. Drill holes where you made the marks.

![WARNING: Before cutting openings or drilling holes through walls, you must verify that you will not strike any wiring.]

5. Select and remove a knockout in the case to allow for wire access.
6. Line up the holes at the back of the enclosure with the newly drilled holes and mount the enclosure securely to the wall using suitable anchors (Wall anchors and mounting hardware are not included).

To connect the Central Power Supply to AC

The Central Power Supply must be wired to a separate circuit breaker and/or an emergency power circuit.

1. Run appropriate wiring with 120 V AC, 60 Hz power, per NEC standards and local codes, to one of the knockouts on the Central Power Supply.
2. Connect the 120 V AC to the corresponding barrier strip per NEC specifications. Refer to Figure 1.3 on page 8.

To wire the Central Power Supply to devices

1. Run 16-gauge, 2-conductor stranded wire to each of the devices connected to the Central Power Supply. Maximum run length of 250’.
2. Connect the red wire to the block labeled “+” on the proper terminal blocks.
3. Connect the black wire to the block labeled “-” on the proper terminal blocks.
4. To meet Class II requirements, the DC outputs must be placed in 2.4 amp current limited circuits as indicated below:

![Diagram showing DC Outputs]

FIGURE 1.2: DC Outputs
FIGURE 1.3: Central Power Supply Wiring diagram
To calculate power consumption of the Central Power Supply

1. Determine the electrical current used by each device connected to the Central Power Supply.
   For the current requirements for each device, refer to the Installation Guide for each 9450 device.
   Record them in the Blank Amperage Requirement Table below.

<table>
<thead>
<tr>
<th>Device Type</th>
<th>Amp Requirement Per Device</th>
<th>Number of Devices</th>
<th>Amps x Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example EAC</td>
<td>.7</td>
<td>x3</td>
<td>= 2.1</td>
</tr>
</tbody>
</table>

   2. Make sure that the total electrical current of all the devices does not exceed the total current capacity of the Central Power Supply.

   3. Make sure that the total electric current on a current limited zone does not exceed the total current capacity of that zone.
   For more information, see Chapter 2, Power Specifications.
4. Connect the devices to the Central Power Supply using the termination points provided.

5. Label each connection terminal with the appropriate installation details.

**NOTE:** DO NOT EXCEED 9 amps at the specified voltage total across all of the outputs.

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**Electromagnetic Locks and the Central Power Supply**

A separate barrier strip is included in the Central Power Supply for electromagnetic locks to ensure disconnection of the locks during fire alarms. The supervised, normally closed, relay in the Central Power Supply opens when a fire alarm is activated. This disconnects the power to the barrier strip for the electromagnetic locks allowing residents to exit the building immediately.

In some states, a “KILL SWITCH” is required at an emergency station to immediately disconnect the power to the electromagnetic locks. If your state or local code requires a “KILL SWITCH,” connect a UL Listed, normally closed push-button switch in series with the fire alarm relay connection. The button should turn off the electromagnetic locks when pushed in, and turn them back on when pulled out.

Some states or local municipalities have additional requirements for power shutdown to electromagnetic door locks. Consult your local authorities prior to installation.
For more information and wiring instructions, refer to the installation manuals supplied with your electromagnetic door locks.

NOTE: There are separate terminal blocks for electromagnetic locks, and a fire alarm relay connection labeled “To Fire Alarm Relay.”
## Chapter 2

### Power Specifications

#### Specifications

<table>
<thead>
<tr>
<th>Size</th>
<th>6’d x 16”w x 16” h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>30 lbs</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Steel Cabinet</td>
</tr>
<tr>
<td>Color</td>
<td>Gray</td>
</tr>
<tr>
<td>Input</td>
<td>120V AC, 3A Max Single Phase Power Stripped and trimmed terminations</td>
</tr>
<tr>
<td>Output</td>
<td>15V DC, 9A maximum, branched into four Class II zones polyfused at 4A maximum each.</td>
</tr>
<tr>
<td>Wiring</td>
<td>16AWG, 2 or 4-conductor stranded CL2</td>
</tr>
<tr>
<td>Fuse AC</td>
<td>5A, 120V AC, Littlefuse 229 series Slo-Blo, 4.5 x 14.48 mm, Cartridge Type, # 229.005 RF P/N: 0240-0013</td>
</tr>
<tr>
<td>Fuse DC</td>
<td>15A, 32V, Littlefuse 312 series, 6.35 x 31.75 mm, Fast Acting Cartridge type, #312.05 RF P/N: 0240-0014</td>
</tr>
<tr>
<td>Output Diode</td>
<td>Motorola, Part No. 1N6278A</td>
</tr>
<tr>
<td>Metal Oxide Varistor Surge Protection</td>
<td>3 Harris, P/N: V130LA20C Line to GND, Common to GND, and Line to Common.</td>
</tr>
</tbody>
</table>
### Important Installation Requirements

- The 9450 System devices must be powered using a Central Power Supply. A licensed electrician must connect the Central Power Supply to a 120V AC power source.

- Sources of radio frequency (RF) interference should be at least six feet away from any 9450 devices and wiring, even through walls and ceilings. Sources of RF interference may include electrical monitors, lights, computers, televisions, and radio transmitters.

- Changes in the RF environment may affect the operation of the 9450 System. Contact the RF Technologies Technical Support Department before installing any electronic system near the system.

- When installing a CodeLock™ electromagnetic door locks, the fire alarm service company for your facility must be notified to make the connection from the Central Power Supply to the main fire alarm panel. They can also specify the proper wire gauge for the connection, depending on the distance from the Central Power Supply to the panel. The local fire inspector must be notified to approve the lock at each door.

- When installing Elevator Deactivation, the elevator service company for your facility must be notified to make the connection from the Exit Alarm Control Unit to the elevator controls.

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| Regulations | UL Listed Releasing Device 49XM  
|            | NFPA Standard 72, Five Protective Signaling Service  
|            | UL 864 Listed  

| Part Numbers | 9450-0555 |