



**SILENT
KNIGHT**

by Honeywell

INTELLIKNIGHT MODEL IFP-25

Addressable Fire Control Panel



**Installation and
Operations Manual**

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Installation Procedure

Installation Precautions - Adherence to the following will aid in problem-free installation with long-term reliability: **WARNING** - Several different sources of power can be connected to the fire alarm control panel. Disconnect all sources of power before servicing. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized. Do not attempt to install, service, or operate this unit until manuals are read and understood. **CAUTION** - System Re-acceptance Test after Software Changes: To ensure proper system operation, this product must be tested in accordance with NFPA 72 after any programming operation or change in site-specific software. Re-acceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring. All components, circuits, system operations, or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must also be tested and proper system operation verified. This system meets NFPA requirements for operation within the range of 0°C-49°C (32°F-120°F) or humidity within the range of 10%-93% at 30°C (86°F) noncondensing. However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and its peripherals be installed in an environment with a normal room temperature of 15-27° C/60-80° F. **Verify that wire sizes are adequate** for all initiating and indicating device loops. Most devices cannot tolerate more than a 10% I.R. drop from the specified device voltage. **Like all solid state electronic devices**, this system may operate erratically or can be damaged when subjected to lightning induced transients. Although no system is completely immune from lightning transients and interference, proper grounding will reduce susceptibility. Overhead or outside aerial wiring is not recommended, due to an increased susceptibility to nearby lightning strikes. Consult with the Technical Services Department if any problems are anticipated or encountered. **Disconnect AC power and batteries** prior to removing or inserting circuit boards. Failure to do so can damage circuits. Remove all electronic assemblies prior to any drilling, filing, reaming, or punching of the enclosure. When possible, make all cable entries from the sides or rear. Before making modifications, verify that they will not interfere with battery, transformer, or printed circuit board location. **Do not tighten screw terminals** more than 9 in-lbs. Over-tightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal. Fire alarm control panels contain static-sensitive components. Always ground yourself with a proper wrist strap before handling any circuits so that static charges are removed from the body. Use static suppressive packaging to protect electronic assemblies removed from the unit.

Follow the instructions in the installation, operating, and programming manuals. These instructions must be followed to avoid damage to the control panel and associated equipment. FACP operation and reliability depend upon proper installation.

While installing a fire alarm system may make lower insurance rates possible, it is not a substitute for fire insurance! **An automatic fire alarm system** - typically made up of smoke

detectors, heat detectors, manual pull stations, audible warning devices, and a fire alarm control with remote notification capability - can provide early warning of a developing fire. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire. **Any fire alarm system** may fail for a variety of reasons: Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in walls, or roofs, or on the other side of closed doors. **Smoke detectors** also may not sense a fire on another level or floor of a building. A second floor detector, for example, may not sense a first floor or basement fire. Furthermore, all types of smoke detectors, including ionization and photoelectric types, have sensing limitations. No type of smoke detector can sense every kind of fire caused by carelessness and safety hazards like smoking in bed, violent explosions, escaping gas, improper storage of flammable materials, overloaded electrical circuits, children playing with matches, or arson.

IMPORTANT! Smoke detectors must be installed in the same room as the control panel and in rooms used by the system for the connection of alarm transmission wiring, communications, signaling, and/or power. If detectors are not so located, a developing fire may damage the alarm system, crippling its ability to report a fire. **Audible warning devices** such as bells may not alert people if these devices are located on the other side of closed or partly open doors or are located on another floor of a building. **A fire alarm system** will not operate without any electrical power. If AC power fails, the system will operate from standby batteries only for a specified time. **Rate-of-Rise heat detectors** may be subject to reduced sensitivity over time. For this reason, the rate-of-rise feature of each detector should be tested at least once per year by a qualified fire protection specialist. **Equipment used in the system** may not be technically compatible with the control. It is essential to use only equipment listed for service with your control panel. **Telephone lines** needed to transmit alarm signals from a premise to a central monitoring station may be out of service or temporarily disabled. **The most common cause** of fire alarm malfunctions, however, is inadequate maintenance. All devices and system wiring should be tested and maintained by professional fire alarm installers following written procedures supplied with each device. System inspection and testing should be scheduled monthly or as required by National and/or local fire codes. Adequate written records of all inspections should be kept.

Contents

Section 1

Introduction 1-1

| | | |
|-------|------------------------------------|-----|
| 1.1 | Overview of Basic System | 1-1 |
| 1.1.1 | Hardware Features | 1-1 |
| 1.1.2 | Software Features | 1-1 |
| 1.2 | About this Manual | 1-1 |
| 1.2.1 | Terms Used in this Manual | 1-2 |
| 1.3 | Compatible Products | 1-2 |
| 1.4 | How to Contact Silent Knight | 1-2 |

Section 2

Agency Listings, Approvals, and Requirements 2-1

| | | |
|-------|--|-----|
| 2.1 | Federal Communications Commission (FCC) | 2-1 |
| 2.2 | Underwriters Laboratories (UL) | 2-3 |
| 2.2.1 | Requirements for All Installations | 2-3 |
| 2.2.2 | Requirements for Central Station Fire Alarm Systems | 2-4 |
| 2.2.3 | Requirements for Local Protected Fire Alarm Systems | 2-4 |
| 2.2.4 | Requirements for Remote Station Protected Fire Alarm Systems - Digital Alarm Communicator Transmitter (DACT) | 2-4 |
| 2.3 | ULC Requirements | 2-4 |

Section 3

Before You Begin Installing 3-1

| | | |
|---------|---|-----|
| 3.1 | What's in the Box? | 3-1 |
| 3.2 | Environmental Specifications | 3-1 |
| 3.3 | Electrical Specifications | 3-2 |
| 3.4 | Wiring Specifications | 3-3 |
| 3.5 | Board Assembly Diagram | 3-4 |
| 3.6 | Calculating Current Draw and Standby Battery | 3-5 |
| 3.6.1 | Worksheet Requirements | 3-5 |
| 3.6.1.1 | Current Draw Worksheet for HFS SLC Devices for UL 864 | 3-6 |
| 3.6.1.2 | Current Draw Worksheet for HFS SLC Devices for ULC | 3-7 |
| 3.6.2 | Maximum Battery Standby Load for UL 864 | 3-8 |
| 3.6.3 | Maximum Battery Standby Load for ULC | 3-8 |

Section 4

Control Panel Installation 4-1

| | | |
|-------|---|-----|
| 4.1 | Mounting the Control Panel Cabinet | 4-1 |
| 4.1.1 | Preventing Water Damage | 4-1 |
| 4.1.2 | Removing the IFP-25 Assembly from the Housing | 4-1 |

- 4.1.3 Dead Front Installation and removal 4-2
 - 4.1.3.1 Installing the Dead Front 4-2
 - 4.1.3.2 Dead Front Removal 4-3
- 4.2 AC Power Connection 4-4
 - 4.2.1 AC Power Connection for UL 864 applications 4-4
 - 4.2.2 AC Power Connection for Canadian Applications 4-5
- 4.3 Battery Connection 4-6
 - 4.3.1 RBB Accessory Cabinet 4-7
 - 4.3.1.1 Installing the RBB Accessory Cabinet and Batteries 4-7
- 4.4 Telephone Connection 4-9
- 4.5 Notification Appliance/Auxiliary Power Circuits 4-10
 - 4.5.1 Conventional Notification Appliance Circuit 4-10
 - 4.5.2 Auxiliary Power Installation 4-11
 - 4.5.2.1 Door Holder Power 4-11
 - 4.5.2.2 Constant Power 4-12
 - 4.5.2.3 Resettable Power 4-12
- 4.6 On-Board Relays (Conventional, Power Limited) 4-13
 - 4.6.1 Common Trouble Relay 4-13
 - 4.6.2 Programmable Relays 4-13
- 4.7 Remote Station Applications 4-14
 - 4.7.1 City Box Connection Using the 5220 Module 4-14
 - 4.7.2 NFPA 72 Polarity Reversal 4-16
 - 4.7.2.1 Alarm, Supervisory and Trouble Reverse Polarity Outputs 4-16

Section 5
SLC Device Installation 5-1

- 5.1 List of HFS SLC Devices 5-1
- 5.2 Maximum Number of Devices 5-1
- 5.3 Wiring Requirements for SLC Devices 5-2
 - 5.3.1 Wiring SLC in Style 4 (Class B) Configuration 5-2
- 5.4 Wiring HFS SLC Detectors 5-5
- 5.5 Addressing HFS SLC Devices 5-6

Section 6
Programming 6-1

- 6.1 UL 864 Programming Requirements 6-1
- 6.2 Control Panel Programming 6-2
- 6.3 Default Control Panel Configuration. 6-2
 - 6.3.1 Default Mapping of SLC Inputs to Outputs 6-2
 - 6.3.2 Mapping of SLC Inputs to Outputs. 6-2
 - 6.3.3 Default Mapping for the 2 built-in Notification Circuits. 6-3
 - 6.3.4 Maximum SLC address point count 6-4
 - 6.3.5 Installer Code 6-4
 - 6.3.6 Jump Start Auto Learn Process 6-4
- 6.4 Modifying Panel Programming using a PC 6-5
 - 6.4.1 Connecting the panel to a PC 6-5
- 6.5 Panel Programming Options 6-6
 - 6.5.1 System Options 6-6
 - 6.5.1.1 Synchronized Strobes Active When Horns Silenced 6-6

- 6.5.1.2 Silence/Reset Inhibit Enabled 6-6
- 6.5.1.3 Water Flow Delay 6-6
- 6.5.1.4 Installer Code (User ID) 6-6
- 6.5.1.5 Alarm Verification Time 6-6
- 6.5.1.6 Auto Test 6-6
- 6.5.1.7 Low AC Report Delay 6-6
- 6.5.1.8 Walk Test Reporting 6-7
- 6.5.1.9 Walk Test duration 6-7
- 6.5.1.10 Walk Test NAC Timeout 6-7
- 6.5.1.11 Clock Source 6-7
- 6.5.1.12 Auto Daylight Savings Time 6-7
- 6.5.2 Zone Programming 6-8
 - 6.5.2.1 SLC Addresses Within Each Zone 6-8
 - 6.5.2.2 Zone Silenceable 6-8
 - 6.5.2.3 Zone Type 6-8
- 6.5.3 Output Point Programming 6-8
- 6.5.4 Notification Appliance Circuit (NAC) Programming 6-9
 - 6.5.4.1 Circuit Function 6-9
 - 6.5.4.2 Conventional Notification Circuit Mapping 6-9
- 6.5.5 Relay Programming Options 6-10
 - 6.5.5.1 General System Relay Silence Option 6-10
- 6.5.6 Dialer Phone Line Programming Options 6-10
 - 6.5.6.1 Line Prefix 6-10
 - 6.5.6.2 Dial Tone Detection 6-10
 - 6.5.6.3 Line Monitoring Enabled (Y/N) 6-10
 - 6.5.6.4 Dialing Option 6-10
 - 6.5.6.5 Pulse Dialing Format 6-10
- 6.5.7 Dialer Account programming Options 6-11
 - 6.5.7.1 Account Number 6-11
 - 6.5.7.2 Phone Number 6-11
 - 6.5.7.3 Reporting Format 6-11
 - 6.5.7.4 Reporting Filters 6-11

Section 7

System Operation 7-1

- 7.1 System Reset 7-1
- 7.2 Lamp Test 7-1
- 7.3 System Silence 7-1
- 7.4 Acknowledge 7-1
- 7.5 Viewing Active Alarm Points 7-1
- 7.6 Viewing Active Supervisory Points 7-2
- 7.7 Viewing Active Trouble Points 7-2
- 7.8 Walk Test 7-2
- 7.9 Fire Drill 7-2
- 7.10 Zone Disable Feature 7-3
- 7.11 Disabling Notification Circuits 7-3
- 7.12 Loss of AC power 7-3
- 7.13 Remote Connection Feature (ULC Installations Only) 7-3
- 7.14 Low Battery 7-4
- 7.15 Ground Fault 7-4
- 7.16 Phone Line Monitoring 7-4

| | | |
|------|------------------------------------|-----|
| 7.17 | Reporting Account Monitoring | 7-4 |
| 7.18 | SLC Fault | 7-4 |
| 7.19 | Dialer Error | 7-4 |

Section 8

| | |
|------------------------|-----|
| Reporting | 8-1 |
|------------------------|-----|

| | | |
|-----|---|-----|
| 8.1 | Receivers Compatible with the Control Panel | 8-1 |
| 8.2 | Reporting Formats Dialer Outputs | 8-1 |

Appendix A

| | |
|---------------------------------|-----|
| Compatible Devices | A-1 |
|---------------------------------|-----|

| | | |
|-----|---|------|
| A.1 | Notification Appliances | A-1 |
| A.2 | Four-Wire Smoke Detectors/Devices (UL Listed) | A-8 |
| A.3 | Door Holders (UL Listed) | A-10 |
| A.4 | Relays (UL Listed) | A-10 |

Silent Knight Fire Product Warranty and Return Policy

Model IFP-25 Basic Operating Instructions

Section 1

Introduction

The IFP-25 Fire Alarm Control / Communicator is an addressable fire control system that meets the requirements of UL 864, ULC 527, and ULC 559.

1.1 Overview of Basic System

1.1.1 Hardware Features

- The IFP-25 has one signaling line circuit (SLC) that supports 25 Honeywell Fire Systems SLC devices.
- 2.0A of output power is available through 2 sets of terminals for notification appliance circuits or 1.0A for auxiliary power applications. Each circuit is power limited per UL 864 and can source up to 2.0A

Note: Total output power for both circuits must not exceed 2.0A.

- Built-in dual phone line, digital alarm communicator/transmitter (DACT).
- Reports events to central station by zone.
- Two general purpose Form C programmable relays.
- One Form C Trouble Relay.

1.1.2 Software Features

- The IFP-25 is an addressable panel that operates like a 5 zone conventional panel.
- Advanced addressable smoke detector features:
 - Automatic drift compensation
 - Maintenance alert region
 - Point status eliminates calibrated smoke test requirements for NFPA 72
- Auto learn “JumpStart” feature for easy programming
- A choice of output patterns available for notification outputs, including ANSI 3.41 temporal signal
- Built-in synchronization appliance support for Amseco, Gentex[®], Wheelock[®], or System Sensor[®].

1.2 About this Manual

This manual is intended to be a complete reference for all installation and operation tasks for the IFP-25. Please let us know if the manual does not meet your needs in any way. We value your feedback!

1.2.1 Terms Used in this Manual

The following terminology is used with the IFP-25 system:

Table 1-1

| Term | Description |
|-------------------------------------|---|
| SLC | Signaling Line Circuit |
| Input Point | An addressable sensing device, such as a smoke or heat detector or a contact monitor device. |
| Input Zone | A protected area made up of input points. |
| Output Point (or Output Circuit) | A notification point or circuit for notification appliances. Relay circuits and auxiliary power circuits are also considered output points. |
| Output (or “Cadence”) Pattern | The pattern that the output will use, for example, Constant or ANSI 3.41. |

1.3 Compatible Products

See Section 5.1 for a list of compatible SLC devices from Silent Knight for use with the IFP-25.

See Appendix A for a list of compatible notification appliances.

1.4 How to Contact Silent Knight

If you have a question or encounter a problem not covered in this manual, contact Silent Knight Technical Support at 800-446-6444.

To order parts, contact Silent Knight Sales at 800-328-0103 or 203-484-7161 in Connecticut.

Limitations of Fire Alarm Systems

Manufacturer recommends that smoke and/or heat detectors be located throughout a protected premise following the recommendations of the current edition of the National Fire Protection Association Standard 72 (NFPA 72), manufacturer's recommendations, State and local codes, and the recommendations contained in Guide for the Proper Use of System Smoke Detectors, which is made available at no charge to all installing dealers. A study by the Federal Emergency Management Agency (an agency of the United States government) indicated that smoke detectors may not go off or give early warning in as many as 35% of all fires. While fire alarm systems are designed to provide warning against fire, they do not guarantee warning or protection against fire. A fire alarm system may not provide timely or adequate warning, or simply may not function, for a variety of reasons. For example:

- Particles of combustion or smoke from a developing fire may not reach the sensing chambers of smoke detectors because:

Barriers such as closed or partially closed doors, walls, or chimneys may inhibit particle or smoke flow.

Smoke particles may become cold, stratify, and not reach the ceiling or upper walls where detectors are located.

Smoke particles may be blown away from detectors by air outlets

Smoke particles may be drawn into air returns before reaching the detector.

In general, smoke detectors on one level of a structure cannot be expected to sense fires developing on another level.

- The amount of smoke present may be insufficient to alarm smoke detectors. Smoke detectors are designed to alarm at various levels of smoke density. If such density levels are not created by a developing fire at the location of detectors, the detectors will not go into alarm.
- Smoke detectors, even when working properly, have sensing limitations. Detectors that have photo electronic sensing chambers tend to detect smoldering fires better than flaming fires, which have little visible smoke. Detectors that have ionizing-type sensing chambers tend to detect fast flaming fires better than smoldering fires. Because fires develop in different ways and are often unpredictable in their growth, neither type of detector is necessarily best and a given type of detector may not provide adequate warning of a fire.
- Smoke detectors are subject to false alarms and nuisance alarms and may have been disconnected by users. For example, a smoke detector located in or near a kitchen may go into nuisance alarm during normal operation of kitchen appliances. In addition, dusty or steamy environments may cause a smoke detector to falsely alarm. If the location of a smoke detector causes an abundance of false alarms or nuisance alarms, do not disconnect the smoke detector; call a professional to analyze the situation and recommend a solution.
- Smoke detectors cannot be expected to provide adequate warning of fires caused by arson, children playing with matches (especially within bedrooms), smoking in bed, violent explosions (caused by escaping gas, improper storage of flammable materials, etc.).
- Heat detectors do not sense particles of combustion and are designed to alarm only when heat on their sensors increases at a predetermined rate or reaches a predetermined level. Heat detectors are designed to protect property, not life.

- Warning devices (including horns, sirens, and bells) may not alert people or wake up sleepers who are located on the other side of closed or partially open doors. A warning device that activates on a different floor or level of a dwelling or structure is less likely to awaken or alert people. Even persons who are awake may not notice the warning if the alarm is muffled by noise from a stereo, radio, air conditioner or other appliance, or by passing traffic. Audible warning devices may not alert the hearing-impaired (strobes or other devices should be provided to warn these people). Any warning device may fail to alert people with a disability, deep sleepers, people who have recently used alcohol or drugs, or people on medication or sleeping pills.

Please note that:

- i) Strobes can, under certain circumstances, cause seizures in people with conditions such as epilepsy.
 - ii) Studies have shown that certain people, even when they hear a fire alarm signal, do not respond or comprehend the meaning of the signal. It is the property owner's responsibility to conduct fire drills and other training exercises to make people aware of fire alarm signals and instruct on the proper reaction to alarm signals.
 - iii) In rare instances, the sounding of a warning device can cause temporary or permanent hearing loss.
- Telephone lines needed to transmit alarm signals from a premises to a central station may be out of service or temporarily out of service. For added protection against telephone line failure, backup radio transmission systems are recommended.
 - System components, though designed to last many years, can fail at any time. As a precautionary measure, it is recommended that smoke detectors be checked, maintained, and replaced per manufacturer's recommendations.
 - System components will not work without electrical power. If system batteries are not serviced or replaced regularly, they may not provide battery backup when AC power fails.
 - Environments with high air velocity or that are dusty or dirty require more frequent maintenance.

In general, fire alarm systems and devices will not work without power and will not function properly unless they are maintained and tested regularly.

While installing a fire alarm system may make the owner eligible for a lower insurance rate, an alarm system is not a substitute for insurance. Property owners should continue to act prudently in protecting the premises and the people in their premises and should properly insure life and property and buy sufficient amounts of liability insurance to meet their needs.

Requirements and recommendations for proper use of fire alarm systems including smoke detectors and other fire alarm devices:

Early fire detection is best achieved by the installation and maintenance of fire detection equipment in all rooms and areas of the house or building in accordance with the requirements and recommendations of the current edition of the National Fire Protection Association Standard 72, *National Fire Alarm Code* (NFPA 72), the manufacturer's recommendations, State and local codes and the recommendations contained in Guide for the Proper Use of System Smoke Detectors, which is made available at no charge to all installing dealers. For specific requirements, check with the local Authority Having Jurisdiction (ex. Fire Chief) for fire protection systems.

Requirements and Recommendations include:

- Smoke Detectors shall be installed in sleeping rooms in new construction and it is recommended that they shall also be installed in sleeping rooms in existing construction.
- It is recommended that more than one smoke detector shall be installed in a hallway if it is more than 30 feet long.
- It is recommended that there shall never be less than two smoke detectors per apartment or residence.
- It is recommended that smoke detectors be located in any room where an alarm control is located, or in any room where alarm control connections to an AC source or phone lines are made. If detectors are not so located, a fire within the room could prevent the control from reporting a fire.
- All fire alarm systems require notification devices, including sirens, bells, horns, and/or strobes. In residential applications, each automatic alarm initiating device when activated shall cause the operation of an alarm notification device that shall be clearly audible in all bedrooms over ambient or background noise levels (at least 15dB above noise) with all intervening doors closed.
- It is recommended that a smoke detector with an integral sounder (smoke alarm) be located in every bedroom and an additional notification device be located on each level of a residence.
- To keep your fire alarm system in excellent working order, ongoing maintenance is required per the manufacturer's recommendations and UL and NFPA standards. At a minimum the requirements of Chapter 10 of NFPA 72 shall be followed. A maintenance agreement should be arranged through the local manufacturer's representative. Maintenance should be performed annually by authorized personnel only.

The most common cause of an alarm system not functioning when a fire occurs is inadequate maintenance. As such, the alarm system should be tested weekly to make sure all sensors and transmitters are working properly.

Section 2

Agency Listings, Approvals, and Requirements

Install and maintain in accordance with NFPA 72. Detector spacing shall be in accordance to NFPA 72. End-of -line relays and resistors shall be placed within the electrical box located and the end of the initiating circuit. Testing and maintenance should be performed according to NFPA 72.

2.1 Federal Communications Commission (FCC)

The following information must be provided to the telephone company before the IFP-25 can be connected to the phone lines:

| | | |
|---|---------------------------|--|
| A | Manufacturer: | Silent Knight |
| B | Model Number: | IFP-25 |
| C | FCC registration number: | US: AC6AL05B205600 |
| | Ringer equivalence: | 0.5B |
| D | Type of jack: | RJ31X |
| E | Facility Interface Codes: | Loop Start: 02LS2 Ground Start: 02GS2 |
| F | Service Order Code: | 9.0F |

- This device may not be directly connected to coin telephone or party line services.
- This device cannot be adjusted or repaired in the field. In case of trouble with the device, notify the installing company or return to:

Silent Knight
12 Clintonville road
Northford, CT 06472-1610
203-484-7161
- If the IFP-25 causes harm to the telephone network, the telephone company will notify the user in advance that temporary discontinuance of service may be required. If advance notice is not practical, the telephone company will notify the user as soon as possible. Users have the right to file complaints, if necessary, with the Federal Communications Commission.

7. The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice to allow you to make the necessary modifications to maintain uninterrupted service.

Warning

This device has been verified to comply with FCC Rules Part 15. Operation is subject to the following conditions:
(1) This device may not cause radio interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

- a) This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the wiring diagram of this equipment is a label that contains, among other information, a product identifier in the format US: AC6AL05B-205600. If requested, this number must be provided to the telephone company.
- b) See Section 4.4 for phone jack information.
- c) A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant telephone cord and modular plug is provided with this product. It is designed to be connected to a compatible modular jack that is also compliant. See installation instructions for details.
- d) The REN is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. For products approved after July 23, 2002, the REN for this product is part of the product identifier that has the format US: AC6AL05B-205600. The digits represented by ## are the REN without a decimal point (e.g., 03 is a REN of 0.3). For earlier products, the REN is separately shown on the label.
- e) If this equipment IFP-25 causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.
- f) The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.
- g) If trouble is experienced with this equipment IFP-25, for repair or warranty information, please contact Silent Knight. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.
- h) See warranty in back of this manual for repair and replacement information.
- i) Connection to party line service is subject to state tariffs. Contact the state public utility

commission, public service commission or corporation commission for information.

- j) If your home has specially wired alarm equipment connected to the telephone line, ensure the installation of this IFP-25 does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or qualified installer.

Electrical Safety Advisory:

Parties responsible for equipment requiring AC power should consider including an advisory notice in their customer information suggesting the customer use a surge arrestor. Telephone companies report that electrical surges, typically lightning transients, are very destructive to customer terminal equipment connected to AC power sources. This has been identified as a major nationwide problem.

2.2 Underwriters Laboratories (UL)

2.2.1 Requirements for All Installations

General requirements are described in this section. When installing an individual device, refer to the specific section of the manual for additional requirements. The following subsections list specific requirements for each type of installation (for example, Central Station Fire Alarm systems, Local Protected Fire Alarm systems, and so on).

1. All field wiring must be installed in accordance with NFPA 70 National Electric Code.
2. Use ONLY the addressable smoke detectors specified in Section 5.1 of this manual.
3. Use UL listed notification appliances compatible with the IFP-25, choose from those specified in the *Appendix* at the back of this manual.
4. A full system checkout must be performed any time the panel is programmed.

Restricted Options:

- The loss of AC signal is defaulted to 3 hours however the system allows settings from 0 - 30 hours. For UL certified installations this number must be set from 1 to 3 hours.
- The system allows the Alarm Verification time to be set from 1 to 255 seconds. For UL certified installations the setting must be a maximum of 60 seconds.
- Call forwarding shall not be used.
- Waterflow and Supervisory have to be set to Latching as shown in the restricted options table in Section 6. See Table 6-1.

2.2.2 Requirements for Central Station Fire Alarm Systems

1. Use both phone lines. Enable phone line monitors for both lines.
2. You must program a phone number and a test time so that the IFP-25 sends an automatic daily test to the central station.
3. The AC Loss Hours option must be set from 1-3 hours.

2.2.3 Requirements for Local Protected Fire Alarm Systems

At least one UL listed supervised notification appliance must be used.

2.2.4 Requirements for Remote Station Protected Fire Alarm Systems - Digital Alarm Communicator Transmitter (DACT)

1. Do not exceed the current load restrictions shown in Section 3.6.
2. The AC Loss Hours option must be set from 1-3 hours.

2.3 ULC Requirements

Install in accordance with the Canadian Electrical Code, C22.1, Part 1, Section 32.

Section 3

Before You Begin Installing

This section of the manual is intended to help you plan your tasks to facilitate a smooth installation. Please read this section thoroughly, especially if you are installing a IFP-25 panel for the first time.

3.1 What's in the Box?

The IFP-25 ships with the following hardware:

- A cabinet with all hardware assembled
- Two keys for the front door
- Installation and Operation manual P/N 53693.
- Ten 4.7K ohm end-of-line resistors
- A battery cable for batteries wired in series

3.2 Environmental Specifications

It is important to protect the IFP-25 control panel from water. To prevent water damage, the following conditions should be AVOIDED when installing the units:

- Intended for indoor use in dry locations only
- Do not mount directly on exterior walls, especially masonry walls (condensation)
- Do not mount directly on exterior walls below grade (condensation)
- Protect from plumbing leaks
- Protect from splash caused by sprinkler system inspection ports
- Do not mount in areas with humidity-generating equipment (such as dryers, production machinery)

When selecting a location to mount the IFP-25 control panel, the unit should be mounted where it will NOT be exposed to temperatures outside the range of 0°C-49°C (32°F-120°F) or humidity outside the range of 10%-93% at 30°C (86°F) noncondensing.

3.3 Electrical Specifications

Table 3-1 list the electrical specifications for the IFP-25 field wiring as well as a description of the each individual terminal and their respective electrical rating. For location of the terminals refer to Figure 3-2. See also Section 4 for installation.

Table 3-1: Terminal Descriptions

| Terminal Block | Label | | Description | Rating | | Earth Ground Fault Impedance |
|----------------|---------|-------------------------------|--------------------------------|------------------|------------------|------------------------------|
| | Group | Individual | | Voltage | Current | Ohms |
| TB 1 | SLC Out | - | SLC Terminals | 24 VDC | 100 mA | 0Ω |
| | | + | | | | |
| | *NAC1 | - | Notification Appliance Circuit | 24 VDC | 2.0 Amp | 0Ω |
| | | + | Auxiliary power | | 1.0 Amp | |
| | *NAC2 | - | Notification Appliance Circuit | 24 VDC | 2.0 Amp | 0Ω |
| | | + | Auxiliary power | | 1.0 Amp | |
| | TROUBLE | NO | Normally open relay contact | 24 VDC | 2.5 A, resistive | N/A |
| | | COM | Common terminal | | | |
| | | NC | Normally closed relay contact | | | |
| | RELAY 1 | NO | Normally open relay contact | 24 VDC | 2.5 A, resistive | N/A |
| | | COM | Common terminal | | | |
| | | NC | Normally closed relay contact | | | |
| RELAY 2 | NO | Normally open relay contact | 24 VDC | 2.5 A, resistive | N/A | |
| | COM | Common terminal | | | | |
| | NC | Normally closed relay contact | | | | |
| TB 2 | TELCO 1 | RING | Phone Line 1 Telco Ring | N/A | N/A | N/A |
| | | TIP | Phone Line 1 Telco Tip | | | |
| | PHONE 1 | RING | Phone Line 1 Phone Ring | | | |
| | | TIP | Phone Line 1 Phone Tip | | | |
| | TELCO 2 | RING | Phone Line 2 Telco Ring | | | |
| | | TIP | Phone Line 2 Telco Tip | | | |
| PHONE 2 | RING | Phone Line 2 Phone Ring | | | | |
| | TIP | Phone Line 2 Phone Tip | | | | |

* Regulated for NAC circuits

* Special application when used for auxiliary power circuits.

3.4 Wiring Specifications

Induced noise (transfer of electrical energy from one wire to another) can interfere with telephone communication or cause false alarms. To avoid induced noise, follow these guidelines:

- Isolate input wiring from high current output and power wiring. Do not pull one multi-conductor cable for the entire panel. Instead, separate the wiring as follows:

| | |
|-----------------------|---------------------|
| High voltage | AC power Terminals |
| SLC loops | Phone line circuits |
| Notification circuits | NAC1 through NAC2 |
| Relay circuits | |

- Do not pull wires from different groups through the same conduit. If you must run them together, do so for as short a distance as possible or use shielded cable. Connect the shield to earth ground at the panel. You must route high and low voltages separately.
- Route the wiring around the inside perimeter of the cabinet. It should not cross the circuit board where it could induce noise into the sensitive microelectronics or pick up unwanted RF noise from the high speed circuits. See Figure 3-1 for an example.
- High frequency noise, such as that produced by the inductive reactance of a speaker or bell, can also be reduced by running the wire through ferrite shield beads or by wrapping it around a ferrite toroid.

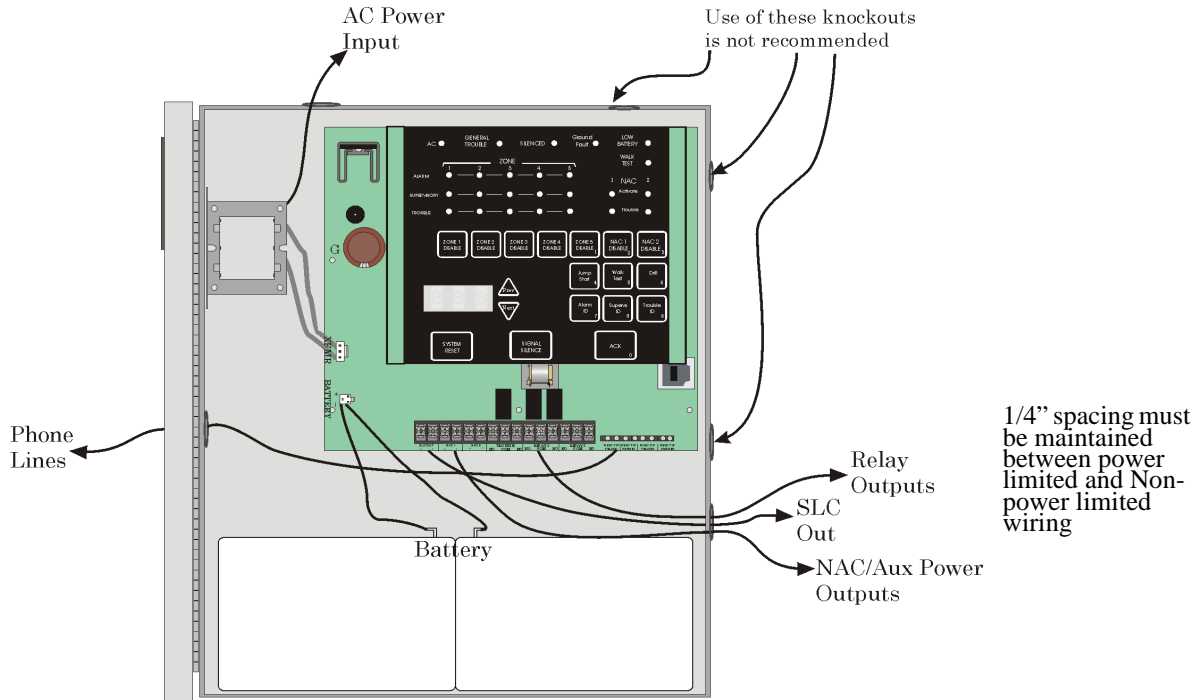


Figure 3-1 Wire Routing Example

3.5 Board Assembly Diagram

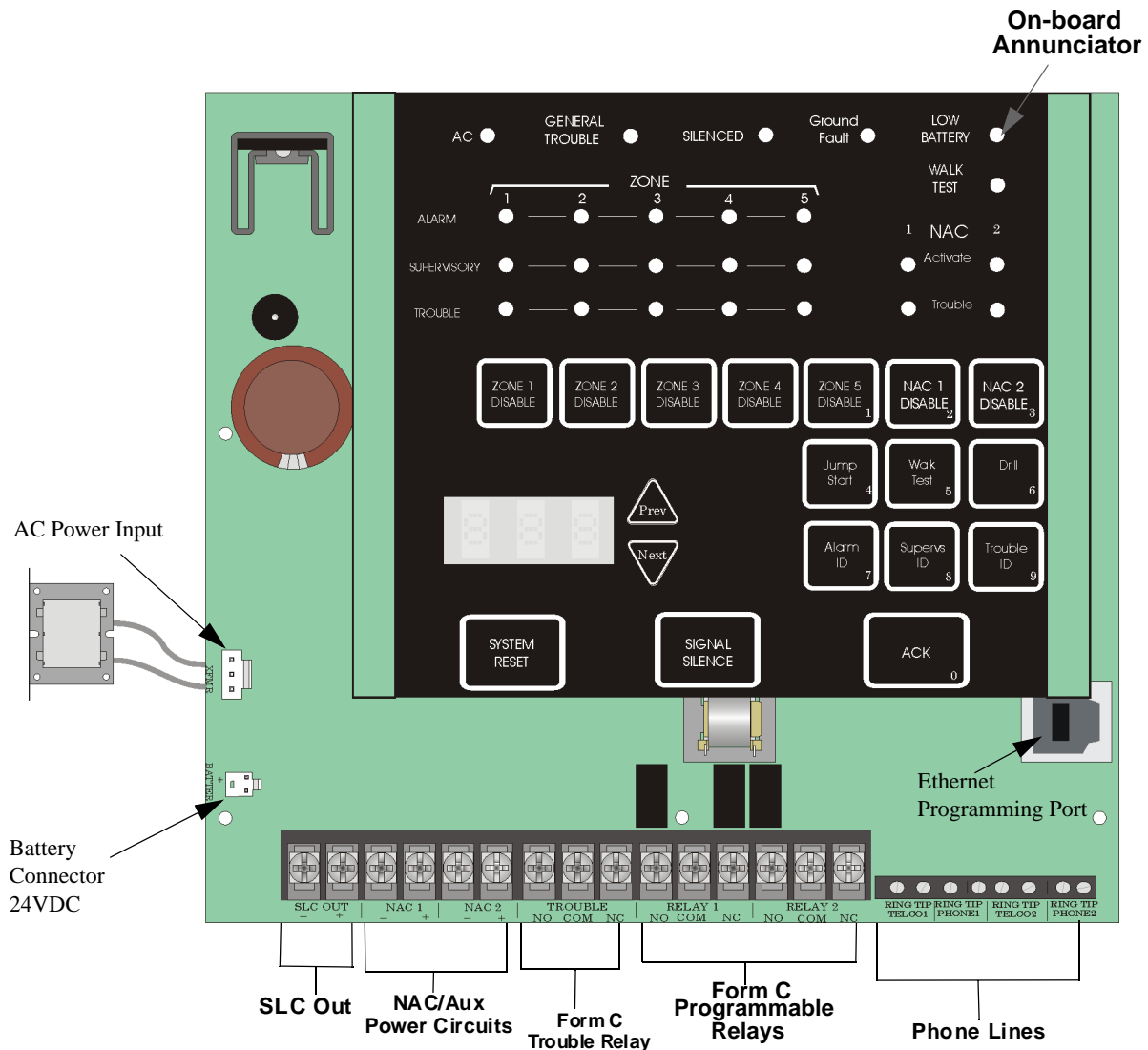


Figure 3-2 Model IFP-25 Assembly

Figure 3-2 shows the IFP-25 circuit board stack. If you should need to remove the control board for repair, remove the three mounting screws which hold the control board in the cabinet. Then lift the control board out of the cabinet.

3.6 Calculating Current Draw and Standby Battery

This section is for helping you determine the current draw and standby battery requirements (Table 3-2).

3.6.1 Worksheet Requirements

The following steps must be taken when determining IFP-25 current draw and standby battery requirements.

1. For the IFP-25, the worst case current draw is listed for the panel and all addressable devices. Fill in the number of addressable devices that will be used in the system and compute the current draw requirements for alarm and standby. Record this information in the Current Calculation Worksheet at Line A.
2. Add up the current draw for all auxiliary devices and record in the table at Line B.
3. Add up all notification appliance loads and record in the table at Line C.
4. For notification appliance circuits and auxiliary devices not mentioned in the manual, refer to the device manual for the current ratings.
5. Make sure that the total alarm current you calculated, including current for the panel itself, does not exceed 2.0 A. This is the maximum alarm current for the IFP-25 control panel.

If the current is above 2.0 A you will need to use a notification power expander(s) such as the Silent Knight 5495 power module, to distribute the power loads so that the IFP-25 or the power expanders do not exceed their power rating.
6. Complete the remaining instructions in the Current Calculation Worksheet for determining battery size requirements.

3.6.1.1 Current Draw Worksheet for HFS SLC Devices for UL 864

Use Table 3-2 to determine amp-hour requirements during alarm/battery standby operation. (Copy the page if additional space is required.) You can install up to 25 HFS SLC devices.

Table 3-2: Current Calculation Worksheet for HFS Devices

| Device | # of Devices | Current per Device | Standby Current | Alarm Current | |
|--|---|------------------------|------------------------|---------------|----|
| For each device use this formula: This column X This column = Current per number of devices. | | | | | |
| Fire Panel (Current draw from battery) | 1 | Standby: 135 mA | 135 mA | | |
| | | Alarm: 220 mA | | 220 mA | |
| Addressable SLC Detectors | | | | | |
| HFS-P | (25 max. detectors or modules in any combination) | Standby/Alarm: 0.27 mA | mA | mA | |
| HFS-PT | | | mA | mA | |
| HFS-D | | | mA | mA | |
| HFS-T | | | mA | mA | |
| Addressable SLC Modules | | | | | |
| HFS-MM | (25 max. detectors or modules in any combination) | Standby/Alarm 0.375 mA | mA | mA | |
| IDP-PULL-SA, | | | mA | mA | |
| IDP-PULL-DA | | | Standby/Alarm 0.375 mA | mA | mA |
| HFS-MR | | | Standby/Alarm 0.255mA | mA | mA |
| Total System Current | | | | | |
| Auxiliary Devices Refer to devices manual for current rating. | | | | | |
| | | Alarm/Standby: mA | mA | mA | |
| | | Alarm/Standby: mA | mA | mA | |
| | | Alarm/Standby: mA | mA | mA | |
| | | Alarm/Standby: mA | mA | mA | |
| Auxiliary Devices Current | | | | | |
| Notification Appliance Circuits Refer to device manual for current rating. | | | | | |
| | | Alarm: mA | | mA | |
| | | Alarm: mA | | mA | |
| | | Alarm: mA | | mA | |
| | | Alarm: mA | | mA | |
| Notification Appliances Current | | | | mA | |
| Total current ratings of all devices in system (line A + line B + C) | | | mA | mA | |
| Total current ratings converted to amperes (line D x .001): | | | A | A | |
| Number of standby hours (24 or 60 for NFPA 72, chapter 1, 1-5.2.5): | | | H | | |
| Multiply lines E and F. Total standby AH | | | AH | | |
| Alarm sounding period in hours. (For example, 5 minutes = .0833 hours) | | | | H | |
| Multiply lines E and H. Total alarm AH | | | | AH | |
| Add lines G and I. ¹ Total ampere hours required | | | AH | | |

1. Use next size battery with capacity greater than required.

3.6.1.2 Current Draw Worksheet for HFS SLC Devices for ULC

Use Table 3-3 to determine amp-hour requirements during alarm/battery standby operation. (Copy the page if additional space is required.) You can install up to 25 HFS SLC devices. The maximum battery size for ULC installations is 18 Amp/hr.

Table 3-3: Current Calculation Worksheet for HFS Devices for ULC

| | Device | # of Devices | Current per Device | Standby Current | Alarm Current | |
|---|--|--------------|----------------------------------|------------------------|---------------|----|
| | For each device use this formula: This column X This column = Current per number of devices. | | | | | |
| | Fire Panel (Current draw from battery) | 1 | Standby: 165 mA Alarm: 220 mA | 165 mA | 220 mA | |
| | Addressable SLC Detectors | | | | | |
| | HFS-PA | (25 max.) | Standby/Alarm: 0.27 mA | mA | mA | |
| | HFS-PTA | | | mA | mA | |
| | HFS-DA | | | mA | mA | |
| | HFS-TA | | | mA | mA | |
| | Addressable SLC Modules | | | | | |
| | HFS-MMA | (25 Max) | Standby/Alarm 0.375 mA | mA | mA | |
| | IDP-PULL-SA, | | | mA | mA | |
| | IDP-PULL-DA | | | Standby/Alarm 0.375 mA | mA | mA |
| | HFS-MRA | | | Standby/Alarm 0.255mA | mA | mA |
| A | Total System Current | | | | | |
| | Auxiliary Devices Refer to devices manual for current rating. | | | | | |
| | | | Alarm/Standby: mA | mA | mA | |
| | | | Alarm/Standby: mA | mA | mA | |
| | | | Alarm/Standby: mA | mA | mA | |
| | | | Alarm/Standby: mA | mA | mA | |
| B | Auxiliary Devices Current | | | | | |
| | Notification Appliance Circuits Refer to device manual for current rating. | | | | | |
| | | | Alarm: mA | | mA | |
| | | | Alarm: mA | | mA | |
| | | | Alarm: mA | | mA | |
| | | | Alarm: mA | | mA | |
| C | Notification Appliances Current | | | | | |
| D | Total current ratings of all devices in system (line A + line B + C) | | | | mA | mA |
| E | Total current ratings converted to amperes (line D x .001): | | | | A | A |
| F | Number of standby hours (24 or 60 for NFPA 72, chapter 1, 1-5.2.5): | | | | H | |
| G | Multiply lines E and F. Total standby AH | | | | AH | |
| H | Alarm sounding period in hours. (For example, 5 minutes = .0833 hours) | | | | | H |
| I | Multiply lines E and H. Total alarm AH | | | | | AH |
| J | Add lines G and I. ¹ Total ampere hours required | | | | AH | |

1. Use next size battery with capacity greater than required.

3.6.2 Maximum Battery Standby Load for UL 864

Table 3-4 shows the standby load calculations for the IFP-25 based on 24 hours of standby. The standby load calculations of line D in the Current Draw Calculation Worksheet must be less than the number shown in Table 3-4 for the selected battery size, standby hour and alarm time. The numbers below have a built in 20% derating factor for the battery amp hour capacity.

Table 3-4: Maximum Battery Standby loads for 24 Hour Standby

| Rechargeable Battery Size | 24 hr Standby, 5 mins. Alarm | 24 hr Standby, 15 min alarm | 24 hr Standby, 20 min alarm |
|---------------------------|------------------------------|-----------------------------|-----------------------------|
| 7 AH | 226 mA | 213 mA | 206 mA |
| 12 AH | 393 mA | 379 mA | 372 mA |
| 18 AH | 593 mA | 579 mA | 572 mA |
| 24 AH | 793 mA | 779 mA | 772 mA |
| 33 AH | 1.09 A | 1.08 A | 1.07 A |

3.6.3 Maximum Battery Standby Load for ULC

Table 3-5 shows the ULC standby load calculations for the IFP-25 based on 24 hours of standby. The standby load calculations of line D in the Current Draw Calculation Worksheet must be less than the number shown in Table 3-5 for the selected battery size, standby hour and alarm time. The numbers below have a built in 40% derating factor for the battery amp hour capacity.

Table 3-5 Maximum Battery Standby loads for ULC 24 Hour Standby

| Rechargeable Battery Size | 24 hr Standby, 5 mins. Alarm | 24 hr Standby, 15 min alarm | 24 hr Standby, 20 min alarm |
|---------------------------|------------------------------|-----------------------------|-----------------------------|
| 7 AH | 226 mA | 213 mA | 206 mA |
| 12 AH | 393 mA | 379 mA | 372 mA |
| 18 AH | 529 mA | 515 mA | 508 mA |

Warning

Silent Knight does not support the use of batteries smaller than those listed in Table 3-4. If you use a battery too small for the installation, the system could overload the battery resulting in the installation having less than the required 24 hours standby power. Use Table 3-2 to calculate the correct battery amperes/hour rating needed for your installation. It is recommended that you replace batteries every five years.

Section 4

Control Panel Installation

Caution!

To avoid the risk of electrical shock and damage to the unit, power should be OFF at the control panel while installing or servicing.

4.1 Mounting the Control Panel Cabinet

Read the environmental specifications in Section 3.2 before mounting the IFP-25 panel.

The IFP-25 cabinet dimensions are:

12-3/4" W x 15-1/8" H x 3-3/8" D (32.39 cm W x 38.42 cm H x 8.57 cm D).

The IFP-25 panel should be located within a secured area, where it is accessible to main drop wiring runs and where it can be easily tested and serviced. Building occupants are responsible for maintaining the panel should be able to hear alarms and troubles. When selecting a location, keep in mind that the panel itself is the main source of alarm and trouble annunciation.

When mounting on interior walls, use appropriate screw anchors in plaster. When mounting on concrete, especially when moisture is expected, attach a piece of 3/4 inch plywood to the concrete surface and then attach the IFP-25 to the plywood. Also mount any other desired components to the plywood.

DO NOT flush-mount the IFP-25 cabinet.

4.1.1 Preventing Water Damage

Water damage to the fire system can be caused by moisture entering the cabinet through the conduits. Conduits that are installed to enter the top of the cabinet are most likely to cause water problems. Installers should take reasonable precautions to prevent water from entering the cabinet. Water damage is not covered under warranty.

4.1.2 Removing the IFP-25 Assembly from the Housing

If it should ever be necessary to remove the control panel assembly from the cabinet for repair, do so by removing the screws that hold the control panel in to the cabinet. Do not attempt to disassemble the circuit boards.

4.1.3.2 Dead Front Removal

Follow these steps to properly remove the dead front panel from the control panel cabinet.

1. Remove the two annunciator screws, do not discard them. See Figure 4-1.
2. Tilt the dead front forward to clear the top of the cabinet and left the dead front out of the cabinet. See Figure 4-1.
3. Reinsert the two annunciator screws. See Figure 4-1.

4.2 AC Power Connection

4.2.1 AC Power Connection for UL 864 applications

At installation, connect the AC terminals to the power source as shown in Figure 4-2. It may be necessary for a professional electrician to make this connection. Connect black and white wires from transformer to 120V power. Connect ground wire from 120V power to screw labeled G on the IFP-25 circuit board.

The AC terminals are rated at 120 VAC, 60 Hz, 1.5A and 230 VAC, 50/60Hz, .75A.

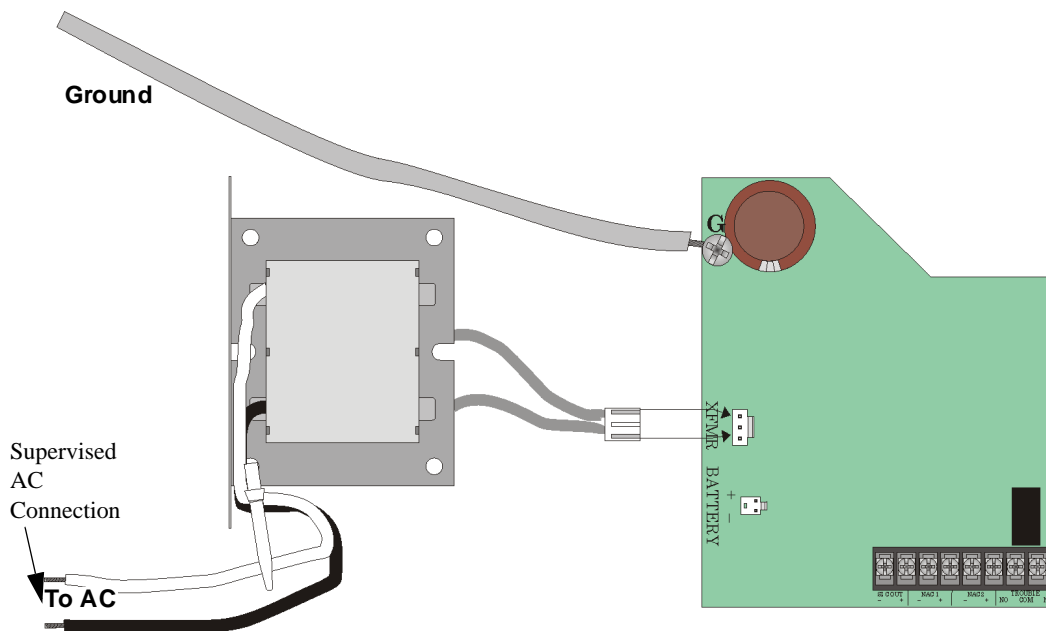


Figure 4-2 120/230 VAC Power Connection

4.2.2 AC Power Connection for Canadian Applications

For Canadian applications, an AC terminal block is supplied standard with the IFP-25. The AC terminal block is factory installed on the left of the circuit board chassis as shown in Figure 4-3.

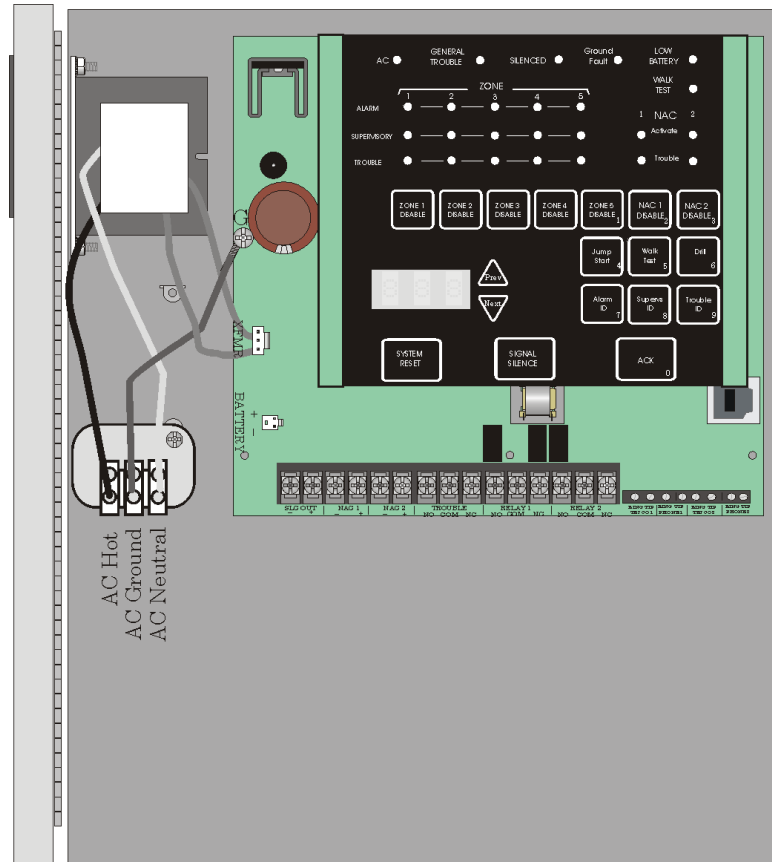


Figure 4-3 AC terminal Block Connections

4.3 Battery Connection

The control panel battery charge capacity is 7.0 to 33 AH or 18 AH for ULC installations. The main control cabinet can house batteries up to 7 AH, larger capacity batteries can be housed in a Remote Battery Box (P/N RBB). See Section 4.3.1 for details. Use 12V batteries of the same AH rating. Determine the correct AH rating as per your current load calculation (see Section 3.6). Maximum charging current for batteries is 3.1A @ 27 VDC.

Wire batteries in series to produce a 24-volt equivalent. Do not parallel batteries to increase the AH rating.

The following steps and diagram explain how to connect the batteries.

1. Connect the black wire from the control panel negative (–) battery terminal to the negative (–) side of Battery #2.
2. Connect the jumper wire provided (P/N 140694) from the positive (+) side of Battery #2 to the (–) negative side of Battery #1.
3. Connect the red wire from the control panel positive (+) terminal to the positive (+) side of Battery #1.

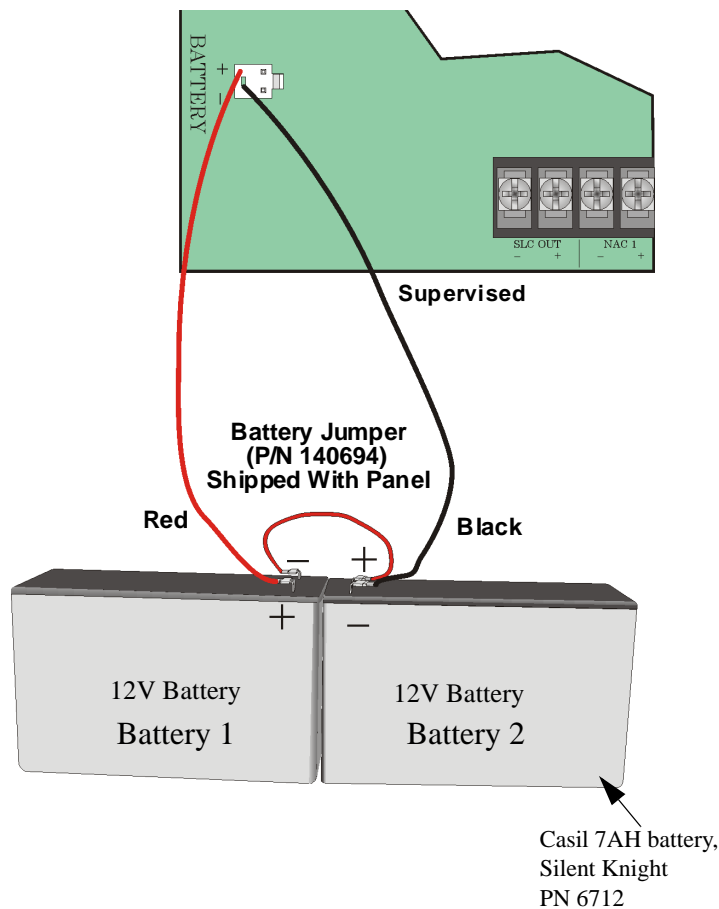


Figure 4-4 Battery Connection

4.3.1 RBB Accessory Cabinet

The Model RBB Accessory cabinet can be used when your backup batteries are too large to fit into the main control panel cabinet. The RBB cabinet holds batteries up to the 35 AH size. The RBB dimensions are 16" W x 10" H x 6" D (40.64 cm W x 25.4 cm H x 15.24 cm D).

4.3.1.1 Installing the RBB Accessory Cabinet and Batteries

To properly install the accessory cabinet and backup batteries, follow these steps:

1. Mount the accessory cabinet. See figure Figure 4-5 for the four cabinet mounting holes.
 - If mounting onto drywall the accessory cabinet must be mounted onto 3/4-inch plywood. This is necessary because the weight of the batteries inside the accessory cabinet could cause the cabinet to pull away from the drywall.
 - When mounting on concrete, especially when moisture is expected, attach a piece of 3/4-inch plywood to the concrete surface and then attach the RBB cabinet to the plywood.
 - If using the battery cable extenders provided (P/N 140643), mount the RBB cabinet no more than 18" away from the main control panel cabinet. This will ensure that the battery cables reach the battery terminals.

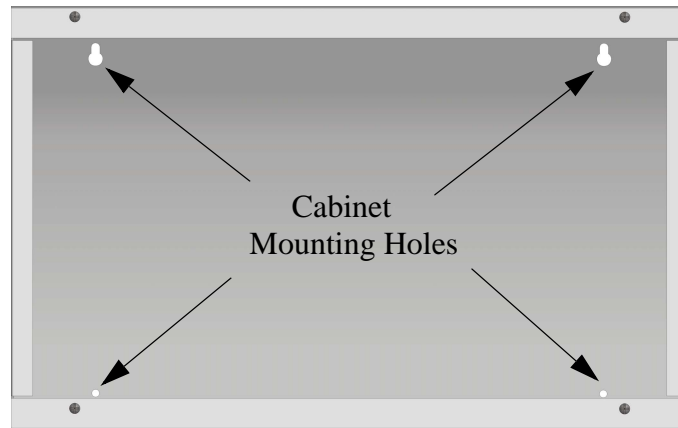


Figure 4-5 RBB Cabinet Mounting Holes

2. Connect the main control panel battery cables to the battery cable extenders as shown in Figure 4-6.

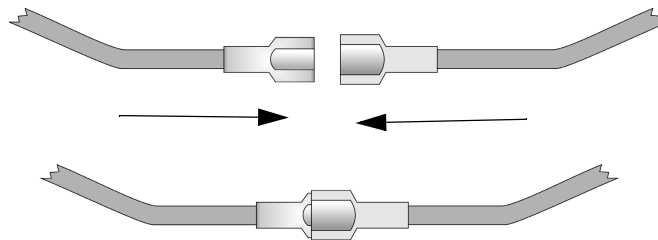


Figure 4-6 Splicing Control panel Battery Cable to RBB Battery Cable Extenders

3. Run extended battery cable from control panel cabinet through conduit to RBB cabinet. See Figure 4-7.

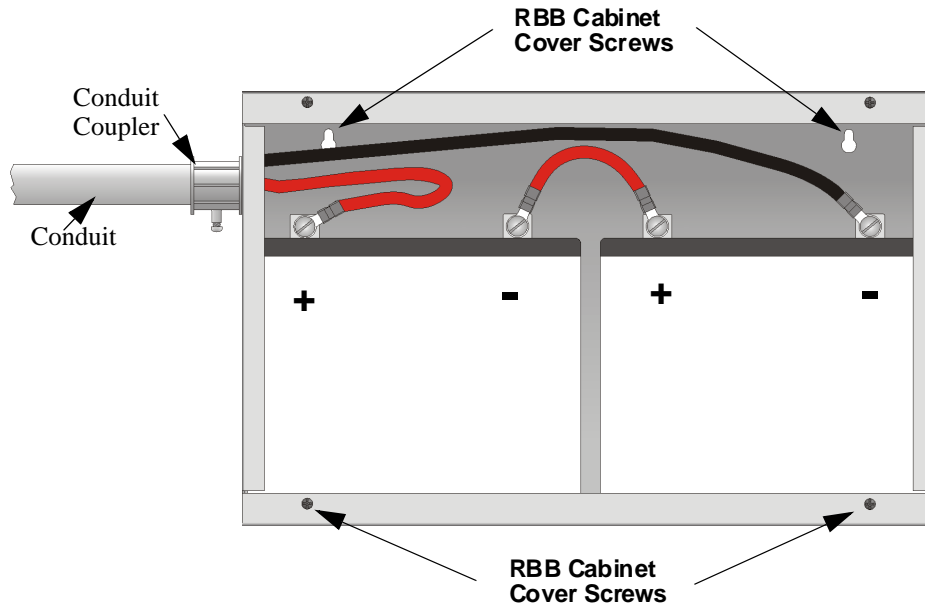


Figure 4-7 Battery Connections in the RBB Cabinet

Note: Figure 4-7 is an example of how the wire connections can be routed. However, any other cabinet knock-outs (on either the main control panel or the RBB cabinet), that are not previously being used may be utilized to connect conduit between the two cabinets.

4. Connect battery leads to the backup battery terminals. See Figure 4-7.
Observe the proper polarity to prevent damage to the batteries or the control panel.
5. Insert the RBB cover screws into the cover mounting holes (see Figure 4-7).
Screw the cover screw 3/4 of the way into the cover mounting hole.
6. Align the cover plate mounting keyhole over the cover mounting screws. See Figure 4-8.

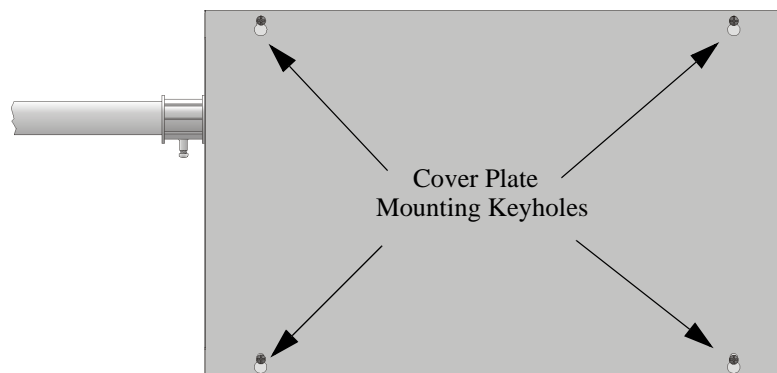


Figure 4-8 Cover Plate Mounting Keyholes and Cover Mounting Screws Alignment

7. Slide the cover into place and tighten the cover mounting screws. See Figure 4-8.

4.4 Telephone Connection

Connect the telephone lines as shown in Figure 4-9. The Model 7860 phone cord is available from Silent Knight for this purpose.

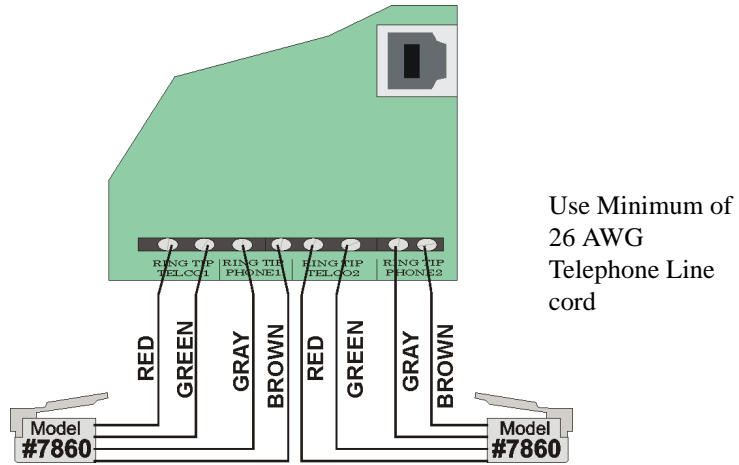


Figure 4-9 Connection of Telephone Lines

4.5 Notification Appliance/Auxiliary Power Circuits

The two outputs of the IFP-25 FACP can be programmed to be used as NACs or as Aux power.

This section of the manual explains how to install conventional notification appliances and how these terminals can be used for auxiliary power.

4.5.1 Conventional Notification Appliance Circuit

The IFP-25 supports Class B (Style Y) configurations for notification appliance applications.

You must use an appliance from the list of compatible appliances in the Appendix A at the back of this manual. Each circuit can source up to 2.0A (total current for the system must not exceed 2.0A)

To install a Class B notification appliance circuit:

1. Wire Class B Notification appliances as shown in Figure 4-10.
2. Configure the circuit through programming.

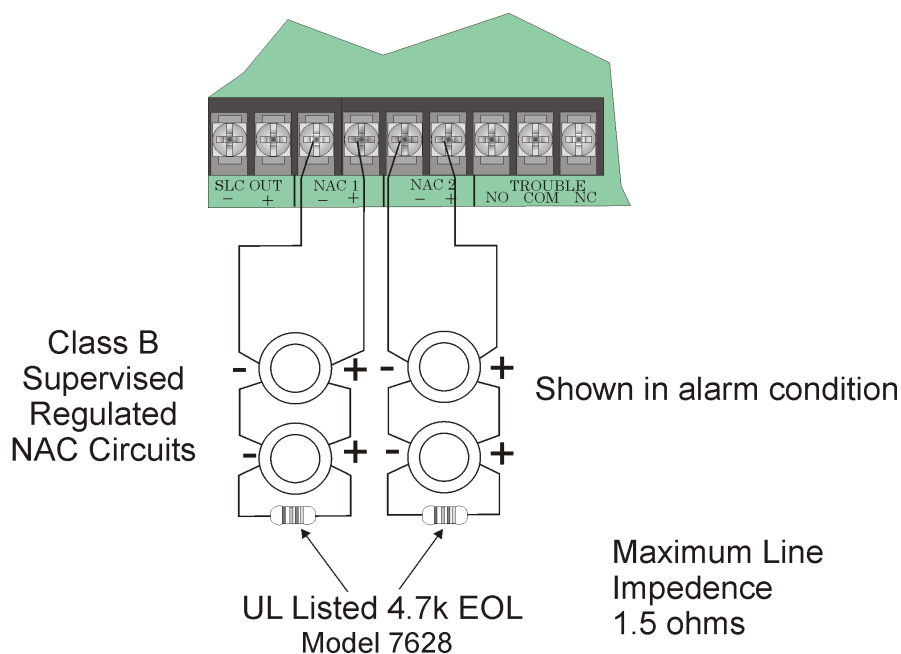


Figure 4-10 Class B Notification Appliance Circuit Wiring

4.5.2 Auxiliary Power Installation

NAC Circuits 1 and 2 on the control panel can be used as auxiliary power circuits. The three types of auxiliary power available are:

- Door Holder (see section 4.5.2.1)
- Constant (see section 4.5.2.2)
- Resettable Power (see section 4.5.2.3)

Auxiliary power circuits are power limited. Each circuit can source up to 1.0A (total current for system must not exceed 2.0A).

To install an auxiliary power circuit:

1. Wire the NAC circuit(s) that will be used for auxiliary power. See Figure 3-2 for location of NAC circuits.
2. Configure the auxiliary power output through programming.

4.5.2.1 Door Holder Power

Door holder power is intended for fire door applications. When there are no alarms in the system and the panel has AC power, door holder circuits have 24 volt power present at their terminals. Any alarm will cause power to disconnect. Power will be re-applied when the system is reset. If AC power is off for more than 15 seconds, the auxiliary door holder power will be disconnected to conserve the battery backup. When AC power is restored, power is immediately restored to the door holder circuits.

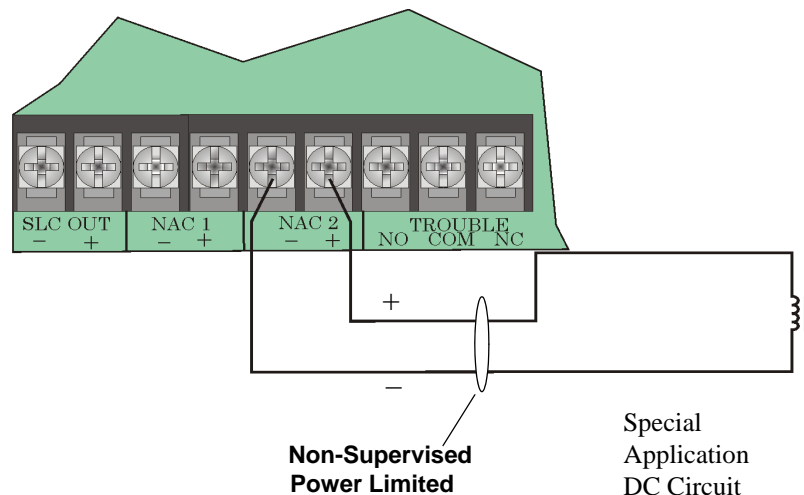


Figure 4-11 Example of an Auxiliary Power For Door Holder

Use a UL listed door holder see list from Appendix A-3, for this application.

4.5.2.2 Constant Power

Use constant power for applications that require a constant auxiliary power source. Power is always present at Constant circuits.

4.5.2.3 Resettable Power

Resettable power is typically used to power beam detectors, flame detectors and conventional 4-wire smoke detectors. For circuits selected as Resettable, 24 volt power is always present at the terminals unless a system reset occurs. If a system reset occurs, power is disconnected from the terminals for 30 seconds, then re-applied.

4.6 On-Board Relays (Conventional, Power Limited)

The control panel has two built-in programmable relays and a built-in trouble relay. All relays are Form C rated at 2.5 A @ 24 VDC Resistive.

4.6.1 Common Trouble Relay

The control panel has a dedicated Form C trouble relay built into terminals labeled TROUBLE. The relay provides a normally open and a normally closed contact. The trouble relay will deactivate under any trouble condition. Form C rated at 2.5 A @ 24 VDC Resistive.

Note: The N.C. contact is the relay contact that is closed when the panel has power and there are no alarm or trouble conditions.

4.6.2 Programmable Relays

The control panel has two Form C programmable relays built into terminals labeled RELAY 1 or RELAY 2. Each relay provides a normally open and a normally closed contact.

To configure one or two programmable relays, follow these steps.

1. Wire Relay 1 and/or Relay 2 as needed for your application. See 4.6.1 for the location of the relay terminals.
2. Default programming causes Relay 1 to activate for any supervisory. Relay 2 will activate for any alarm. For relay applications that require different behavior see Section 6.

4.7 Remote Station Applications

4.7.1 City Box Connection Using the 5220 Module

This section describes how to connect the control panel to a municipal fire alarm box or “city box” as required by NFPA 72 Auxiliary Protected Fire Alarm systems for fire alarm service. The city (master) box is an enclosure that contains a manually operated transmitter used to send an alarm to the municipal communication center which houses the central operating part of the fire alarm system.

City Box Standby Current: 0 (Notification supervision current accounted for in control panel draw.)

Alarm Current: 1 Amp for 1 second

Max Voltage: 24 VDC

The maximum coil and wire resistance (combined) must not exceed 30 ohms.

To install the 5220 for city box connection:

1. Use one of the knockouts on the right side of the control panel to connect the 5220 using a short piece of conduit (must not exceed 20 feet in length).
2. Wire the 5220 to the control panel as shown in Figure 4-12. This drawing also shows how to connect the city box coil to terminals 3 and 4 on the 5220. Do not install an EOL resistor in the terminals of the NAC circuit used for this application.
3. Connect earth ground wire to the 5220 chassis with mounting screw.
4. Program NAC1 as auxiliary and power constant on. Program NAC2 as a non-silencing, constant on notification circuit.

It is not possible to reset the remote indication until you clear the condition and reset the control panel.

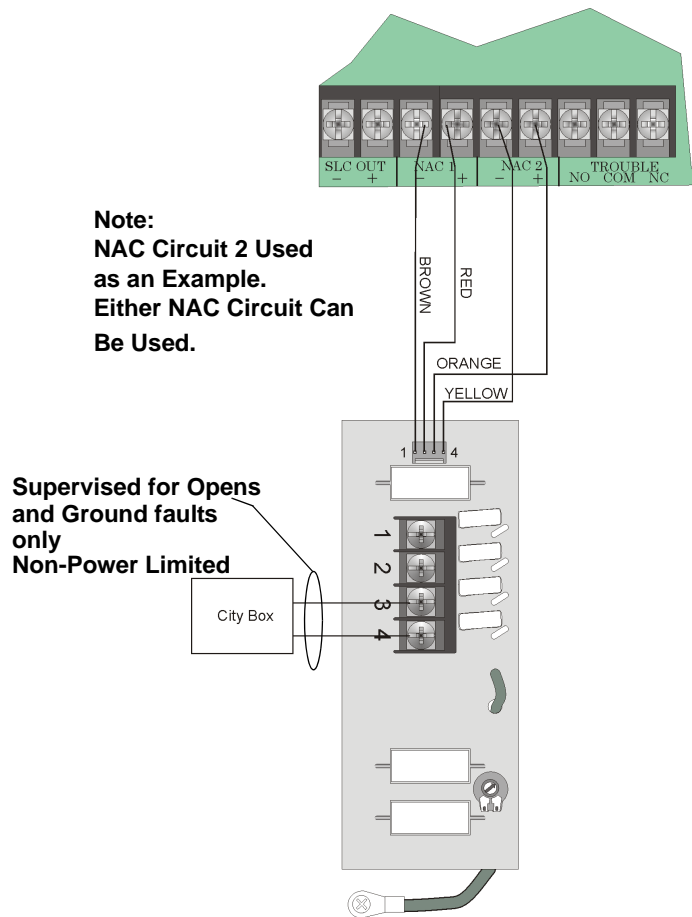
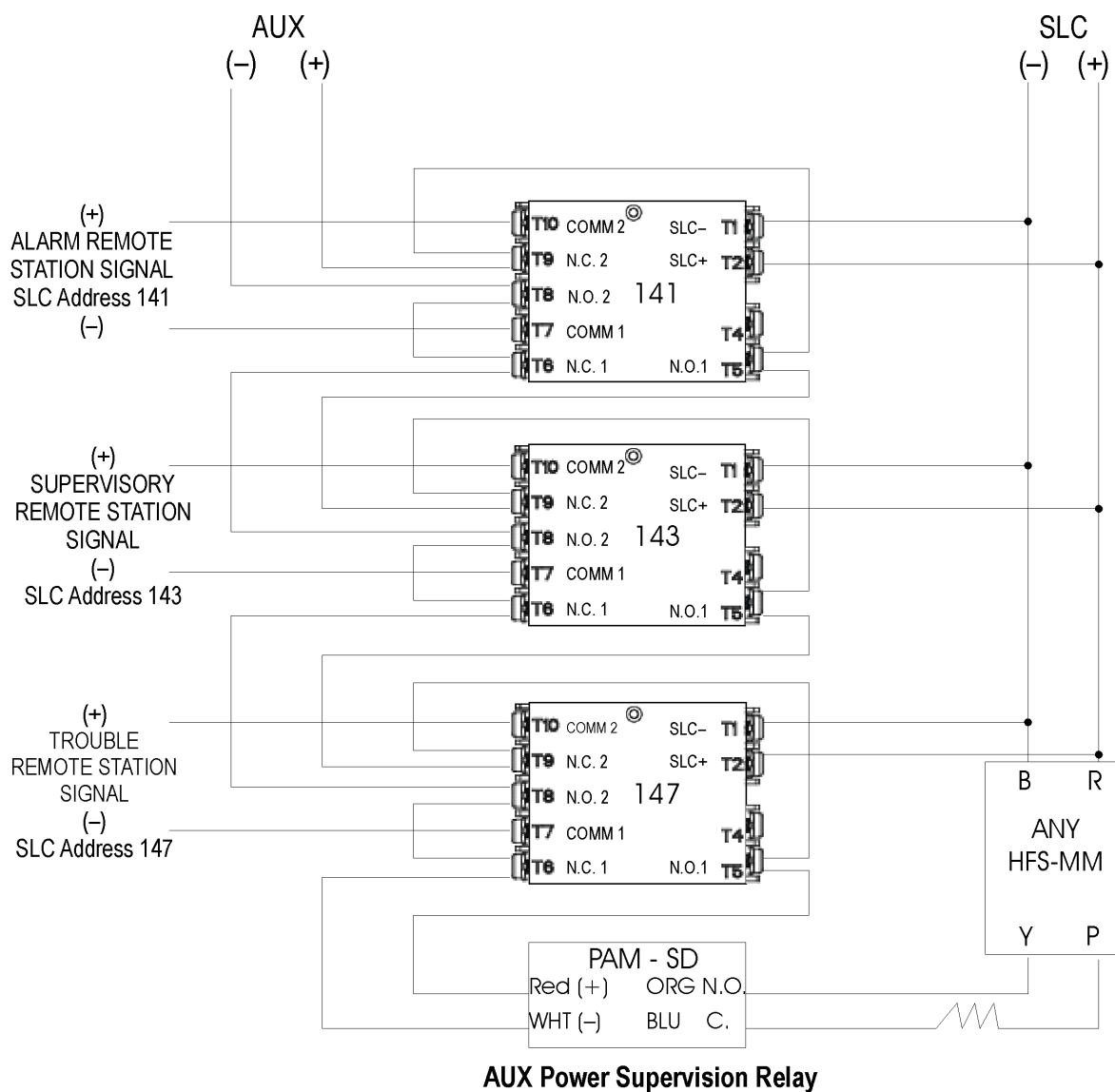


Figure 4-12 City Box Connection

4.7.2 NFPA 72 Polarity Reversal

4.7.2.1 Alarm, Supervisory and Trouble Reverse Polarity Outputs

Three HFS-MR modules are required to independently report alarm, supervisory and trouble. SLC addresses 141, 143, and 147 must be used as shown in Figure 4-13.



AUX Power Supervision Relay

*Must use In/Out wire technique to properly supervise AUX power to all 3 relays

Figure 4-13 Reverse Polarity output wiring

Section 5

SLC Device Installation

Caution!

To avoid the risk of electrical shock and damage to the unit, power should be OFF at the control panel while installing or servicing.

5.1 List of HFS SLC Devices

The following HFS SLC devices can be used with the control panel. See the device installation instructions for more information (packaged with the device).

Table 5-1

| HFS Part Number | Model Name/Description | Install Sheet PN |
|------------------|---|------------------|
| HFS-P, HFS-PA | Photoelectric smoke detector | I56-3483-000R |
| HFS-PT, HFS-PTA | Photoelectric smoke detector with thermal (135°F) | |
| HFS-D, HFS-DA | Photoelectric duct smoke detector with extended air speed range | I56-3488-001R |
| HFS-T, HFS-TA | Fixed temperature thermal detector (135°F) | I56-3485-000R |
| IDP-Pull-SA | Addressable single action pull station | I56-2736-002 |
| IDP-Pull-DA | Addressable dual action pull station | I56-2737-002 |
| HFS-MM, HFSP-MMA | Mini monitor module | I56-3487-000 |
| HFS-MR, HFS-MRA | Addressable relay module | I56-3486-000 |

5.2 Maximum Number of Devices

- A IFP-25 system supports a maximum of 25 HFS SLC detectors and modules, in any combination.

5.3 Wiring Requirements for SLC Devices

The following information applies to all SLC devices. Refer to the section that describes the type of device you are installing for details.

5.3.1 Wiring SLC in Style 4 (Class B) Configuration

No special wire is required for addressable loops. The wire can be untwisted, unshielded, solid or stranded as long as it meets the National Electric Code 760-121 requirements for power limited fire protective signaling cables. Wire distances are computed using copper wire.

Maximum wiring resistance is 40 ohms to the farthest SLC device.

Maximum loop length depends on the wire gauge.

All SLC wiring is Supervised, and Power-limited.

Table 5-2 Maximum wiring distance for HFS SLC devices

| Wire Gauge | Max. Distance for HFS SLC devices |
|------------|-----------------------------------|
| 22 AWG | 1200 feet |
| 18 AWG | 3100 feet |
| 16 AWG | 4900 feet |
| 14 AWG | 7900 feet |
| 12 AWG | 10,000 feet |

The following figures show how length is determined for out and back tap and T-Tap style wiring.

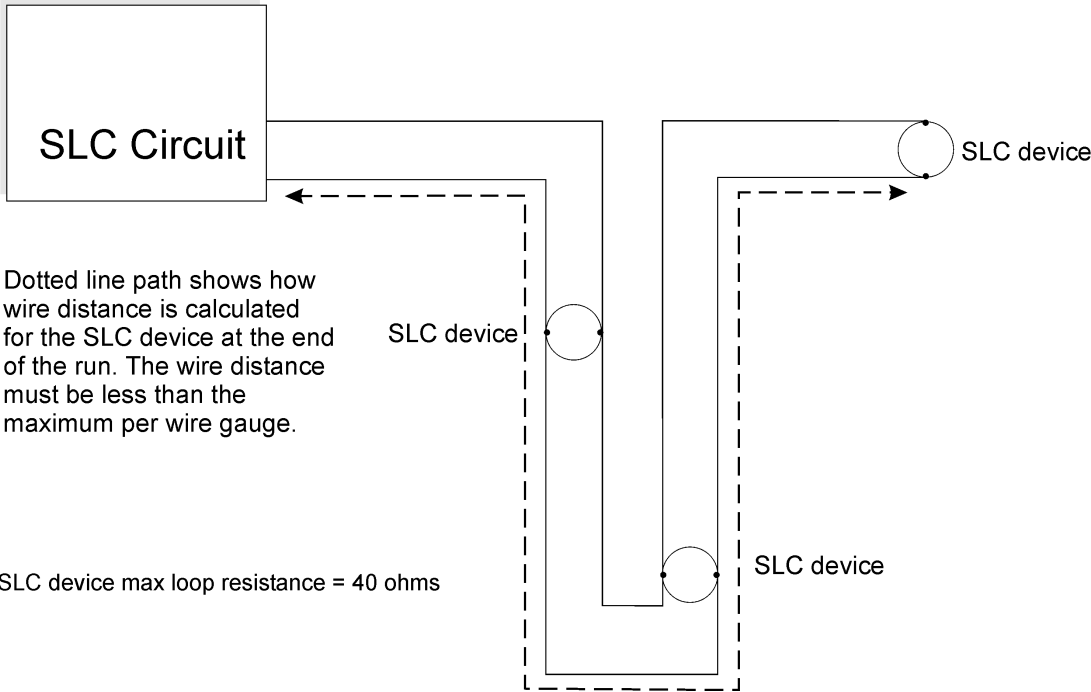


Figure 5-1 Calculating wire run length for a simple out and back

When using T-taps, the total length of all taps and the main bus must not exceed 40,000 feet. This requirement must be met in addition to the maximum distance requirements for the various wire gauges.

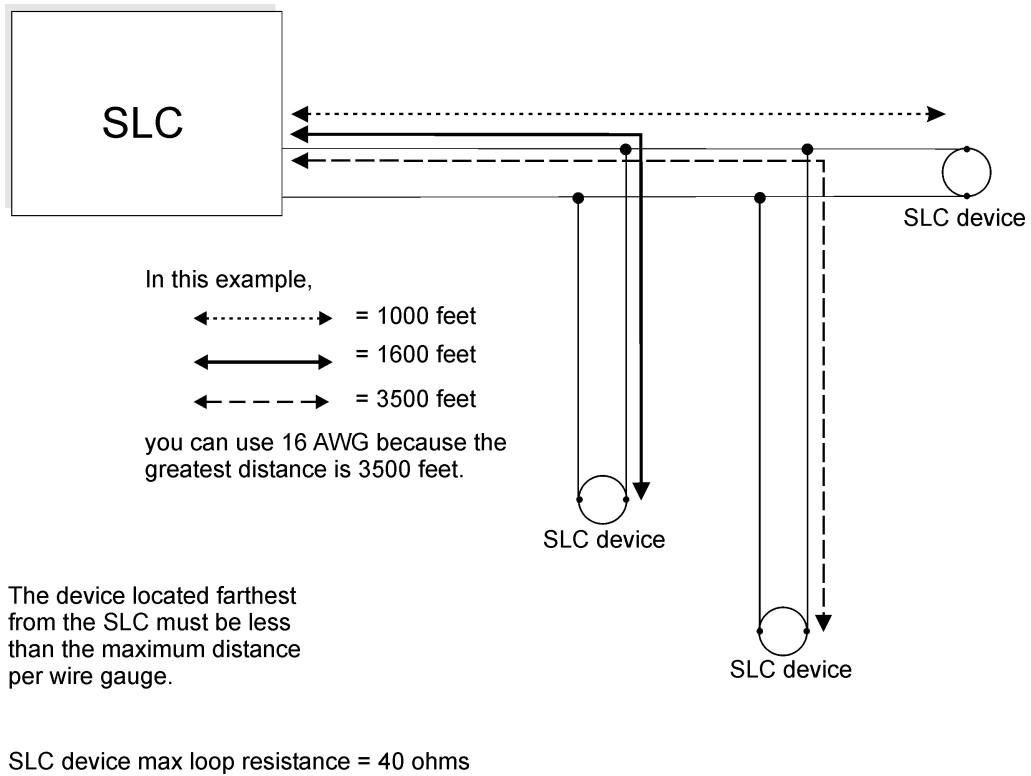


Figure 5-2 Calculating Wire Run Length for a T-tap

5.4 Wiring HFS SLC Detectors

This section describes how to install heat and smoke detectors. All detectors ship with installation instructions. Refer to the detector's installation instructions for more detailed information.

This information applies to the following HFS models:

- HFS-P, HFS-PA Photoelectric Smoke Detector
- HFS-PT, HFS-PTA Photoelectric Smoke Detector with Thermal
- HFS-D, HFS-DA Photoelectric Duct Detector
- HFS-T, HFS-TA Fixed Temperature Detector

To wire HFS detectors:

1. Wire device bases as shown in Figure 5-3.
2. Set the address for each device as described in Section 5.5.

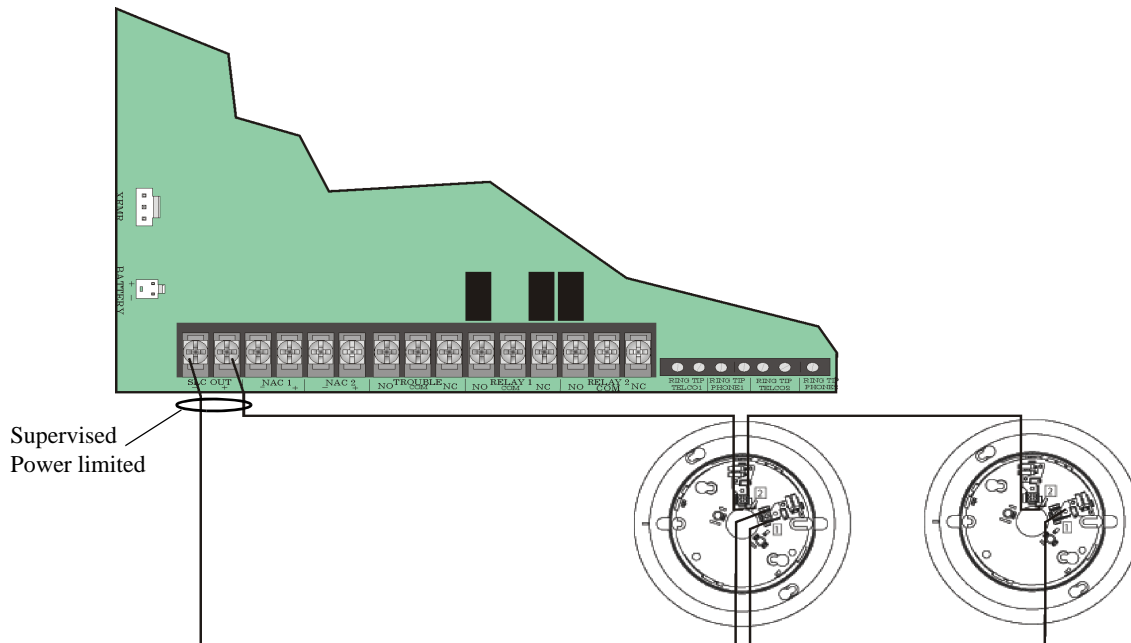


Figure 5-3 Heat and Smoke Detector Connection to the Panel.

5.5 Addressing HFS SLC Devices

All HFS devices are addressed using the two rotary dials that appear on the device board. Use the *ONES* rotary dial to set the ones place in a one or two digit number, and use the *TENS* rotary dial to set the tens place in a two digit number.

Example 1: To select device address 35, turn the *ONES* rotary dial to **5** and the *TENS* rotary dial to **3** as shown in Figure 5-4.

Example 2: To select device address 105, turn the *ONES* rotary dial to **5** and the *TENS* rotary dial to **10** as show in Figure 5-4.

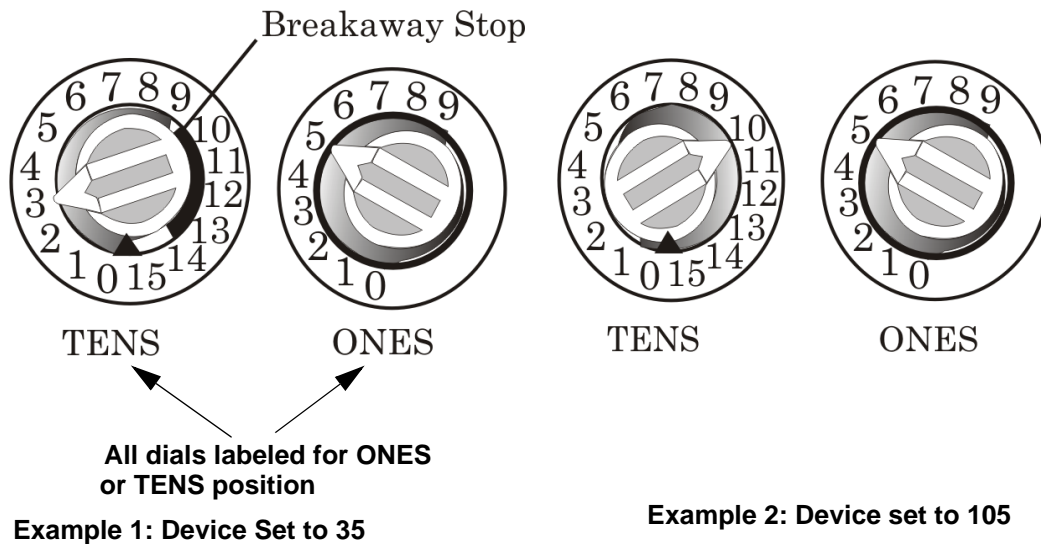


Figure 5-4 HFS SLC Device Addressing Using Rotary Dials

Section 6

Programming

This section of the manual describes how to change the control panel programming options from the built-in web page of the control panel. All options described in this section are edited via the panel's built in web page

Important!

Before any customized programming is done, JumpStart should be run first. After JumpStart is run, thoroughly test the system. The reason the system should be tested after JumpStart is because JumpStart automatically programs the system, searching for and configuring all SLC devices it finds. JumpStart allows you to confirm the integrity of the installation prior to performing any custom programming. After determining that the hardware is properly installed, custom programming can be performed. Refer to Section 6.

6.1 UL 864 Programming Requirements

Table 6-1 Standards in Requirements for Control Units and Accessories

| NOTICE TO USERS, INSTALLERS, AUTHORITIES HAVING JURISDICTION, AND OTHER INVOLVED PARTIES: This product incorporates field programmable software. In order for the product to comply with the requirements in the Standard for Control Units and Accessories for Fire Alarm Systems, UL 864, certain programming features or options must be limited to specific values or not used at all as indicated below. | | | | |
|--|----------------------|---------------------------|-------------------|------------------------------|
| Programming Option | Menu Item | Permitted in UL 864 (Y/N) | Possible Settings | Settings Permitted in UL 864 |
| System Options | Low AC Report Delay | Yes | 0–30 hours | 1–3 |
| Zone Options | Supervisory | Yes | Latching/Non | Latching |
| Zone Options | Waterflow | Yes | Latching/Non | Latching |
| System Options | Alarm Verification | Yes | 1-250 seconds | 60-250 seconds |
| Dialer Phone line Programming option | Line Monitor Enabled | Yes | Y/N | Y* |

*Only needs to be enabled if using the DACT.

6.2 Control Panel Programming

The IFP-25 is an addressable control panel that has the characteristics of a 5 zone conventional fire alarm control panel.

6.3 Default Control Panel Configuration.

The panel ships from the factory in a defaulted configuration that may allow the installer to use the panel without doing any custom programming.

6.3.1 Default Mapping of SLC Inputs to Outputs

The panel mapping configuration for the IFP-25 is fixed with regards to SLC addresses, zone assignments and output points. The relationship between input points and output points follows the rules defined in 6.3.2 below. For input points, the SLC address determines the zone assignment and alarm characteristics. For output points, the SLC address determines the output function for the point.

6.3.2 Mapping of SLC Inputs to Outputs.

Table 6-2 Input Points

| INPUT POINTS | | | | | | |
|--------------|---|-------------|-----|--------------|------------|--------------------|
| Zone | Input Point Types | Function | Qty | Start SLC ID | End SLC ID | Description |
| Zone 1 | HFS-P, HFS-PT, HFS-D, HFS-T, IDP-Pull-SA, IDP-Pull-DA, HFS-MM | Alarm | 15 | 1 | 15 | Alarm Zone 1 |
| | | Supervisory | 5 | 16 | 20 | Supervisory Zone 1 |
| Zone 2 | HFS-P, HFS-PT, HFS-D, HFS-T, IDP-Pull-SA, IDP-Pull-DA, HFS-MM | Alarm | 15 | 21 | 35 | Alarm Zone 2 |
| | | Supervisory | 5 | 36 | 40 | Supervisory Zone 2 |
| Zone 3 | HFS-P, HFS-PT, HFS-D, HFS-T, IDP-Pull-SA, IDP-Pull-DA, HFS-MM | Alarm | 15 | 41 | 55 | Alarm Zone 3 |
| | | Supervisory | 5 | 56 | 60 | Supervisory Zone 3 |
| Zone 4 | HFS-P, HFS-PT, HFS-D, HFS-T, IDP-Pull-SA, IDP-Pull-DA, HFS-MM | Alarm | 15 | 61 | 75 | Alarm Zone 4 |
| | | Supervisory | 5 | 76 | 80 | Supervisory Zone 4 |
| Zone 5 | HFS-P, HFS-PT, HFS-D, HFS-T, IDP-Pull-SA, IDP-Pull-DA, HFS-MM | Alarm | 15 | 81 | 95 | Alarm Zone 5 |
| | | Supervisory | 5 | 96 | 100 | Supervisory Zone 5 |

Table 6-3 Output Points

| OUTPUT POINTS | | | | | | |
|---------------|-------------------|--|-----|--------------|------------|----------------------|
| Group | Output Point Type | | Qty | Start SLC ID | End SLC ID | Output Activates For |
| OPG 1 | HFS-MR | | 2 | 111 | 112 | Zone 1 Alarm |
| OPG 2 | HFS-MR | | 2 | 113 | 114 | Zone 2 Alarm |
| OPG 3 | HFS-MR | | 2 | 115 | 116 | Zone 3 Alarm |
| OPG 4 | HFS-MR | | 2 | 117 | 118 | Zone 4 Alarm |
| OPG 5 | HFS-MR | | 2 | 119 | 120 | Zone 5 Alarm |
| OPG 6 | HFS-MR | | 2 | 121 | 122 | Zone 1 Supervisory |
| OPG 7 | HFS-MR | | 2 | 123 | 124 | Zone 2 Supervisory |
| OPG 8 | HFS-MR | | 2 | 125 | 126 | Zone 3 Supervisory |
| OPG 9 | HFS-MR | | 2 | 127 | 128 | Zone 4 Supervisory |
| OPG 10 | HFS-MR | | 2 | 129 | 130 | Zone 5 Supervisory |
| OPG 11 | HFS-MR | | 2 | 131 | 132 | Zone 1 Trouble |
| OPG 12 | HFS-MR | | 2 | 133 | 134 | Zone 2 Trouble |
| OPG 13 | HFS-MR | | 2 | 135 | 136 | Zone 3 Trouble |
| OPG 14 | HFS-MR | | 2 | 137 | 138 | Zone 4 Trouble |
| OPG 15 | HFS-MR | | 2 | 139 | 140 | Zone 5 Trouble |
| OPG 16 | HFS-MR | | 2 | 141 | 142 | General Alarm |
| OPG 17 | HFS-MR | | 2 | 143 | 144 | General Supervisory |
| OPG 18 | HFS-MR | | 2 | 145 | 146 | General Zone Trouble |
| OPG 19 | HFS-MR | | 2 | 147 | 148 | General Trouble |
| OPG 20 | HFS-MR | | 2 | 149 | 150 | Alarm Silenced |
| OPG 21 | HFS-MR | | 2 | 151 | 152 | Trouble Silenced |
| OPG 22 | HFS-MR | | 2 | 153 | 154 | AC Loss |
| OPG 23 | HFS-MR | | 2 | 155 | 156 | Resettable Aux Relay |
| OPG 24 | HFS-MR | | 2 | 157 | 158 | Aux Door Holder |

Table 6-2 shows that any input SLC device with an address set within the range 1-15 will be assigned to zone 1 as an alarm input type. An SLC output relay point assigned to address 111 or 112 will activate for an alarm in zone 1.

6.3.3 Default Mapping for the 2 built-in Notification Circuits.

There are 2 built-in notification circuits (NAC 1 and NAC 2). They are both defaulted to activate when any of the 5 zones are in alarm. When active, NAC 1 and NAC 2 will sound the System Sensor synchronization pattern. To change the behavior of the default mapping of these circuits refer to Section 6.4.

6.3.4 Maximum SLC address point count

The IFP-25 control panel supports a maximum of 25 SLC points to be used within the 159 point address range. The points can be all inputs, all outputs or any combination of inputs and output points. When more than 25 SLC devices are added to the control panel, any excess points will indicate a trouble and not be recognized by the panel.

6.3.5 Installer Code

The installer code is factory programmed as 123456. The installer code is required to learn and remember which SLC devices are connected to the panel. The installer code can be changed when a PC is used to modify the default programming options.

6.3.6 Jump Start Auto Learn Process

Once the physical installation of SLC devices is finished, the panel will need to learn which SLC devices are present. To have the panel learn and remember which SLC devices are connected to the panel, press and hold the “JumpStart” key, followed by the installer code after PIN is displayed at the 7 segment display. During jump start, the panel will briefly light up all LEDs and then display “SLC Prg” on the 7 segment display. When complete the 7 segment display will be off and programming is complete.

If changes are required that affect address settings for the SLC devices, device types or number of SLC devices installed you will need to repeat jump start to re-learn which devices are supposed to be present on the system. There is no limit to how often you can run jump start. Each time you run this process it starts fresh and does not remember previously installed devices that are no longer present.

6.4 Modifying Panel Programming using a PC

6.4.1 Connecting the panel to a PC

Modifications to the default panel programming can only be done using the embedded web server of the control panel. There are two ways to connect to the panel for the purpose of programming. It can be connected through a DHCP (Dynamic Host Configuration Protocol) router or it can also be plugged in using a Standard CAT5e Ethernet cable without a router. Both methods of connecting the panel to the PC are for local connection only.

By default, the panel is configured to search for a DHCP server. If there is a DHCP server present, the panel receives the IP configuration offered by the DHCP server and displays the IP address on the seven segment display.

If the panel is connected to a PC without a router, it assigns itself a default class B IP address of the format 169.254.X.X. Each panel will have a unique IP address and it will also be displayed on the 7 segment display. When direct connected, it will normally take about 40 seconds to display the IP address. The panel displays “IP” while the IP address is being determined during this 40 second search period.

A PC with the Windows operating system may take up to 1 minute to fallback to the APIPA (Automatic Private IP Addressing) which enables the PC to communicate to the panel. Whether using either the PC direct connect or the PC connected to the panel via DHCP router, you are ready to view and edit the panel programming options once the panel shows the IP address on the seven segment display.

The embedded web page programming tool is accessed by typing in the panel IP address in a web browser. MS Internet explorer 6 and Mozilla Firefox 3.0.5 are the only two web browsers tested and recommended.

6.5 Panel Programming Options

All customized programming options for the IFP-25 control panel are described in this section and are available to be edited using the embedded web server of the control panel.

6.5.1 System Options

6.5.1.1 Synchronized Strobes Active When Horns Silenced

The default configuration for this option is No. If set to Yes, strobes will remain on when horns are silenced until a panel reset is issued.

6.5.1.2 Silence/Reset Inhibit Enabled

The default configuration for this option is NO. If set to Yes, Pressing either Reset or Silence Buttons will be ignored for the duration of the delay (set to 30 seconds). The inhibit feature delay is only active for the first alarm/supervisory signal.

6.5.1.3 Water Flow Delay

The water flow delay is a debounce time that is generally used to help reduce false alarms during brief periods of water pressure fluctuation in a water riser. The default setting is 1 second which is the minimum debounce time. You can set the water flow delay within the range 1-90 seconds.

6.5.1.4 Installer Code (User ID)

This is the password used to lock the list of SLC devices found during the jump start auto learn process. It is defaulted to 123456 and can be changed to any 4 to 8 digit number.

6.5.1.5 Alarm Verification Time

Alarm verification is an optional false alarm prevention feature for smoke detectors that verifies an alarm condition by resetting the smoke detector. The alarm verification time can be set within the range of 1-250 seconds. For U.L. 864 installations this option must be greater than 59 seconds. The default setting is 60 seconds.

6.5.1.6 Auto Test

Enter the hour/minutes (in 24 hour format) that you desire the control panel to send the automatic test report.

6.5.1.7 Low AC Report Delay

This option determines the number of delay hours before a loss of AC is reported to the central station. It is defaulted to 3 hours and must be within the range 0-30 hours. For U.L. 864 installation this option must be set within the range 1-3 hours.

6.5.1.8 Walk Test Reporting

The default configuration for this option is No. If set to Yes, the panel generates a TEST report to the central station when the walk test begins. During a walk test, the panel's normal fire alarm function is completely disabled, placing the panel in a local trouble condition. All zones respond as 1-Count zones (respond when a single detector is in alarm) during a walk test. Each alarm initiated during the walk test will be reported.

6.5.1.9 Walk Test duration

Enter the amount of time, in minutes, for the walk test duration. When the programmed amount of time expires, the Walk Test will end automatically.

6.5.1.10 Walk Test NAC Timeout

Enter the amount of time, in seconds, for the walk test NAC active duration. During a walk test alarm activation, the NACs will automatically deactivate after the programmed amount of time expires.

6.5.1.11 Clock Source

The panel's AC line frequency is selectable for 60 Hz, 50 Hz, or Internal Clock Source. AC frequency feature dictates how the control panel will calculate time based on the AC line frequency used in the installation site. The "Internal Clock" option can be used in areas where the AC line frequency is not dependable and you want the panel to calculate time from the internal crystal. The internal crystal is not as accurate as the AC power source. The panel defaults to the 60 HZ selection.

6.5.1.12 Auto Daylight Savings Time

Select this feature to "Yes" if you want the panel to automatically adjust the clock to track with daylight savings time.

6.5.2 Zone Programming

6.5.2.1 SLC Addresses Within Each Zone

Each zone has 15 alarm SLC addresses and 5 supervisory SLC addresses assigned to it as described in table 6.1. For each SLC address within a zone, the SLC device type choices are Unused, Detector, Manual Pull Switch, Latching Water Flow Switch or Non-Latching Water Flow Switch. The default setting is that all points are unused.

6.5.2.2 Zone Silenceable

When an alarm occurs within a zone, there is a programming option that allows the outputs to be silenceable or not. If you want the SILENCE key to be able to silence outputs triggered by active alarms within the zone select YES for this option. The default setting is Yes.

6.5.2.3 Zone Type

A zone can be either a one count zone or an alarm verification zone. The default setting is one count. A one count zone has an immediate alarm when a single detector goes into alarm.

Alarm verification is an optional false alarm prevention feature for smoke detectors that verifies an alarm condition by resetting the smoke detector. If the alarm condition still exists by the time the reset cycle has completed, the detector will go into alarm. If the detector is no longer in alarm, the initial alarm is ignored. The alarm verification sequence for a detector does not occur if the zone is already in alarm.

6.5.3 Output Point Programming

For each output SLC address you can select that a device is present or unused. The default setting for all output points is unused.

6.5.4 Notification Appliance Circuit (NAC) Programming

6.5.4.1 Circuit Function

The two notification circuits are both defaulted to activate the System Sensor synchronization pattern when any of the five zones are in alarm. You can define each of the notification circuits to be either a conventional notification circuit or an auxiliary power type circuit.

6.5.4.2 Conventional Notification Circuit Mapping

When defined as a conventional notification circuit, the circuit can be configured to activate for any combination of zone alarms and/or supervisories. Select all the categories you wish to have the circuit activate under.

Conventional Notification Circuit Cadence Pattern

When a conventional notification circuit activates, it can be configured to produce one of six output patterns.

1. Constant On - 24V DC power
2. ANSI - ANSI temporal pattern
3. AMSECO Sync - Strobe synchronization for AMSECO appliances
4. Gentex Sync - Strobe synchronization for Gentex appliances
5. System Sensor Sync - Strobe synchronization for System Sensor appliances
6. Wheelock Sync - Strobe synchronization for Wheelock appliances

Auxiliary Power Options

Each of the notification circuits can be configured as an auxiliary power circuit in one of three options.

1. Constant - Always on, 24V DC power.
2. Door Holder - 24V DC when in standby, Off if any alarm device activates, or loss of AC power.
3. Resettable - 24V DC except for 30 seconds off during panel reset.

6.5.5 Relay Programming Options

The two on board relays of the control panel can be selected to activate for general alarm, general supervisory, resettable auxiliary power or door holder power. Relay 1 is defaulted to activate for general supervisory. Relay 2 is defaulted to activate for general alarm.

6.5.5.1 General System Relay Silence Option

This option defaults to silenceable. This option controls the silencing behavior for Relay 1, Relay 2 and the general output relays at SLC addresses 141 through 148.

6.5.6 Dialer Phone Line Programming Options

The programming options below are available for each of the two phone lines.

6.5.6.1 Line Prefix

This option allows the insertion of digits, delays and special tone characters to be dialed before the phone number stored in the account option is dialed. The default setting is to not have any prefix.

6.5.6.2 Dial Tone Detection

The default configuration for this option is “Enabled”. If set to “Disabled”, the dialer will not check for the presence of dial tone on the associated phone line prior to making a call.

6.5.6.3 Line Monitoring Enabled (Y/N)

This option is used to enable phone line voltage supervision. It defaults to No.

6.5.6.4 Dialing Option

The dialer can use touch tone or pulse dialing when calling the central station. The options for dialing are touch tone only, dial pulse only or alternating touch tone/dial pulse when multiple attempts are used to connect with the central station. The default setting is touch tone only.

6.5.6.5 Pulse Dialing Format

There are two duty cycle options for the pulse dialing. US format is 60/40. European format is 66/34. The default setting is the US format.

6.5.7 Dialer Account programming Options

Up to two accounts can be used for reporting events to the central station. A typical reason to use multiple reporting accounts might be to have one account for reporting alarms and a different account for reporting supervisories and troubles. The programming options for each account are described below.

6.5.7.1 Account Number

Up to six digits allowed for SIA formats or up to four digits for contact ID format. Default account numbers are blank.

6.5.7.2 Phone Number

Enter the phone number to call the central station. Default setting is blank.

The following special characters are available:

Table 6-4: Special Dialing Characters

| | |
|---|--|
| # | Pound (or number) key on the telephone |
| * | Star key on the telephone |
| , | Comma (character for 2-second pause) |

6.5.7.3 Reporting Format

Choose SIA8 (up to 8 events per call), SIA20 (up to 20 events per call) or contact ID reporting format. Default setting is contact ID.

6.5.7.4 Reporting Filters

Selecting the Must option forces the event type to be reported to the account even if it was already reported to another account. Selecting the Yes option will insure that the event type gets to at least one account. Selecting the No option means that the event type will not be reported to this account. The default setting is No.

Selecting No for all report filters in both accounts effectively disables the dialer.

Section 7

System Operation

The operation of the IFP-25 control panel is similar to a conventional 5 zone fire alarm control panel. System status and control is segmented into zones even though the panel supports addressable SLC devices for input and output functions.

Note: ULC version of the panel has a built in Alarm Reset and Alarm Silence inhibit of 30 seconds

7.1 System Reset

To reset the system press the RESET key once. All LEDs will light while the system is being reset. Alarms and Supervisories that were latched will be reset to their normal state. Outputs that had been activated by any Alarms and Supervisories will be deactivated.

7.2 Lamp Test

For Lamp test in accordance with ULC-527-99, see IFP-25 Basic Operating Instructions.

7.3 System Silence

To Silence the PZT and all silenceable outputs that are active, press the SILENCE key once. Any silenceable trouble, supervisory or alarm that is silenced will automatically unsilence if left silenced for 24 hours or if a new trouble, supervisory or alarm event occurs.

7.4 Acknowledge

Use the ACK key to acknowledge alarm, supervisory and trouble events

7.5 Viewing Active Alarm Points

When one or more SLC points within a zone are in alarm, the alarm LED for that zone will blink and outputs will activate that are mapped to alarms within the zone. To display the SLC address of an input point that is in alarm, press the ALARM ID key once and use the PREV (previous) or NEXT key to scroll through the alarm points. All points that are in alarm spanning all zones on the control panel will be displayed when using the scroll keys.

7.6 Viewing Active Supervisory Points

When one or more SLC points within a zone are in supervisory alarm, the supervisory LED for that zone will blink and outputs will activate that are mapped to supervisories within the zone. To display the SLC address of an input point that is in supervisory, press the SUPERVS ID key once and use the PREV (previous) or NEXT key to scroll through the supervisory points. All points that are in supervisory spanning all zones on the control panel will be displayed when using the scroll keys.

7.7 Viewing Active Trouble Points

When one or more SLC points within a zone are in trouble, the trouble LED for that zone will blink and outputs will activate that are mapped to troubles within the zone. To display the SLC address of an input point that is in trouble, press the TROUBLE ID key once and use the PREV (previous) or NEXT key to scroll through the trouble points. All addressable points that are in trouble throughout the control panel will be displayed when using the scroll keys.

Note: If there are any system level troubles active, the LED corresponding to the system level trouble will blink also. However, system level troubles are not displayed on the 7 segment display after using the TROUBLE ID key and the PREV or NEXT to scroll addressable troubles. Only point troubles are displayed.

7.8 Walk Test

Walk test is enabled by holding the WALK TEST key until the PZT stops. This takes about 5 seconds. Once in walk test the 7 segment display will show that the walk test is active. During walk test, inputs can be activated and the outputs that are mapped to the input will be activated for 3 seconds. The input will automatically be reset when the outputs are deactivated.

The exit walk test, hold the WALK TEST key until the PZT stops. The panel is now in normal standby mode.

7.9 Fire Drill

A fire drill is activated by holding the DRILL key until the 7 segment display shows drl on. All outputs will be active. To stop the fire drill, press the RESET key. If the reset key is not pressed within 10 minutes, the fire drill will automatically reset.

7.10 Zone Disable Feature

To disable a zone, press the disable zone key that corresponds to the zone number you wish to disable. When a zone is disabled all alarm events that occur while the zone is disabled will be ignored. Zones that are disabled will be in trouble. The PZT will sound the trouble cadence. The trouble LED for the specific zone along with the general trouble LED will blink indicating that the zone is in trouble. If the silence key is pressed after a zone is disabled, the trouble LEDs will be continuously on and the PZT will silence.

To enable a zone which had been previously disabled, press the disable zone key that corresponds to the zone number you wish to enable. Each pressing of the zone disable key will toggle the disable/enable state for the zone.

Note: Followed by the Installers code in ULC installations. See Basic Operating Instructions.

7.11 Disabling Notification Circuits

There are 2 notification circuits on the IFP-25 control panel (NAC1 and NAC2). You can disable them individually by pressing the NAC1 or NAC2 disable keys. A disabled notification circuit will cause a trouble on the circuit. The PZT will sound the trouble cadence. The trouble LED for the circuit along with the general trouble LED will blink indicating trouble. If the silence key is pressed, the trouble LEDs will be continuously on and the PZT will silence.

Pressing the NAC disable key when the circuit is already disabled will enable the circuit. Each pressing of a NAC disable key will toggle the disable/enable state for the circuit.

7.12 Loss of AC power

When AC is present and above the brown out threshold, the AC LED will be on continuously. When AC power is off or below the brown out threshold, the AC LED will blink. The GENERAL TROUBLE LED will blink also. The trouble relay will activate for loss of AC once the reporting delay for reporting loss of AC power has been reached. The default setting for this delay is 3 hours. If the silence key is pressed, the trouble LEDs will be continuously on and the PZT will silence.

7.13 Remote Connection Feature (ULC Installations Only)

To disconnect the communication paths to the Central Station and/or remote stations, press the walk test button and the Acknowledge button at the same time. The PZT on the panel will sound and the General Trouble LED will be flashing. This feature will remain active until you press the Walk Test and Acknowledge buttons again.

7.14 Low Battery

The battery voltage is continuously monitored during normal standby. When the battery is not present or the voltage is too low, the control panel will indicate a low battery trouble. Both the LOW BATTERY and GENERAL TROUBLE LED will blink when there is a low battery condition. The PZT will also sound the trouble cadence. If the silence key is pressed, the trouble LEDs will be continuously on and the PZT will silence.

7.15 Ground Fault

The control panel monitors the SLC and notification circuits for wiring shorts to earth ground. If any wire from these circuits is connected to earth ground the control panel will indicate a ground fault by blinking both the GROUND FAULT and GENERAL TROUBLE LED. The PZT will also sound the trouble cadence. If the silence key is pressed, the trouble LEDs will be continuously on and the PZT will silence.

7.16 Phone Line Monitoring

The control panel monitors the phone line voltage at TELCO1 and TELCO2 when line monitoring is enabled (see programming section 6.5.6.3). When line monitoring is enabled and there is not sufficient voltage at TELCO1 or TELCO2, the 7 segment display will indicate “Ln1” and/or “Ln2” for phone line 1 and phone line 2 troubles.

7.17 Reporting Account Monitoring

When the control panel is configured to use the dialer, the reporting accounts will indicate trouble if the panel has failed to communicate to the central station after 10 attempts. Account 1 trouble is indicated on the 7 segment display as “AC1”. Account 2 trouble is indicated on the 7 segment display as “AC2”. Once the communication path to the central station is restored, the account troubles will self restore.

7.18 SLC Fault

In the event that the SLC circuit is shorted or drawing too much current, the panel will indicate this by displaying “SLC err” on the 7 segment display. Remove the fault and the trouble will self restore.

7.19 Dialer Error

In the event that the dialer microprocessor is unable to communicate with the main microprocessor the panel will indicate this by displaying “dlr” on the 7 segment display. If this trouble is ever displayed, the panel needs to be returned to the factory for repair.

Section 8

Reporting

This section lists receivers that are compatible with this control panel, and the reporting codes sent by the control panel for SIA and Contact ID formats.

8.1 Receivers Compatible with the Control Panel

Table 8-1 shows receivers compatible with the control panel.

Table 8-1: Receivers Compatible with the Control Panel

| Manufacturer | Model | Format |
|-----------------|--------------------------------|--------------------|
| Silent Knight | Model 9800 | SIA and Contact ID |
| | Model 9000 (SIA formats) | SIA |
| Ademco | Model MX8000 (Contact ID) | Contact ID |
| Sur-Gard | SG-MLR2-DG (V. 1.64 or higher) | SIA and Contact ID |
| Osborne Hoffman | Quickalert | SIA and Contact ID |

8.2 Reporting Formats Dialer Outputs

| Event Description | Event Family | Event Class (System, Zone, or Point) | SIA Reporting Format | | | Contact ID Reporting Format | | | |
|---|---|--------------------------------------|----------------------|----------------|--------------------|-----------------------------|------------|---------|-----------|
| | | | Module ID # (if any) | SIA Event Code | Parameter (if any) | Qualifier | Event Code | Group # | Contact # |
| System Events | System events are reported when either “Report by Point” or “Report by Zone” is selected. | | | | | | | | |
| AC power restore | Trouble | System Event | | AR | | 3 | 301 | 00 | 000 |
| AC power lost | Trouble | System Event | | AT | | 1 | 301 | 00 | 000 |
| Short circuit removed from SLC communication loop | Trouble | System Event | | ER | 33 | 3 | 332 | 00 | Exp. ID |
| Short circuit detected on SLC communication loop | Trouble | System Event | | ET | 33 | 1 | 332 | 00 | Exp. ID |
| Fire drill has begun | Test | System Event | | FI | | 1 | 604 | 00 | 000 |
| Fire drill ended | Test | System Event | | FK | | 3 | 604 | 00 | 000 |
| Panel date has been changed | Trouble | System Event | | JD | | 1 | 625 | 00 | 000 |
| Panel time has been changed | Trouble | System Event | | JT | | 1 | 625 | 00 | 000 |

Model IFP-25 Installation and Operation Manual

| | | | | | | | | | |
|--|--|--------------|--|----|--------|---|-----|--------|---------|
| Local programming begin | Trouble | System Event | | LB | | 1 | 627 | 00 | 000 |
| Phone line 1 trouble restore | Trouble | System Event | | LR | 1 | 3 | 351 | 00 | 001 |
| Phone line 2 trouble restore | Trouble | System Event | | LR | 2 | 3 | 352 | 00 | 002 |
| Phone line 1 trouble detected | Trouble | System Event | | LT | 1 | 1 | 351 | 00 | 001 |
| Phone line 2 trouble detected | Trouble | System Event | | LT | 2 | 1 | 352 | 00 | 002 |
| Periodic test event – normal | Test | System Event | | RP | | 1 | 602 | 00 | 000 |
| Periodic test event – off normal | Test | System Event | | RY | | 1 | 608 | 00 | 000 |
| Initial power up | Trouble | System Event | | RR | | 1 | 305 | 00 | 000 |
| Unable to report to an account | Trouble | System Event | | RT | Acct # | 1 | 354 | Acct # | Acct # |
| User has initiated dialer test | Test | System Event | | RX | | 1 | 601 | 00 | |
| Walk test end | Test | System Event | | TE | | 3 | 607 | 00 | 000 |
| Walk test begin | Test | System Event | | TS | | 1 | 607 | 00 | 000 |
| Auto dialer test communication trouble | Trouble | System Event | | YC | Line # | 1 | 350 | 00 | Line # |
| Report to an account successful | Trouble | System Event | | YK | Acct # | 3 | 354 | Acct # | Acct # |
| Auto dialer test communication trouble restore | Trouble | System Event | | YK | Line # | 3 | 350 | 00 | Line # |
| Ground fault condition detected | Trouble | System Event | | YP | 34 | 1 | 310 | 00 | Exp. ID |
| Ground fault condition restore | Trouble | System Event | | YQ | 34 | 3 | 310 | 00 | Exp. ID |
| Battery voltage restore | Trouble | System Event | | YR | 34 | 3 | 302 | 00 | Exp. ID |
| Battery voltage low | Trouble | System Event | | YT | 34 | 1 | 302 | 00 | Exp. ID |
| Zone Events | Zone events are reported only when “Report by Zone” is selected. | | | | | | | | |
| Manual pull switch alarm | Alarm | Zone Event | | FA | Zone | 1 | 115 | 00 | Zone |
| Detector alarm | Alarm | Zone Event | | FA | Zone | 1 | 110 | 00 | Zone |
| Manual pull switch alarm restore | Restore | Zone Event | | FH | Zone | 3 | 115 | 00 | Zone |
| Detector alarm restore | Restore | Zone Event | | FH | Zone | 3 | 110 | 00 | Zone |
| Manual pull switch trouble restore | Trouble | Zone Event | | FJ | Zone | 3 | 373 | 00 | Zone |
| Detector trouble restore | Trouble | Zone Event | | FJ | Zone | 3 | 373 | 00 | Zone |
| Auxiliary power trouble restore | Trouble | Zone Event | | FJ | 0000 | 3 | 320 | 00 | 000 |

| | | | | | | | | | |
|---|---------|------------|--|----|------------------|---|-----|----|---------|
| Notification output trouble restore | Trouble | Zone Event | | FJ | 1000+ Group # | 3 | 320 | 00 | Group # |
| Manual pull switch trouble | Trouble | Zone Event | | FT | Zone | 1 | 373 | 00 | Zone |
| Detector trouble | Trouble | Zone Event | | FT | Zone | 1 | 373 | 00 | Zone |
| Auxiliary power trouble | Trouble | Zone Event | | FT | 0000 | 1 | 320 | 00 | 000 |
| Notification trouble | Trouble | Zone Event | | FT | 1000+ Group# | 1 | 320 | 00 | Group # |
| User initiated a system reset | Reset | Zone Event | | OR | | 1 | 401 | 00 | 000 |
| Water flow switch alarm | Alarm | Zone Event | | SA | Zone | 1 | 113 | 00 | Zone |
| Water flow switch alarm restore | Restore | Zone Event | | SH | Zone | 3 | 113 | 00 | Zone |
| Water flow switch trouble restore | Trouble | Zone Event | | SJ | Zone | 3 | 373 | 00 | Zone |
| Supervisory/Tamper switch trouble restore | Trouble | Zone Event | | SJ | Zone | 3 | 373 | 00 | Zone |
| Supervisory condition restore | Trouble | Zone Event | | SR | Zone | 3 | 203 | 00 | Zone |
| Supervisory condition | Trouble | Zone Event | | SS | Zone | 1 | 203 | 00 | Zone |
| Water flow switch trouble | Trouble | Zone Event | | ST | Zone | 1 | 373 | 00 | Zone |
| Supervisory/Tamper switch trouble | Trouble | Zone Event | | ST | Zone | 1 | 373 | 00 | Zone |

Appendix A

Compatible Devices

A.1 Notification Appliances

For proper operation, you must use polarized devices with a Model 7628 4.7k ohm EOL resistor on each loop. All supervised notification appliances used with the control panel must be polarized.

Note: Not all devices can use the Sync feature, be sure to check Table A-1 to ensure the device you have chosen will work with this feature. This control is UL listed for panel wide Synchronization.

Table A-1 below lists notification appliances compatible with the fire alarm control panel. Appliances which can be synchronized indicate the type of sync available in the columns marked Audio and/or Visual.

Table A-1 Compatible Notification Appliances

| Manufacturer | Model | Audio | Visual | Type |
|--------------|----------------|-------|--------|---------------|
| AMSECO | SH24W-153075 | ✓ | ✓ | Horn/Strobe |
| | SAD24-153075 | | ✓ | Strobe |
| | SAD24-75110 | | ✓ | Strobe |
| | SL24W-75110 | | ✓ | Strobe |
| | SL24C-3075110 | | ✓ | Strobe |
| | SLB24-75 | | ✓ | Strobe |
| | RSD24-153075 | | ✓ | Strobe |
| | RSD24-75110 | | ✓ | Strobe |
| | SH24W-75110 | ✓ | ✓ | Horn/Strobe |
| | SH24W-3075110 | ✓ | ✓ | Horn/Strobe |
| | SHB24-75 | ✓ | ✓ | Horn/Strobe |
| | SCM24W-153075 | ✓ | | Chimes/Strobe |
| | SCM24W-75110 | ✓ | | Chimes/Strobe |
| | SCM24C-3075110 | ✓ | | Chimes/Strobe |
| | SCM24C-177 | ✓ | | Chimes/Strobe |
| | H24W | ✓ | | Horn |
| | H24R | ✓ | | Horn |

| Manufacturer | Model | Audio | Visual | Type |
|--------------|--------------|-------|--------|--|
| Gentex | GEC-24-15 | ✓ | ✓ | Horn/Strobes |
| | GEC-24-30 | ✓ | ✓ | Horn/Strobes |
| | GEC-24-60 | ✓ | ✓ | Horn/Strobes |
| | GEC-24-75 | ✓ | ✓ | Horn/Strobes |
| | GEC-24-177 | ✓ | ✓ | Horn/Strobes |
| | GEC-24-110 | ✓ | ✓ | Horn/Strobe |
| | GEC-24-15/75 | ✓ | ✓ | Horn/Strobe |
| | GX91 | ✓ | | MiniHorn Steady Tone |
| | GX93 | ✓ | | MiniHorn Temporal Tone |
| | HG124 | | | Horn |
| | HS24-15 | ✓ | ✓ | Horn/Strobe |
| | HS24-30 | ✓ | ✓ | Horn/Strobe |
| | HS24-60 | ✓ | ✓ | Horn/Strobe |
| | HS24-75 | ✓ | ✓ | Horn/Strobe |
| | HS24-110 | ✓ | ✓ | Horn/Strobe |
| | HS24-1575 | ✓ | ✓ | Horn/Strobe |
| | GCC24 | ✓ | ✓ | Multi Candella Horn/Strobe Ceiling Mount |
| | GCCR24 | ✓ | ✓ | Multi Candella Horn/Strobe Ceiling Mount |
| | GCS24 | | ✓ | Multi Candella Strobe Ceiling Mount |
| | GCSR24 | | ✓ | Multi Candella Strobe Ceiling Mount |
| | GEGR-24 | ✓ | ✓ | Multi Candella Horn/Strobe |
| | GES24-15 | | ✓ | Strobes |
| | GES24-30 | | ✓ | Strobes |
| | GES24-60 | | ✓ | Strobes |
| | GES24-75 | | ✓ | Strobes |
| | GES24-110 | | ✓ | Strobes |
| | GES24-15/75 | | ✓ | Strobes |
| | GES24-177 | | ✓ | Strobes |
| | GES3-24 | | ✓ | Multi Candella Strobe |
| | GESR-24 | | ✓ | Multi Candella Strobe |
| | GEH-24 | ✓ | | Horn |
| | ST24-30 | | ✓ | Strobe |
| | ST24-60 | | ✓ | Strobe |
| | ST24-75 | | ✓ | Strobe |
| | ST24-110 | | ✓ | Strobe |
| | ST24-1575 | | ✓ | Strobe |
| | WGEC24-75W | ✓ | ✓ | Weatherproof Horn/Strobe |
| | WGES24-75W | | ✓ | Weatherproof Strobe |
| | WGMS-24-X | | | Horn/Strobe |

| Manufacturer | Model | Audio | Visual | Type |
|---------------|---------|-------|--------|---------------------------------|
| System Sensor | CHR | ✓ | | Chime |
| | CHW | ✓ | | Chime |
| | CHSR | ✓ | ✓ | 2-Wire Chime/Strobe |
| | CHSW | ✓ | ✓ | 2-Wire Chime/Strobe |
| | HR | ✓ | ✓ | Horn |
| | HW | | ✓ | Horn |
| | HRK | | ✓ | Horn |
| | P2R | ✓ | ✓ | 2-Wire Horn/Strobe |
| | P2R-P | ✓ | ✓ | 2-Wire Horn/Strobe |
| | PC2R | ✓ | ✓ | 2-Wire Horn/Strobe |
| | PC2R-P | ✓ | ✓ | 2-Wire Horn/Strobe |
| | P2RH | ✓ | ✓ | 2-Wire Horn/Strobe High Candela |
| | P2RH-P | ✓ | ✓ | 2-Wire Horn/Strobe High Candela |
| | PC2RH | ✓ | ✓ | 2-Wire Horn/Strobe High Candela |
| | PC2RH-P | ✓ | ✓ | 2-Wire Horn/Strobe High Candela |
| | P2W | ✓ | ✓ | 2-Wire Horn/Strobe |
| | P2W-P | ✓ | ✓ | 2-Wire Horn/Strobe |
| | PC2W | ✓ | ✓ | 2-Wire Horn/Strobe |
| | PC2W-P | ✓ | ✓ | 2-Wire Horn/Strobe |
| | P2WH | ✓ | ✓ | 2-Wire Horn/Strobe High Candela |
| | P2WH-P | ✓ | ✓ | 2-Wire Horn/Strobe High Candela |
| | PC2WH | ✓ | ✓ | 2-Wire Horn/Strobe High Candela |
| | PC2WH-P | ✓ | ✓ | 2-Wire Horn/Strobe High Candela |
| | P2RK | ✓ | ✓ | 2-Wire Horn/Strobe |
| | PC2RK | ✓ | ✓ | 2-Wire Horn/Strobe |
| | P2RHK | ✓ | ✓ | 2-Wire Horn/Strobe High Candela |
| | PC2RHK | ✓ | ✓ | 2-Wire Horn/Strobe High Candela |
| | P4R | ✓ | ✓ | 4-Wire Horn/Strobe |
| | PC4R | ✓ | ✓ | 4-Wire Horn/Strobe |
| | P4RH | ✓ | ✓ | 4-Wire Horn/Strobe High Candela |
| | P4W | ✓ | ✓ | 4-Wire Horn/Strobe |

| Manufacturer | Model | Audio | Visual | Type |
|---------------|--------|-------|--------|---------------------------------|
| System Sensor | PC4W | ✓ | ✓ | 4-Wire Horn/Strobe |
| | P4WH | ✓ | ✓ | 4-Wire Horn/Strobe High Candela |
| | PC4WH | ✓ | ✓ | 4-Wire Horn/Strobe High Candela |
| | P4RK | ✓ | ✓ | 4-Wire Horn/Strobe |
| | PC4RK | ✓ | ✓ | 4-Wire Horn/Strobe |
| | P4RHK | ✓ | ✓ | 4-Wire Horn/Strobe High Candela |
| | PC4RHK | ✓ | ✓ | 4-Wire Horn/Strobe High Candela |
| | PC4RH | ✓ | ✓ | 4-Wire Horn/Strobe High Candela |
| | SR | | ✓ | Strobe |
| | SR-P | | ✓ | Strobe |
| | SCR | | ✓ | Strobe |
| | SCR-P | | ✓ | Strobe |
| | SRH | | ✓ | Strobe High Candela |
| | SRH-P | | ✓ | Strobe High Candela |
| | SCRH | | ✓ | Strobe High Candela |
| | SCRH-P | | ✓ | Strobe High Candela |
| | SW | | ✓ | Strobe |
| | SW-P | | ✓ | Strobe |
| | SCW | | ✓ | Strobe |
| | SCW-P | | ✓ | Strobe |
| | SWH | | ✓ | Strobe High Candela |
| | SWH-P | | ✓ | Strobe High Candela |
| | SCWH | | ✓ | Strobe High Candela |
| | SCWH-P | | ✓ | Strobe High Candela |
| | SRK | | ✓ | Strobe |
| | SCRK | | ✓ | Strobe |
| | SRHK | | ✓ | Strobe High Candela |
| | SCRHK | | ✓ | Strobe High Candela |

| Manufacturer | Model | Audio | Visual | Type |
|--------------|-----------------|-------|--------|--------------------------|
| Wheelock | AH-12 | ✓ | | Horn |
| | AH-24 | ✓ | | Horn |
| | AH-12WP | ✓ | | Horn Weatherproof |
| | AH-24WP | ✓ | | Horn Weatherproof |
| | AMT-241575W | ✓ | ✓ | Multi-Tone Horn Strobe |
| | AMT-24MCW | | ✓ | Multi-Tone Horn Strobe |
| | AMT-241575W-NYC | ✓ | ✓ | Multi-Tone Horn Strobe |
| | AMT-12/24 | ✓ | | Multi-tone Horn |
| | AMT-12/24 NYC | ✓ | | Multi-tone Horn |
| | AS-121575W | | ✓ | Horn/Strobe |
| | NH-12/24 | ✓ | | Horn |
| | AS-241575W | ✓ | ✓ | Horn/Strobe |
| | AS-24MCC | ✓ | ✓ | Horn/Strobe |
| | AS-24MCCH | ✓ | ✓ | Horn/Strobe |
| | AS-24MCW | ✓ | ✓ | Horn/Strobe |
| | AS-24MCWH | ✓ | ✓ | Horn/Strobe |
| | ASWP-2475W | ✓ | ✓ | Horn/Strobe Weatherproof |
| | ASWP-2475C | ✓ | ✓ | Horn/Strobe Weatherproof |
| | ASWP-24MCWH | ✓ | ✓ | Horn/Strobe |
| | ASWP-24MCCH | ✓ | ✓ | Horn/Strobe |
| | CH-70 | ✓ | | Chime |
| | CH-90 | ✓ | | Chime |
| | CH70-241575W | | ✓ | Chime/Strobe |
| | CH70-24MCW | | ✓ | Chime/Strobe |
| | CH70-24MCWH | | ✓ | Chime/Strobe |
| | CH90-24MCC | | ✓ | Chime/Strobe |

| Manufacturer | Model | Audio | Visual | Type |
|-------------------|--------------|-------|--------|-----------------------|
| Wheelock Con't | CH90-24MCCH | | ✓ | Chime/Strobe |
| | HS-24 | ✓ | | Horn |
| | HS4-241575W | ✓ | ✓ | Horn/Strobe |
| | HS4-24MCW | ✓ | ✓ | Horn/Strobe |
| | HS4-24MCWH | ✓ | ✓ | Horn/Strobe |
| | HS4-24MCC | ✓ | ✓ | Horn/Strobe |
| | MIZ-24S | ✓ | ✓ | Mini Horn Strobe |
| | MT-121575W | | ✓ | MultitoneHorn Strobe |
| | MT-241575W | ✓ | ✓ | Multitone Horn Strobe |
| | MT-24MCW | | ✓ | Multitone Horn Strobe |
| | MTWP-2475W | | ✓ | Multitone Horn Strobe |
| | MTWP-2475C | | ✓ | Multitone Horn Strobe |
| | MTG-121575W | ✓ | ✓ | Multitone Horn Strobe |
| | MTR-121575W | ✓ | ✓ | Multitone Horn Strobe |
| | MTWPA-2475W | ✓ | ✓ | Multitone Horn Strobe |
| | MTWPB-2475W | ✓ | ✓ | Multitone Horn Strobe |
| | MTWPG-2475W | ✓ | ✓ | Multitone Horn Strobe |
| | MTWPR-2475W | ✓ | ✓ | Multitone Horn Strobe |
| | MTWPA-24MCCH | ✓ | ✓ | Multitone Horn Strobe |
| | ZNH | ✓ | | Horn |
| | NS-121575W | ✓ | ✓ | Horn/Strobe |
| | NS-241575W | ✓ | ✓ | Horn/Strobe |
| | NS-24MCW | ✓ | ✓ | Horn/Strobe |
| | NS-24MCC | ✓ | ✓ | Horn/Strobe |
| | NS-24MCCH | ✓ | ✓ | Horn/Strobe |
| | ZNS-MCW | ✓ | ✓ | Horn/Strobe |
| | ZNS-MCWH | ✓ | ✓ | Horn/Strobe |
| | ZNS-24MCC | ✓ | ✓ | Horn/Strobe |
| | ZNS-24MCCH | ✓ | ✓ | Horn/Strobe |
| | RSS-121575W | | ✓ | Strobe |
| | RSS-241575W | | ✓ | Strobe |
| | RSS-24MCC | | ✓ | Strobe |
| | RSS-24MCCR | | ✓ | Strobe |
| | RSS-24MCCH | | ✓ | Strobe |
| | RSS-24MCCHR | | ✓ | Strobe |
| | RSS-24MCW | | ✓ | Strobe |
| | RSS-24MCWH | | ✓ | Strobe |
| | RSSP-121575W | | ✓ | Strobe |
| | RSSP-241575W | | ✓ | Strobe |
| | RSSR-2415W | | ✓ | Strobe |
| | RSSR-2415C | | ✓ | Strobe |

| Manufacturer | Model | Audio | Visual | Type |
|-------------------|---------------|-------|--------|-----------------------|
| Wheelock con't | RSSR-2475W | | ✓ | Strobe |
| | RSSR-2475C | | ✓ | Strobe |
| | RSSR-24110C | | ✓ | Strobe |
| | RSSA-24110W | | ✓ | Strobe |
| | RSSB-24110W | | ✓ | Strobe |
| | RSSG-24110W | | ✓ | Strobe |
| | RSSR-24110W | | ✓ | Strobe |
| | RSSA-24MCC | | ✓ | Multi-Cd Strobe |
| | RSSB-24MCC | | ✓ | Multi-Cd Strobe |
| | RSSG-24MCC | | ✓ | Multi-Cd Strobe |
| | RSSR-24MCC | | ✓ | Multi-Cd Strobe |
| | RSSWPA-2475W | | ✓ | Strobe Weatherproof |
| | RSSWPA-24MCCH | | ✓ | Strobe Weatherproof |
| | RSSWPG-24MCCH | | ✓ | Strobe Weatherproof |
| | RSSWPR-24MCCH | | ✓ | Strobe Weatherproof |
| | RSSWP-2475W | | ✓ | Strobe Weatherproof |
| | RSSWP-2475C | | ✓ | Strobe Weatherproof |
| | RSSWP-24MCWH | | ✓ | Strobe Weatherproof |
| | ZRS-MCWH | | ✓ | Strobe |
| | ZRS-24MCC | | ✓ | Strobe |
| | ZRS-24MCCH | | ✓ | Strobe |
| | MB-G6-24 | | | Motor Bell |
| | MB-G10-24 | | | Motor Bell |
| | MB-G6-12 | | | Motor Bell |
| | MB-G10-12 | | | Motor Bell |
| | MIZ-24-R | | | Mini-Horn |
| | MT-12/24-R | ✓ | ✓ | Multitone Horn |
| | MT4-12/24 | ✓ | ✓ | Multitone Horn |
| | ZRS-MCW | | ✓ | Strobe |
| | MTWPR-24MCCH | ✓ | ✓ | Multitone Horn Strobe |
| | NH-12/24R | ✓ | | Horn |
| | HSR | | ✓ | Horn/Strobe |
| | HSW | | ✓ | Horn/Strobe |
| | STR | | ✓ | Strobe |
| | STW | | ✓ | Strobe |
| | HNR | | ✓ | Horn |
| HNW | | ✓ | Horn | |

A.2 Four-Wire Smoke Detectors/Devices (UL Listed)

Table A-2 Compatible Four-Wire Smoke Detectors

| Smoke Detector/Base | Detector Type | Max Standby Current (mA) | Alarm Current (mA) |
|--|--|--------------------------|--------------------|
| Fenwal CPD-7021 (w/70-201000-005 Base) | Ionization | 0.10 | * |
| Fenwal PSD-7125 | Photoelectric | 0.10 | * |
| Fenwal PSD-7126 (w/70-201000-005 Base) | Photoelectric | 0.10 | * |
| Fire-Lite BLP-12-4W | Base | * | * |
| Gentex 824 | Photoelectric | 0.50 | * |
| Gentex 824T | Photoelectric | 0.50 | * |
| Gentex 824CP | Photoelectric | 0.50 | * |
| Gentex 824CPT | Photoelectric | 0.50 | * |
| Hochiki HSC-4R | Base | * | * |
| Hochiki SPB-24 | Projected Beam | 0.25 | * |
| System Sensor B112LP | Base | 0.12 | 36 |
| System Sensor B114LP | Base | * | * |
| System Sensor B404B | Base | * | * |
| System Sensor DH100ACDC | Photoelectric | 0.15 | 0.70 |
| System Sensor DH100ACDCLP | Photoelectric | 0.15 | 0.70 |
| System Sensor DH100ACDCLWP | Photoelectric | 0.15 | 0.70 |
| System Sensor DH400ACDCI | Ionization Duct | 25 | 95 |
| System Sensor DH400ACDCP | Photoelectric Duct | 25 | 95 |
| System Sensor 1112/24/D | Ionization | 0.05 | 50 |
| System Sensor 1424 | Ionization | 0.10 | 41 |
| System Sensor 1451 (w/B402B Base) | Ionization | 0.10 | 39 |
| System Sensor 2112/24ATR | Photoelectric | 0.50 | 60/70 |
| System Sensor 2112/24AITR | Photoelectric | 0.50 | 60/70 |
| System Sensor 2112/24/D | Photoelectric | 0.05 | 50 |
| System Sensor 2112/24R | Photoelectric | 0.50 | 60/70 |
| System Sensor 2112/24TR | Photoelectric | 0.50 | 60/70 |
| System Sensor 2112/24T/D | Photoelectric w/135° Thermal | 0.05 | 50 |
| System Sensor 2112/24TSRB | Photoelectric w/135° Thermal Supervisory Relay | 15 | 45 |
| System Sensor 2312/24TB | Photoelectric | 0.12 | 50 |
| System Sensor 2412 (12 volt) | Photoelectric | 0.12 | 77 |
| System Sensor 2412AT (12 volt) | Photoelectric | 0.12 | 58 |
| System Sensor 2412TH (12 volt) | Photoelectric | 0.12 | 77 |
| System Sensor 2424 | Photoelectric | 0.10 | 41 |
| System Sensor 2424TH | Photoelectric | 0.10 | 41 |
| System Sensor 2451 | Photoelectric | 0.10 | 39 |
| System Sensor 2451TH (with/B402B Base) | Photoelectric | 0.10 | 39 |
| System Sensor 2W-MOD | Loop Test/Maintenance Mod. | 30 | 50 |
| System Sensor 4W-B (12/24 Volt) | Photoelectric I ³ | .05 | 23 |
| System Sensor 4WT-B (12/24 Volt) | Photoelectric I ³ w/Therm | .05 | 23 |
| System Sensor 4WTA-B (12/24 Volt) | I ³ Photo w/ Therm/Sounder | .05 | 35 |

| Smoke Detector/Base | Detector Type | Max Standby Current (mA) | Alarm Current (mA) |
|---|--|---------------------------------|---------------------------|
| System Sensor 4WTR-B (12/24 Volt) | I ³ Photo w/ Therm/Relay | .05 | 35 |
| System Sensor 4WTAR-B (12/24 Volt) | I ³ Photo w/ Therm/Sounder/Relay | .05 | 50 |
| System Sensor 4WITAR-B (12/24 Volt) | I ³ Photo w/ Isolated Therm/Sounder/Relay | .05 | 50 |
| System Sensor 2W-MOD2 | I ³ Loop Test/Maintenance Mod. | .05 | * |
| System Sensor RRS-MOD | I ³ Reversing Relay/Sync Module | .05 | * |
| System Sensor 6424 | Projected Beam | 10 | 28.4 |
| System Sensor Beam 1224(S) | Projected Beam | 17 | 38.5 |
| Notes: * Contact manufacturer for current draws | | | |

Note: Must use model 160150 end of line supervision module.

A.3 Door Holders (UL Listed)

Table A-3 list door holders that are compatible with the fire control panel.

Table A-3 Compatible Door Holders

| MANUFACTURER | MODEL | TYPE | Current (mA) |
|----------------|--------|---------------------|--------------|
| Edwards | DH150A | Floor Mount | 96 |
| Edwards | DH154A | Flush Mount | 96 |
| Edwards | DH158A | Surface Mount | 96 |
| Rixon Firemark | FM-980 | Floor Mount, single | 68 |
| Rixon Firemark | FM-996 | Surface Wiring | 68 |
| Rixon Firemark | FM-998 | Concealed Wiring | 68 |

A.4 Relays (UL Listed)

Table A-4 list relays compatible with the fire control panel.

Table A-4 Compatible Relays

| MANUFACTURER | MODEL | Current (mA) |
|------------------------------|----------|--------------|
| Air Products & Controls, LTD | MR-101/C | 15 |
| | MR-201/C | 35 |
| | PAM-1 | 15 |
| | PAM-2 | 15 |
| | PAM-SD | 15 |
| System Sensor | A77-716B | 20 |
| | PR-1 | 15 |
| | PR-2 | 30 |
| | PR-3 | 30 |
| | EOLR-1 | 30 |
| | R-10T | 23 |
| | R-14T | 23 |
| | R-20T | 40 |
| | R-24T | 40 |
| | R-10E | 23 |
| | R-14E | 23 |
| | R-20E | 40 |
| | R-24E | 40 |

Silent Knight Fire Product Warranty and Return Policy

General Terms and Conditions

- All new fire products manufactured by Silent Knight have a limited warranty period of 36 months from the date of manufacture against defects in materials and workmanship. See limited warranty statement for details.
- This limited warranty does not apply to those products that are damaged due to misuse, abuse, negligence, exposure to adverse environmental conditions, or have been modified in any manner whatsoever.

Repair and RA Procedure

- All products that are returned to Silent Knight for credit or repair require a RMA (Return Authorization) number. Call Silent Knight Customer Service at 800-328-0103 or 203-484-7161 between 8:00 A.M. and 5:00 P.M. EST, Monday through Friday to obtain a return authorization number.
- Silent Knight Technical Support is available at 800-446-6444 between 8:00 A.M. and 5:00 P.M. CST, Monday through Friday.
- All returns for credit are subject to inspection and testing at the factory before actual determination is made to allow credit.
- RMA number must be prominently displayed on the outside of the shipping box. See return address example under Advanced Replacement Policy.
- Include a packing slip that has the RMA number, a content list, and a detailed description of the problem should be included with each return.
- All products returned to Silent Knight must be sent freight pre-paid. After product is processed, Silent Knight will pay for shipping product back to customer via UPS ground.
- Return the Silent Knight product circuit board only. Products that are returned in cabinets will be charged an additional \$50 to cover the extra shipping and handling costs over board only returns. **Do not return batteries.** Silent Knight has the authority to determine if a product is repairable. Products that are deemed un-repairable will be returned to the customer.
- Product that is returned that has a board date code more than 36 months from date of manufacture will be repaired and the customer will be assessed the standard Silent Knight repair charge for that model.

Advanced Replacement Policy

- Silent Knight offers an option of advance replacement for fire product printed circuit boards that fail during the first 6 months of the warranty period. These items must be returned with transportation charges prepaid and must be accompanied by a return authorization.
- For advance replacement of a defective board contact your local Silent Knight Distributor or call Silent Knight at 203-484-7161 to obtain a RMA (Return Authorization) number and request advanced replacement,
- A new or refurbished board will be shipped to the customer. The customer will initially be billed for the replacement board but a credit will be issued after the repairable board is received at Silent Knight. All returned products must comply with the guidelines described under “General Terms and Conditions”.
- The defective board must be returned within 30 days of shipment of replacement board for customer to receive credit. No credit will be issued if the returned board was damaged due to misuse or abuse.
- Repairs and returns should be sent to:
Silent Knight / Honeywell
Attn: Repair Department
12 Clintonville Road
Northford, CT 06472
USA

RMA Number: _____

Manufacturer Warranties and Limitation of Liability

Manufacturer Warranties. Subject to the limitations set forth herein, Manufacturer warrants that the Products manufactured by it in its Northford, Connecticut facility and sold by it to its authorized Distributors shall be free, under normal use and service, from defects in material and workmanship for a period of thirty six months (36) months from the date of manufacture (effective Jan. 1, 2009). The Products manufactured and sold by Manufacturer are date stamped at the time of production. Manufacturer does not warrant Products that are not manufactured by it in its Northford, Connecticut facility but assigns to its Distributor, to extent possible, any warranty offered by the manufacturer of such product. This warranty shall be void if a Product is altered, serviced repaired by anyone other than Manufacturer or its authorized Distributors. This warranty shall also be void if there is a failure to maintain the Products and the systems in which they operate in proper working conditions.

MANUFACTURER MAKES NO FURTHER WARRANTIES, AND DISCLAIMS ANY AND ALL OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE PRODUCTS, TRADEMARKS, PROGRAMS AND SERVICES RENDERED BY MANUFACTURER INCLUDING WITHOUT LIMITATION, INFRINGEMENT, TITLE, MERCHANTABILITY, OR FITNESS FOR ANY PARTICULAR PURPOSE. MANUFACTURER SHALL NOT BE LIABLE FOR ANY PERSONAL INJURY OR DEATH WHICH MAY ARISE IN THE COURSE OF, OR AS A RESULT OF, PERSONAL, COMMERCIAL OR INDUSTRIAL USES OF ITS PRODUCTS.

This document constitutes the only warranty made by Manufacturer with respect to its products and replaces all previous warranties and is the only warranty made by Manufacturer. No increase or alteration, written or verbal, of the obligation of this warranty is authorized. Manufacturer does not represent that its products will prevent any loss by fire or otherwise.

Warranty Claims. Manufacturer shall replace or repair, at Manufacturer's discretion, each part returned by its authorized Distributor and acknowledged by Manufacturer to be defective, provided that such part shall have been returned to Manufacturer with all charges prepaid and the authorized Distributor has completed Manufacturer's Return Material Authorization form. The replacement part shall come from Manufacturer's stock and may be new or refurbished. THE FOREGOING IS DISTRIBUTOR'S SOLE AND EXCLUSIVE REMEDY IN THE EVENT OF A WARRANTY CLAIM.




















**SILENT
KNIGHT**

by Honeywell

Model IFP-25 Basic Operating Instructions

These Instructions must be framed and displayed next to the IFP-25 panel in accordance with NFPA 72 fire code for Local Protected Fire Alarm Systems. Test the system in accordance to NFPA 72. Refer to Installation Manual P/N 56393 for more information regarding this control panel.

| Operation | Task to Perform |
|--|---|
| Silence Alarms and Troubles | Press  . Silence LED will light. |
| Reset Alarms | Press  . |
| Acknowledge Alarms and Troubles | Press  . |
| View Alarms | Zones that are in alarm will have their alarm LED on. To view all points in alarm press Alarm ID followed by  or  button to view the SLC ID for each point. |
| View Supervisories | Zones that are in supervisory will have their supervisory LED on. To view all points in supervisory press Supervs ID followed by  or  button to view the SLC ID for each point. |
| View Troubles | Zones that are in trouble will have their trouble LED on. To view all points in trouble press Trouble ID followed by  or  button to view the SLC ID for each point. |
| Conduct a Fire Drill | 1. Press  to start Fire Drill. 2. Press  to end Fire Drill. |
| Dialer Test | Press  and  key at same time. |
| Lamp Test | Press  and  key at same time. |
| Enable / Disable a Zone or Circuit | Press the corresponding disable key. Press it again to enable the zone or circuit. For ULC, you must enter the Installation code after pressing Zone Enable/Disable. |
| Remote Connection Feature (ULC Installations Only) | Press the  and  at the same time to disconnect the communication paths to the Central Station and/or remote station. The PZT on the panel will sound and the General Trouble LED will be flashing. This will remain active until you press the Walk test and Acknowledge buttons again. |
| For Service call: | |



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by Honeywell

Silent Knight
12 Clintonville Road
Northford, CT 06472-1610
203-484-7161
Fax: 203-484-7118

www.silentknight.com