UNITED FIRE SYSTEMS

STAND PIPE PAC™

MODEL SSS-100-XL

DESIGN, INSTALLATION, COMMISSIONING, OPERATION, AND MAINTENANCE MANUAL

Serial Number _____

Date of Installation _____ **Date of Commissioning** _____

UNITED Fire Systems

Division of UNITED Fire Protection Corporation

1 Mark Road

Kenilworth, NJ 07033

908-688-0300

www.unitedfiresystems.com

Manual Part Number 10-540001-011

Revision 1.00

November 2025

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SAFETY INFORMATION

This manual contains safety information that is important to know and understand. This information is provided for the safety of installers, operators, and users of the UNITED Fire Systems **STANDPIPE-PAC™** equipment. Carefully read, understand, and follow instructions identified by these symbols.

DANGER

The use of the word “DANGER” identifies an immediate hazard with a likelihood of death or serious personal injury if instructions, including recommended precautions, are not followed.

WARNING

The use of the word “WARNING” identifies the presence of hazards or unsafe practices that could result in death, personal injury, or serious property damage if instructions, including recommended precautions, are not followed.

CAUTION

The use of the word “CAUTION” identifies possible hazards or unsafe practices that could result in personal injury or property damage if instructions, including recommended precautions, are not followed.

IMPORTANT

The use of the word “IMPORTANT” identifies special instructions, not related to hazards, that should be followed.

FOREWORD

This manual is written for those who install, operate and maintain UNITED Fire Systems **STANDPIPE-PAC™** standpipe supervisory systems. The manual contains installation, operation, and maintenance information for the system. This manual must be read thoroughly and completely understood before installation and operation of UNITED Fire Systems **STANDPIPE-PAC™** equipment. All appropriate safety standards as determined by local or national laws and regulations should be followed at all times. When handling, installing, or operating this equipment, personnel must employ safe engineering practices and observe all related local regulations, health, and safety procedures, and legal requirements for safety. Ensure that the equipment is depressurized and electrically isolated before carrying out any of the scheduled maintenance instructions specified in this manual.

WARNING

DO NOT install, operate, or maintain unit if damage has occurred during shipping, handling, or use. Contact UNITED Fire Systems immediately. Failure to do so could result in death, personal injury, or serious property damage.

CAUTION

Read all of the safety information in this manual before installing, operating, or maintaining this equipment. Use of the equipment in a manner not specified within this manual may impair the protection provided by this equipment and could result in serious injury or damage. Only competent personnel should perform installation, operation, and maintenance procedures.

IMPORTANT

UNITED Fire Systems assumes no responsibility for the installation, operation, or maintenance of any systems other than those addressed in this manual. The data contained in this manual is for information purposes only. UNITED Fire Systems believes this data to be accurate at the time of publication, but the data is published and presented without any guarantee or warranty whatsoever. UNITED Fire Systems disclaims any liability for any use that may be made of the data and information contained in this manual by any and all parties.

IMPORTANT

The UNITED Fire Systems **STANDPIPE-PAC™** standpipe supervisory system is a vital part of the fire protection of any facility where these units are installed. Life safety and property protection depends on continuing proper operation of the assembly. The owner of the **STANDPIPE-PAC™** is responsible for the condition of the assembly and its continued proper operation. UNITED Fire Systems strongly recommends that all owners of **STANDPIPE-PAC™** systems engage the services of qualified, trained fire protection professionals to design the system containing the assembly, and to install and maintain the assembly.

UNITED Fire Systems **STANDPIPE-PAC™** standpipe supervisory systems are to be installed, operated, and maintained by qualified, trained personnel in accordance with:

- This Installation, Operation, and Maintenance Manual P/N 10-540000-011 Revision 1.00.
- National Fire Protection Association No. 14, "Standard for the Installation of Standpipe and Hose Systems."
- National Fire Protection Association No. 25, "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems."
- National Fire Protection Association No. 70, "National Electrical Code®".

Any questions on the information in this manual should be addressed to:

UNITED Fire Systems, Division of United Fire Protection Corporation
1 Mark Road, Kenilworth, NJ USA 07033
908-688-0300 www.unitedfiresystems.net

LIMITED WARRANTY
STANDPIPE-PAC™

What Does This Warranty Cover?

This warranty covers all manufacturing defects in material and workmanship in your new **STANDPIPE-PAC™.**

How Long Does The Coverage Last?

This warranty lasts for ninety (90) days from the date of shipment to the original purchaser.

What Will UNITED Fire Systems Do?

UNITED Fire Systems will repair, replace, or refund the purchase price of, at its option, any defective **STANDPIPE-PAC™** at no charge.

What Does This Warranty Not Cover?

STANDPIPE-PAC™s that have NOT been commissioned by UNITED Fire Systems or a trained distributor are not covered under this warranty. If you modify, change, or alter your **STANDPIPE-PAC™** without instructions from UNITED Fire Systems, the **STANDPIPE-PAC™** is not covered. If you break tamper seals applied by UNITED Fire Systems, the sealed parts are not covered. Any problem that is caused by abuse, misuse, or an act of God (such as a flood) is not covered. Also, consequential and incidental damages are not recoverable under this warranty. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

How Do You Obtain Service?

In order to be eligible for service under this warranty, your **STANDPIPE-PAC™** must have been commissioned by UNITED Fire Systems or a trained distributor. You must return the warranty registration form within 5 days of installation. If something goes wrong with your **STANDPIPE-PAC™,** contact your trained distributor or:

UNITED Fire Systems, Division of UNITED Fire Protection Corporation
1 Mark Road, Kenilworth, NJ 07033 USA
Phone: 908-688-0300 Fax: 908-481-1131

UNITED Fire Systems will contact you within 24 hours to arrange for evaluation of your **STANDPIPE-PAC™.**

Is This Warranty Transferable?

If the **STANDPIPE-PAC™** is moved from one to another installation during the time period of warranty coverage, the **STANDPIPE-PAC™** must be re-commissioned by UNITED Fire Systems or your trained distributor to be eligible for continuing coverage. You must pay a quoted charge for this re-commissioning.

Is This The Entire Warranty?

This limited warranty is the entire warranty given by UNITED Fire Systems to the purchaser of a new **STANDPIPE-PAC™.** There are no other warranties expressed or implied, beyond those required by law.

How Do State and Federal Laws Apply?

This warranty gives you specific legal rights per Federal law. You may also have other rights which vary from state to state.

1. GENERAL INFORMATION

1.1. System Purpose. The UNITED Fire Systems **STANDPIPE-PAC™ Model SSS-100-XL** Standpipe Supervisory System is a standpipe supervisory system, alarm switch, signal horn, and control unit providing one complete zone of standpipe supervision in compliance with NYC Local Law 64 / NYC BC 3303.8.1. All components are mounted on a sturdy backplate, suitable for hanging at a construction or demolition site.

1.2. NYC Local Law 64 / NYC Building Code 3303.8.1

NYC Local Law 64 / NYC Building Code 3303.8.1 was implemented in response to serious difficulties encountered by the NYC Fire Department when fire standpipes at construction and demolition sites were damaged, rendering the standpipes unsuitable for fire department use. The code requires that all fire standpipes in vacant buildings, buildings undergoing demolition, and required permanent or temporary standpipes in buildings under construction be equipped with a system to pressurize the standpipe at all times, which then would sense the pressure loss if a portion of the standpipe was damaged or completely removed. Detailed requirements for the system are specified in the code. **STANDPIPE-PAC™** has been designed to aid in compliance with the requirements in Section 4 of Local Law 64. IMPORTANT: Section 3 of Local Law 64 requires that an application to install an air pressurized alarm system be filed by a registered design professional, and a permit obtained by a master plumber or licensed master fire protection contractor. A licensed electrician shall obtain all required electrical permits. Install **STANDPIPE-PAC™** after application is made and accepted, and all permits received. To review Local Law 64 / BC 3303.8.1 in its entirety, go to: www.unitedfiresystems.com.

1.3. Functional Description. See Figures 1, 2, 3, and 4. **STANDPIPE-PAC™** consists of the following:

(1) Air compressor with automatic control switch (external). The air compressor compresses atmospheric air for pressurizing the standpipe. The automatic control switch starts/stops the compressor based off the pressure in the compressor's reservoir tank.

(2) Pressure maintenance device (PMD). UNITED Fire Systems Model NAMD-1. A device designed to automatically regulate and maintain the flow of air into a dry pipe network. See **Appendix A** for more information.

(3) Desiccant air dryer (Model XL1 only). The desiccant air dryer dries the compressed air before entry into the standpipe, as required by Local Law 64 / BC 3303.8.1

(4) Refrigerated air dryer (Model XL2 only). The refrigerated air dryer dries and regulates temperature of compressed air before entry into the standpipe.

(5) Supervisory pressure switch. This switch senses when the pressure in the standpipe drops below 7 PSIG, as would happen if a standpipe valve was inadvertently opened, or a portion of the piping was inadvertently removed, or exceeds 23 PSIG, as may happen if the pressure maintenance device's regulator is set incorrectly or has its bypass valve open. This switch sends its signal to the control panel (9). See **Appendix B** for more information.

(6) Pressure gauge. The pressure gauge indicates the approximate pressure in the system in PSIG.

(7) Check valve. The check valve prevents entry of water into the **STANDPIPE-PAC™** when the Fire Department pumps water into the standpipe. This device is required by Local Law 64 / BC 3303.8.1.

(8) Lockable shutoff valve. This valve permits maintenance on the **STANDPIPE-PAC™** without de-pressurizing the entire standpipe. This device is required by Local Law 64 / BC 3303.8.1, and per this law, shall be locked in the OPEN position.

(9) Control panel with power supply, backup battery, silence switch, and automatic dialer. The control unit accepts the signals from the supervisory pressure switch (5) and operates the signal horn (10). The silence switch allows the signal horn (10) to be silenced. The power supply is dedicated to the system as required by Local Law 64 / BC 3303.8.1, and provides for backup battery power for the control unit. This device also provides an automatic dialer for connection of telephone lines for off-site notification. See **Appendix C** for more information.

(10) Signal horn. Audible indicator of abnormal pressure in the standpipe. Additional signal horns may be connected so that signaling may be heard throughout the site.

(11) 120 VAC Connection. A junction box for connection of 120 VAC, 60 Hz, single phase power for the control unit (9).

(12) Outlet. 1/2" NPT pipe (provided by installer) is run from the outlet to a connection point on the standpipe.

(13) Service device. See instructions in this manual for use of this device.

(14) Pressure relief valve. To protect the internal components of the **STANDPIPE-PAC™** from damage, the pressure relief valve automatically opens when pressure exceeds maximum operating pressure. The pull-ring also allows for manual release of pressure.
(15) NEMA enclosure (optional). A tamper-proof, lockable enclosure weather resistant and rated NEMA12 IP66. Appropriate for permanent standpipe installations. (Figure 2)
(16) Manual air release bleed valve for Fire Department use. This device is to be installed near the siamese connection feeding the standpipe. A cap and chain assembly is provided to protect the outlet. An instructional nameplate is also provided. This nameplate is to be securely fastened near the valve. (Figure 3)
(17) Auxiliary condensate drain device. This device permits manual draining of water in the piping near the **STANDPIPE-PAC™** unit, to help prevent water entry into the unit and pipe blockage without removing all air from the standpipe. (Figure 4)

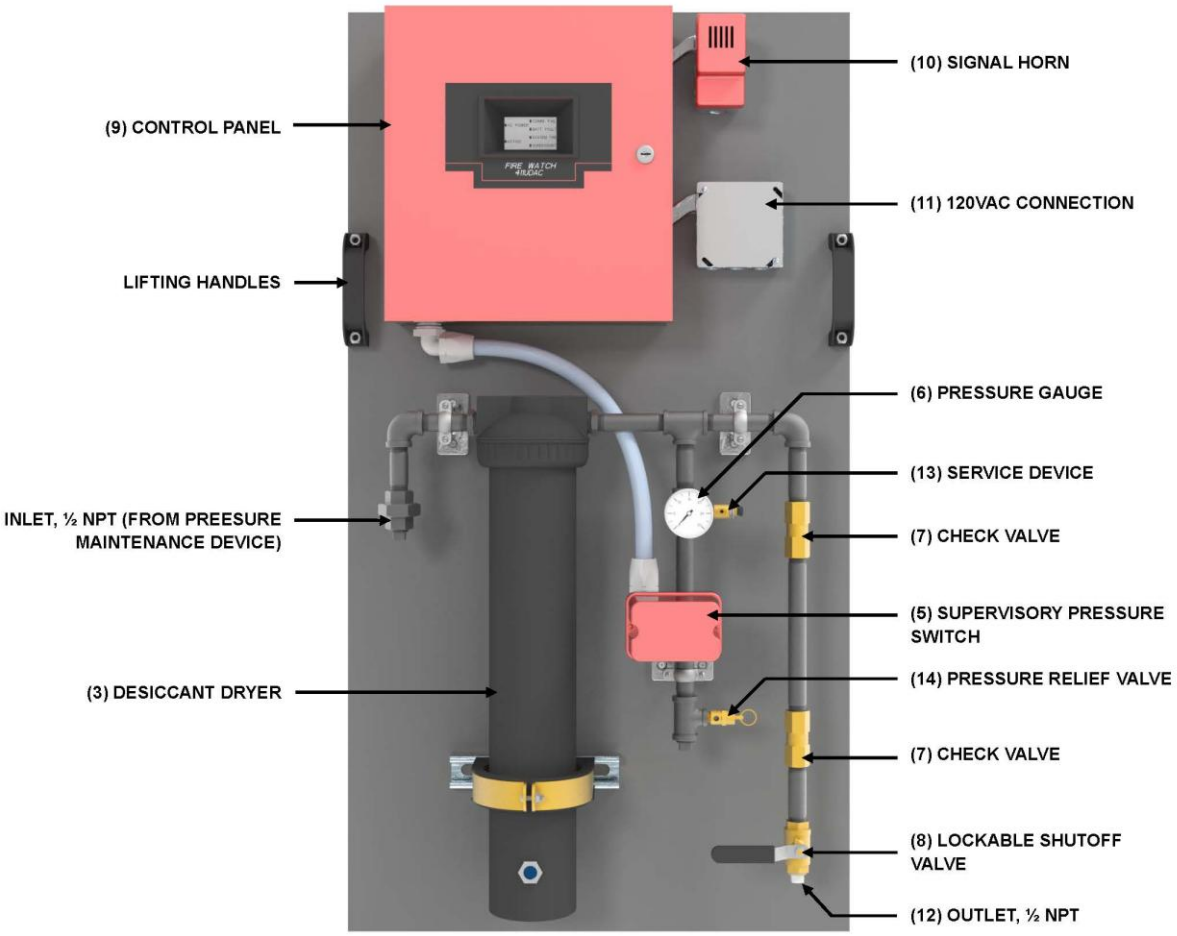

Figure 1 – **STANDPIPE-PAC™** SSS-100-XL1

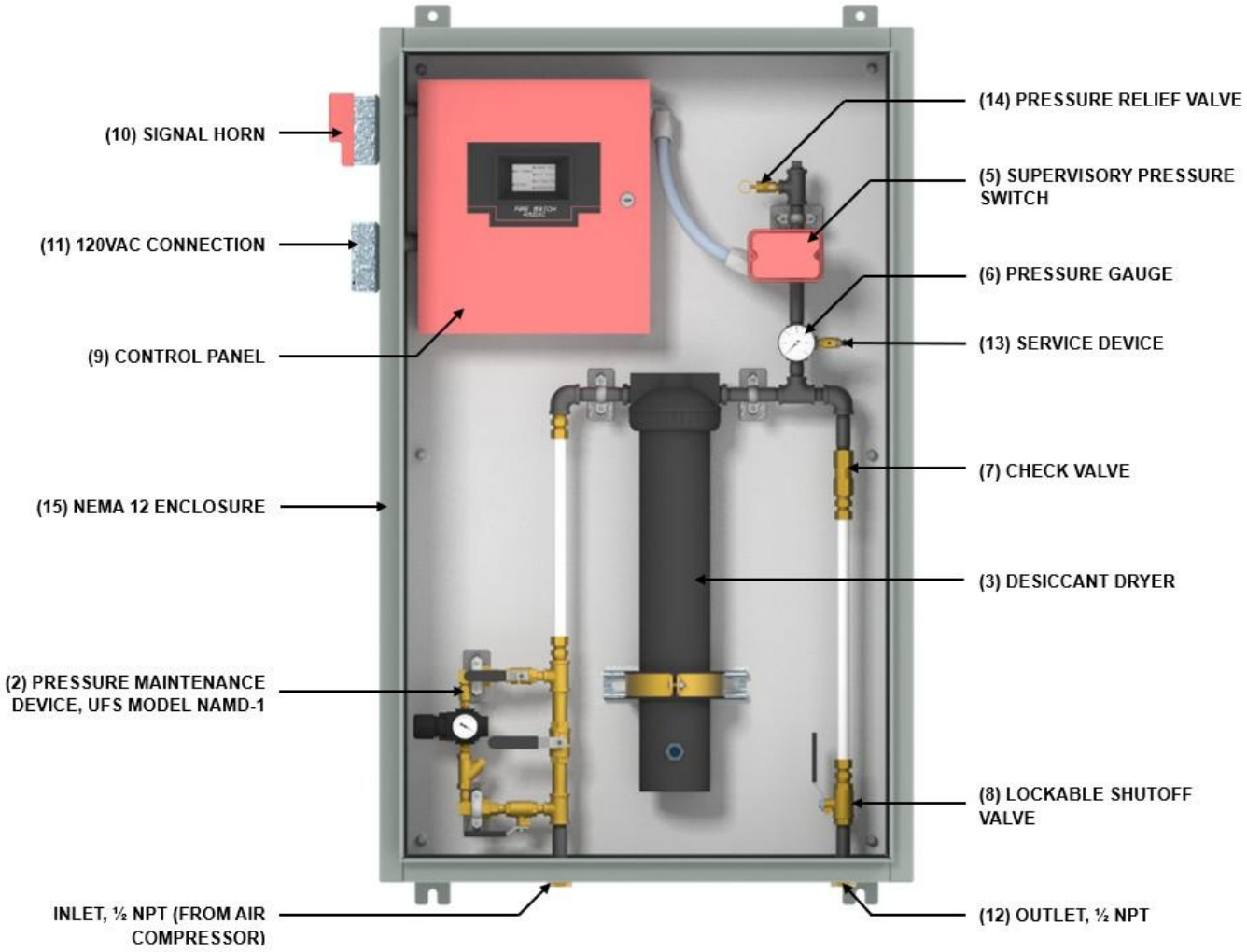

Figure 2 – **STANDPIPE-PAC™** SSS-100-XL1-N

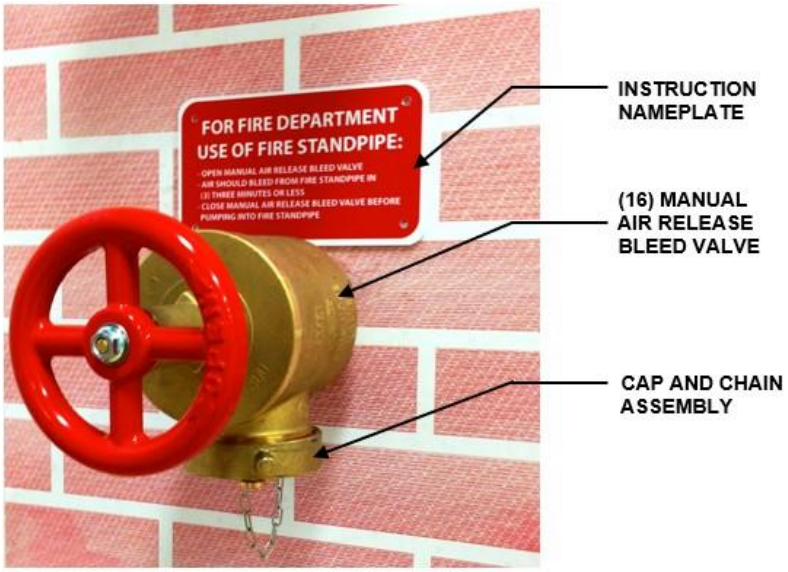

Figure 3 – Manual Air Release Bleed Valve

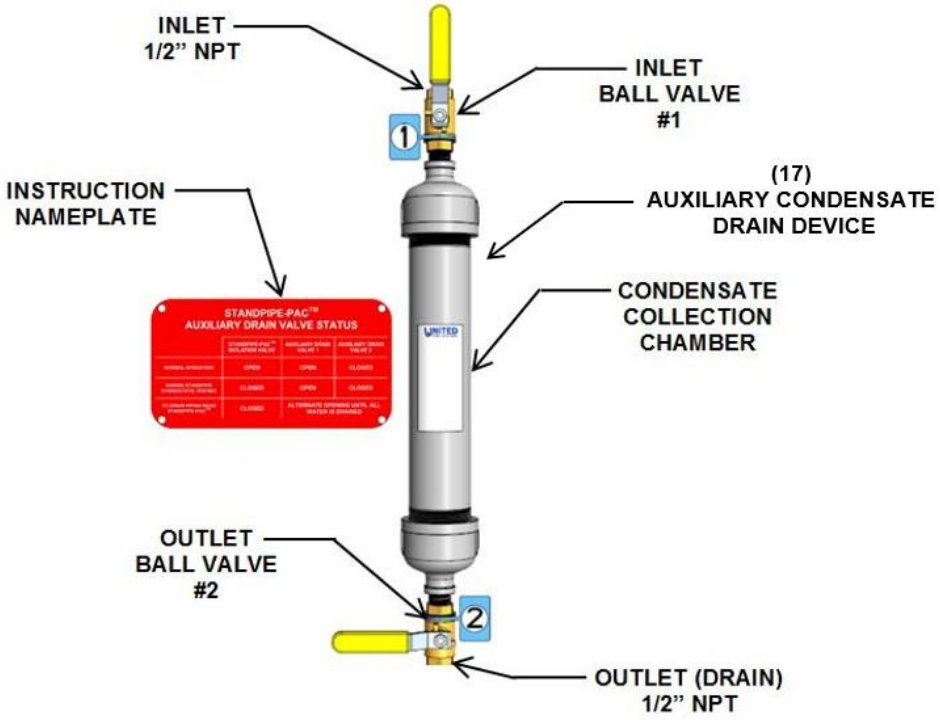

Figure 4 – Auxiliary Condensate Drain Device

2. DESIGN.

The compressor to use with **STANDPIPE-PAC™ Model SSS-100-XL** is determined based on the internal volume of the standpipe to be protected, and the desired fill time. Contact UNITED Fire Systems for compressor sizing.

2.1. Determining Internal Volume of Standpipe. See Table 1. The internal volume of the standpipe (gal) is determined by multiplying the length of each pipe, by size, by the internal volume per foot in gallons.

Nominal Pipe Size	Pipe Length (ft)		Gallons per Foot	Volume (gal)
1-1/2”		X	0.106	
2”		X	0.174	
2-1/2”		X	0.248	
3”		X	0.383	
4”		X	0.660	
6”		X	1.500	
8”		X	2.600	
Other		X		
			TOTAL =	

Table 1 – Determining Internal Volume of Standpipe

2.2. Determining Desired Fill Time. Per Local Law 64 / BC3303.8.1, any impairment lasting 2 hours or more requires shutdown of the construction / demolition site and notification to the NYC Fire Department. The usual criterion is to fill / refill the standpipe in less than 2 hours, with margin for work performed for construction / demolition. NOTE: The NFPA 13 sprinkler system rule of 30 minutes “fast-fill” DOES NOT apply to standpipes.

2.3. Options.

2.3.1. Additional Audible Signals. Additional audible signals can be added to the Notification Appliance Circuit (NAC) of the **STANDPIPE-PAC™** unit to permit hearing the signal throughout the facility. Consult Appendix C of this manual for further information. See Paragraph 3.3.5.5.3 for installation instructions.

IMPORTANT

Signals from the **STANDPIPE-PAC™** unit are NOT fire alarm signals UNITED Fire Systems recommends that all devices connected to the Notifications Appliance Circuit (NAC) of the **STANDPIPE-PAC™** unit be clearly differentiated from any fire alarm signals present in the building.

2.3.2. Off-Site Signaling Via Dialer. The **STANDPIPE-PAC™** control unit is equipped with a built-in dialer for off-site signal notification. See **Appendix C** for proper hookup of telephone lines for this purpose.

2.3.3. Cellular dialer. A dual network cellular supervisory signal communicator. See **Appendix D** for setup and installation.

2.3.4. NEMA Enclosure. A tamper-proof, lockable enclosure weather resistant and rated NEMA12 IP66. Appropriate for permanent standpipe installations.

3. INSTALLATION

3.1. Unpacking. Check shipment of the UNITED Fire Systems **STANDPIPE-PAC™** system for damage. If there is any damage or missing parts, the transportation company's agent should make a notation to the effect on the Bill of Lading. Claims should be settled directly with the transportation company. Verify that all parts were received in the shipment as ordered. Contact the factory immediately if there are any missing parts or discrepancies. The following items should be with the shipment:

- **STANDPIPE-PAC™** unit – Model SSS-100-XL
- Air compressor (external)
- Pressure maintenance device, UNITED Fire Systems Model NAMD-1 (Integrated in NEMA versions)
- Refrigerated dryer (Model XL2 only)
- Manual air release bleed valve – P/N 06-100004-000
- Cap and chain for manual air release bleed valve – P/N 06-100004-001
- Nameplate for manual air release bleed valve – P/N 10-440001-001
- Standby battery (12 VDC 7.5 A-H) for control unit – P/N 03-100005-001
- Design, Installation, Commissioning, Operation, and Maintenance Manual – P/N 10-540001-011.
- Auxiliary condensate drain device kit – P/N 10-220000-100


CAUTION

Understand and follow all safety recommendations when moving heavy pieces of equipment. Equipment may be easily tipped over when moving. Failure to use caution can result in equipment damage and personal injury.

3.2. Location. Due consideration must be given to all of the following considerations when locating the **STANDPIPE-PAC™** unit.

3.2.1. Temperature.


IMPORTANT

The **STANDPIPE-PAC™** assembly is designed for use in areas where the temperature DOES NOT drop below +32°F (0° C). DO NOT install **STANDPIPE-PAC™** units in areas where the temperature can go below +32°F (0° C). Failure to comply can result in unit malfunction and damage which is NOT covered by the warranty.

Ensure that the **STANDPIPE-PAC™** unit is installed in a location that will not drop below +32°F (0° C) at any time. This may be accomplished by:

- Choosing a location that will be supplied with building heat during cold weather, or;
- Providing a space heater in the vicinity of the unit when cold weather is expected.

3.2.2. Engineering Drawings (if available). If a survey was conducted, and engineering drawings prepared, locate all equipment per these drawings.

3.2.3. Proximity. The **STANDPIPE-PAC™** unit should be installed in reasonably close proximity to the standpipe being protected. The most logical location is in the same room as the riser. If necessary, the device may be installed remotely. Documentation and signage should be clear to identify which equipment in remote locations is connected together.

3.2.4. Weight. The unit weighs approximately 60 lb. (120 lb. with NEMA option).

3.2.5. Noise. The **STANDPIPE-PAC™** unit does emit noise when running. Consideration should be given to locating equipment where normal operating noise does not interfere with building operations.

3.2.6. Clearance. Sufficient clearance should be available after installation for maintenance operations to take place. Leave at least (3) feet of clearance for personnel to access equipment for maintenance.

3.3. Installation.

3.3.1. Mounting. See Figures 5 and 6. Mount the **STANDPIPE-PAC™** in the chosen mounting location.

- It is strongly recommended that the unit be mounted on a wall.
- The unit weighs approximately 60 lb. (120 lb. with NEMA option). Choose a wall with construction capable of supporting this weight, with a reasonable safety margin. Consult a structural engineer when necessary to verify suitability of location.
- Use good standard practice and appropriate fasteners.
- The backboard may be drilled as needed for mounting. Do not drill holes too close to corners. Where applicable, NEMA enclosure has mounting tabs (See Figure 6).
- Leave a minimum of 3 feet of clearance in front of unit for personnel to perform maintenance.

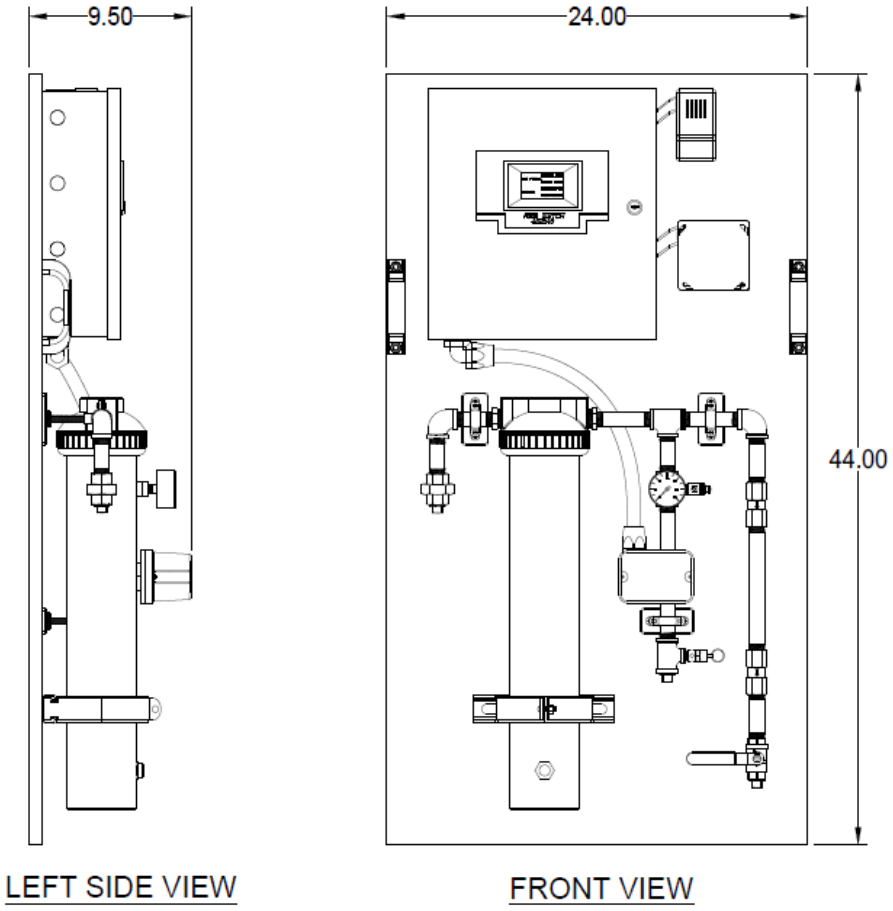

Figure 5 – Dimensions – **STANDPIPE-PAC™** SSS-100-XL1

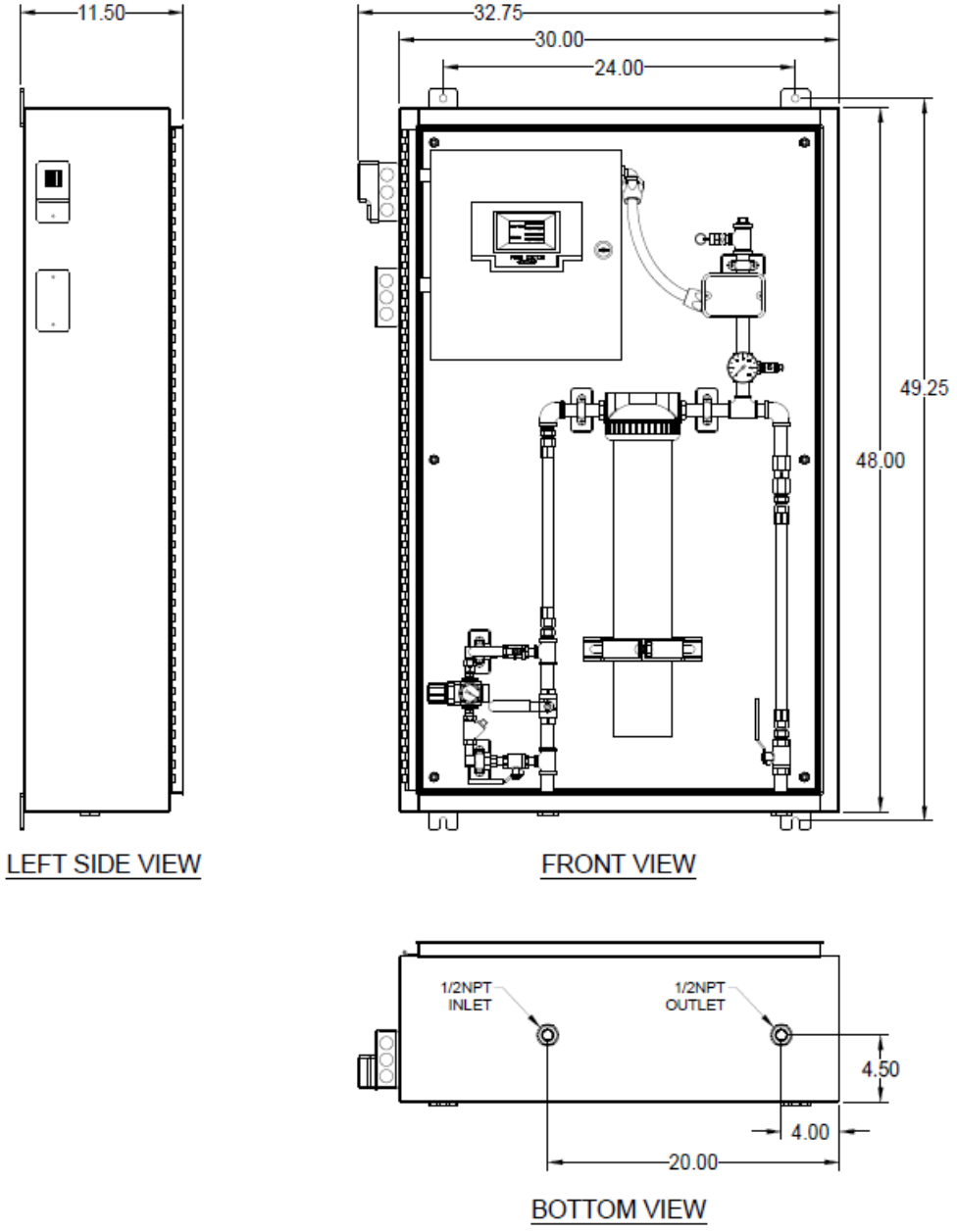

Figure 6 – Dimensions – **STANDPIPE-PAC™** SSS-100-XL1-N

3.3.2. Piping. See Figures 7 and 8. The piping in **BLUE** is to be installed by the **STANDPIPE-PAC™** system installer. Use Sch. 40 black pipe and Class 150 fittings. The tee to connect the **STANDPIPE-PAC™** shall be located after the check valve, and should be located before the drain valve. Connect 1/2" pipe to point labeled OUTLET on **STANDPIPE-PAC™** unit. Ensure that the standpipe is NOT PRESSURIZED prior to cutting in the tee at the installation location.

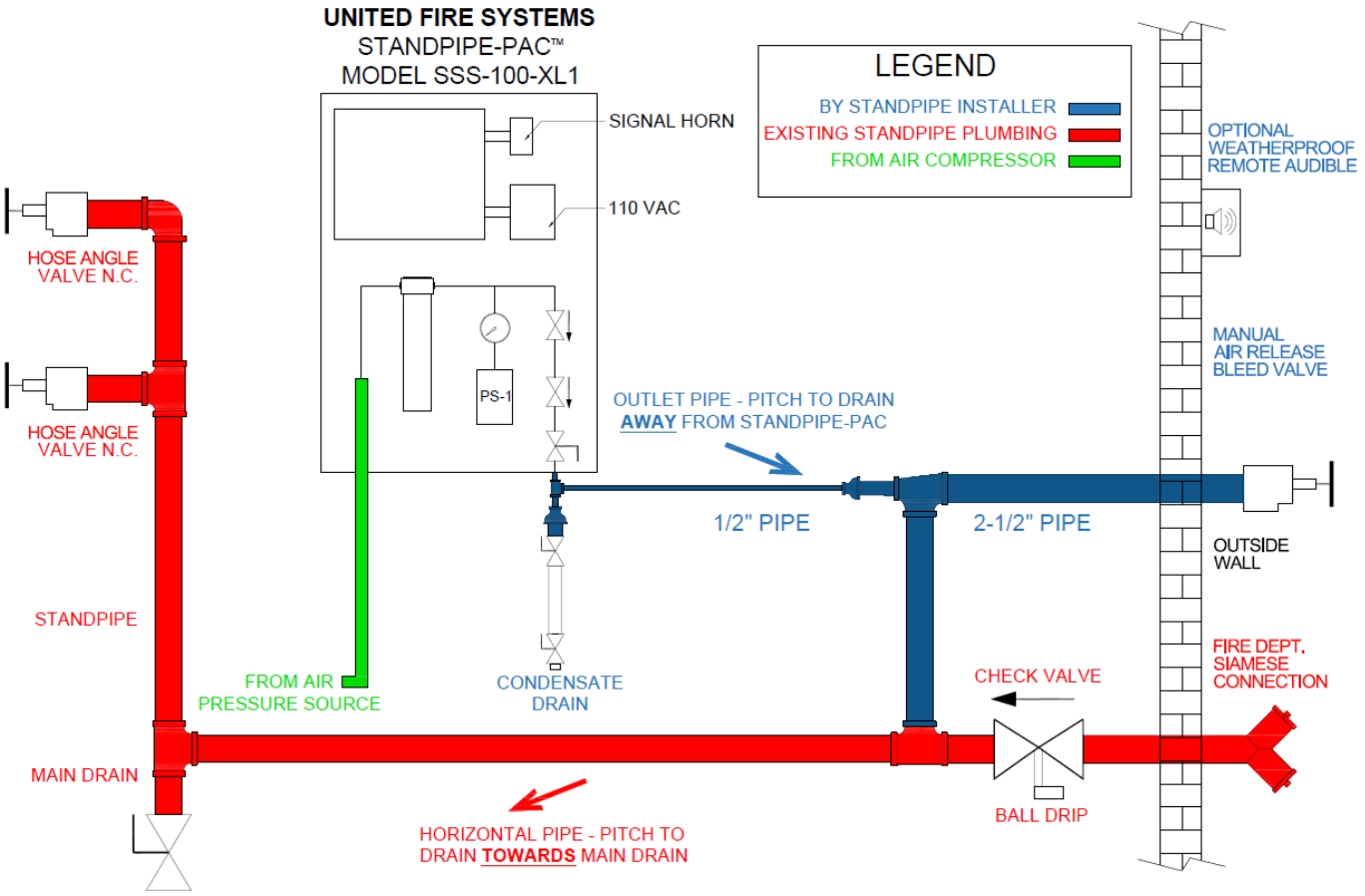

Figure 7 – **STANDPIPE-PAC™** SSS-100-XL1 Installation

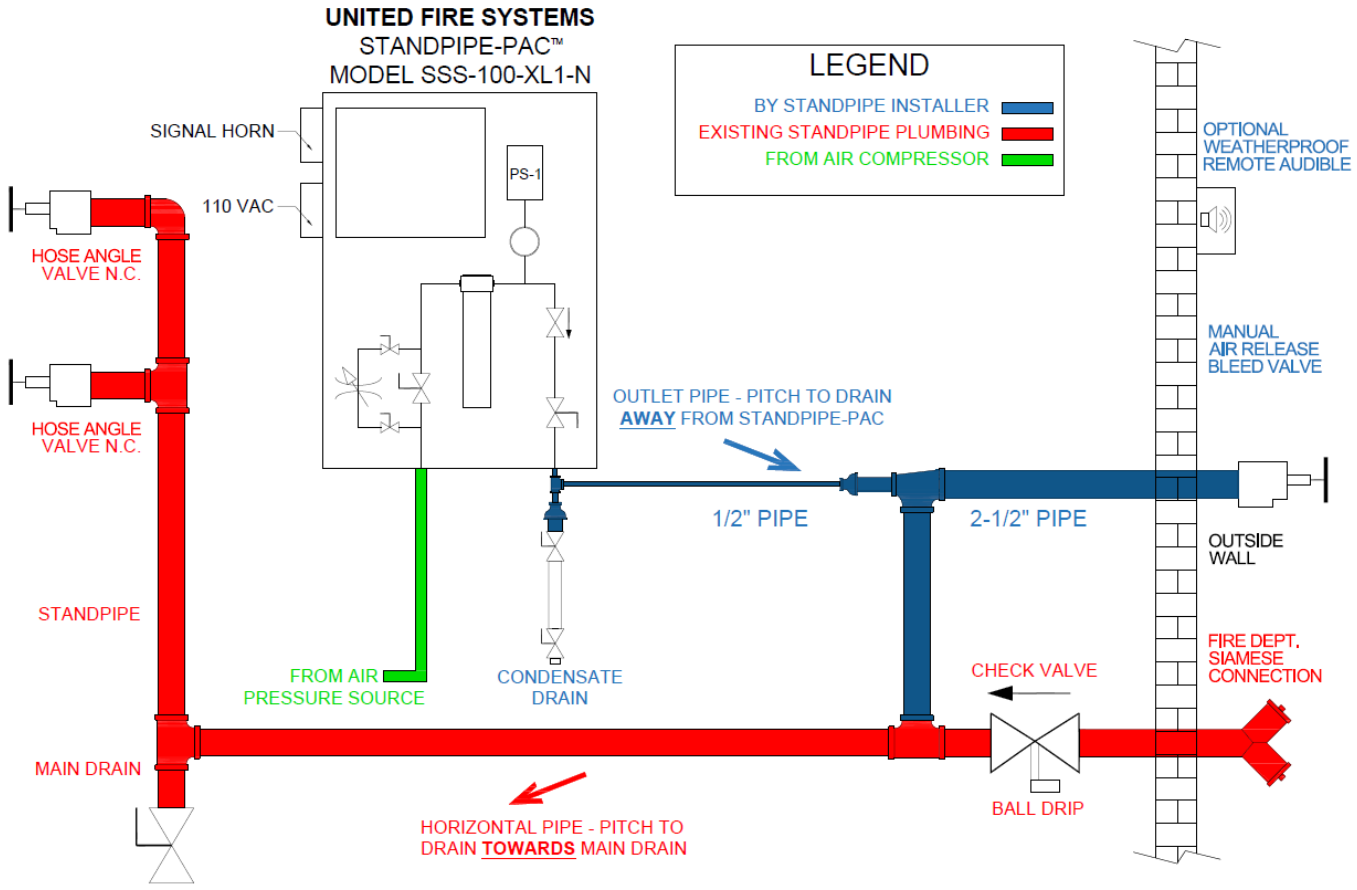

Figure 8 – **STANDPIPE-PAC™** SSS-100-XL1-N Installation

All dry standpipes should always be maintained as dry as possible. This is to minimize internal corrosion year round, as well as to minimize ice accumulation and blockage during cold weather.

To facilitate drainage, the low point of the standpipe must have a main drain valve, and all pipe should be pitched towards that main drain valve. The main drain valve should be opened on a regular basis, permitting any water accumulation or pooled water from testing to drain.

Dry standpipes installed with supervisory systems shall be installed per Figures 7 and 8 above. The diagram indicates several important facts:

1. Where possible, the **STANDPIPE-PAC™** should NOT be the low point of the dry standpipe system.
2. The piping from the **STANDPIPE-PAC™** should be pitched away from the **STANDPIPE-PAC™** so that accumulated water drains away from the **STANDPIPE-PAC™** outlet.
3. Install the Auxiliary Condensate Drain Device where shown on Figures 7 and 8, per 3.3.4.

CAUTION
Failure to confirm that the standpipe is NOT pressurized could result in personal injury and / or property damage.

3.3.3. Manual Air Release Bleed Valve. See Figure 3. Locate the manual air release bleed valve on the exterior of the building in proximity to the fire department Siamese connection feeding the standpipe protected by the **STANDPIPE-**

PAC™. Attach the cap and chain to the valve. Secure the provided nameplate to the building or the valve so that the fire department can clearly identify the purpose of the valve and follow the instructions on the nameplate.

3.3.4. Auxiliary Condensate Drain Device

IMPORTANT

The Auxiliary Condensate Drain Device does NOT take the place of a standpipe system main drain. Ensure that a main drain valve is properly installed at the lowest point of the standpipe, in an accessible area, where all the water from the standpipe may be properly drained.

1. Determine the installation location of the Auxiliary Condensate Drain Device:
    a. Locate the device in close proximity to the outlet of the **STANDPIPE-PAC™.**
    b. The location of the **STANDPIPE-PAC™** and the Auxiliary Condensate Drain Device MUST be in an area protected from freezing temperatures (over +32°F (0° C)).
    c. The device MUST be installed vertically – see Figures 7 and 8.
    d. No separate bracket is necessary – the inlet piping connection should be satisfactory to hold the device in place.

2. Remove and discard plastic plug from device inlet (Valve 1).
3. See Figures 7 and 8. Attach a ½ inch close pipe nipple and the bull of a ½ inch pipe tee to device inlet. (Valve 1)
4. Install a convenient length of ½ inch threaded pipe between the outlet of the **STANDPIPE-PAC™** and the run of the tee attached to the device inlet.
5. See Figures 7 and 8. Connect ½ inch pipe to the remaining run of the tee attached to the device and the inlet to the dry standpipe. Pitch the pipe to drain away from the device.
6. See Figure 4. Attach Instruction Nameplate to wall in close proximity to device.

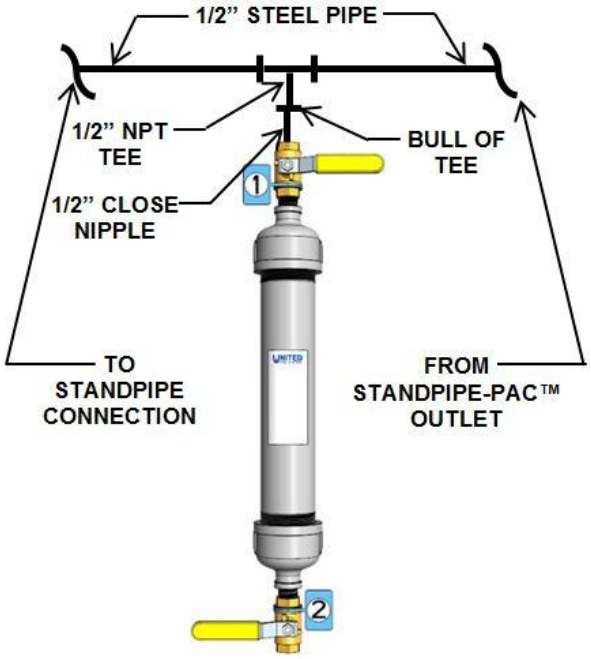

Figure 9 – Auxiliary Condensate Drain Device

3.3.5. Electrical Installation.

DANGER

RISK OF ELECTROCUTION

Voltages and currents associated with **STANDPIPE-PAC™** units are **LETHAL**. Follow all instructions provided. Work on **STANDPIPE-PAC™** unit power MUST be performed ONLY by qualified individuals. All required precautions to prevent contact with live electrical conductors and equipment MUST be taken. Failure to comply with these instructions is an immediate hazard with a likelihood of death or serious personal injury!

3.3.5.1. Codes. All **STANDPIPE-PAC™** wiring and wiring methods shall be in strict compliance with NEC and local codes.

3.3.5.2. Personnel. All wiring shall be performed by licensed electricians.

3.3.5.3. Power Wiring. Connect 120VAC power from a dedicated circuit in junction box provided for this purpose – see Figures 1 and 2. When connecting power, ensure circuit breaker is OFF. Do not turn on circuit breaker until installation is complete and system is ready for commissioning.

3.3.5.4. Battery Wiring. See Figure 10. DO NOT connect battery until commissioning.

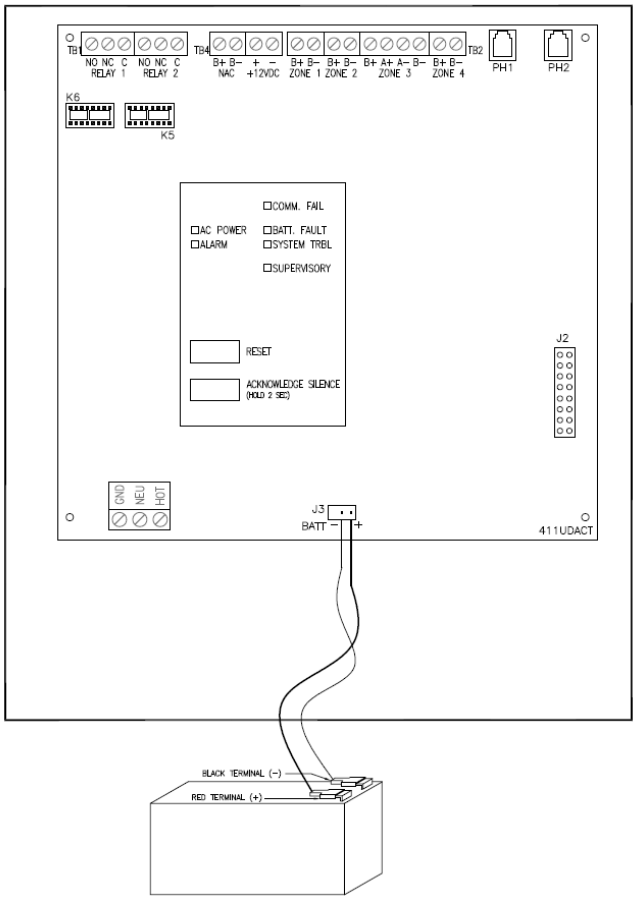

Figure 10 – Battery Wiring

3.3.5.5. Signal Wiring.

IMPORTANT
REFER TO THESE INSTRUCTIONS BEFORE WIRING SIGNAL HORNS.

NOTICE
UNITED Fire Systems strongly recommends that optional signal wiring be installed by a qualified electrician who is familiar with low-voltage DC signal wiring, preferably experienced with fire alarm notification appliance circuits (NACs).

3.3.5.5.1. Factory-Installed Signal Horn: An audible signal horn is factory –installed and wired to the notification appliance circuit of the **STANDPIPE-PAC™** unit. See Figure 11.

3.3.5.5.2. Optional Signaling Devices. If additional audible devices are desired, connect these devices to the notification appliance circuit serving the signal horn on the **STANDPIPE-PAC™** unit. See **Appendix C** for additional information, including power capacity of notification appliance circuit. See Figure 11. Additional horns are available from UNITED Fire Systems – P/N 03-100006-003

IMPORTANT
UNITED Fire Systems recommends that all devices connected to the Notification Appliance Circuit (NAC) of the **STANDPIPE-PAC™** unit be audible ONLY. Local Law 64 / BC 3303.8.1 requires only audible notification. Visual indicators, such as strobes, can easily be mistaken for fire alarm signal devices. Signals from the **STANDPIPE-PAC™** unit are NOT fire alarm signals.

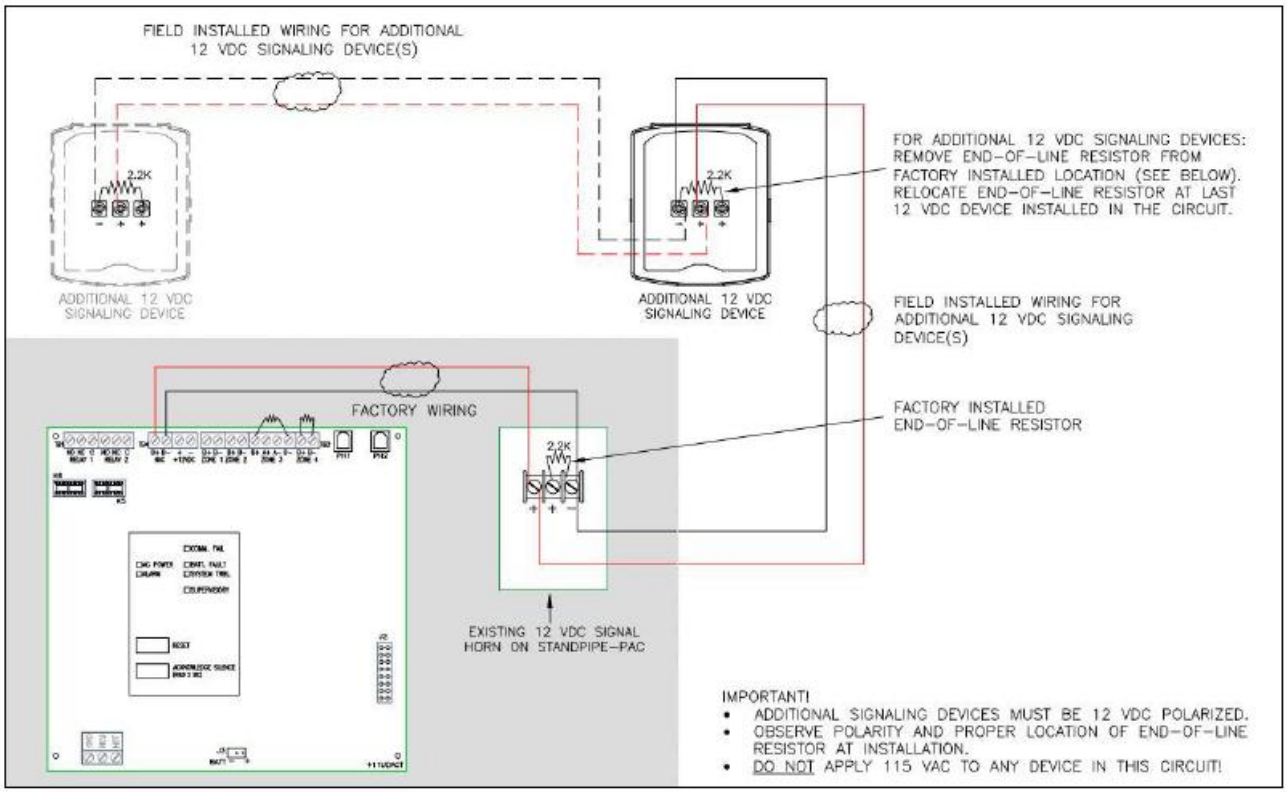

Figure 11 – Wiring Diagram – Notification Appliance Circuit

Nominal Operating Voltage	13.8 VDC
Required Device Voltage Rating	12 VDC (NOT 24 VDC or 110 VAC)
Maximum Number of Signal Horns	One (1) factory–installed signal horn PLUS ten (10) optional signal horns
Maximum Current Draw FOR ALL external Signal Horns (NOT including factory–installed signal horn)	1.0 A
Maximum Length Of Notification Appliance Circuit (from factory-installed signal horn to last signal horn on the NAC)	375 feet
Minimum Recommended Wire Gauge	14 AWG Solid
Recommended Wire Insulation Colors For Polarity Identification	**RED** for positive (+)
	GRAY or **BLACK** for negative (-)
End-Of- Line Resistor (UFS P/N 03-100005-102)	2.2K ohms

Table 2 - **STANDPIPE-PAC™** Notification Appliance Circuit (NAC)
Limitations and Other Parameters

STEP-BY-STEP GUIDE TO INSTALLING ADDITIONAL SIGNAL HORNS TO STANDPIPE-PAC™

1. Ensure that the **STANDPIPE-PAC™** control unit has **NOT** been powered up, with AC power and batteries disconnected.
2. See **Figure 12** and **Figure 12.1**. Remove Signal Horn cover from factory installed Signal Horn assembly on **STANDPIPE-PAC™.**

Figure 12

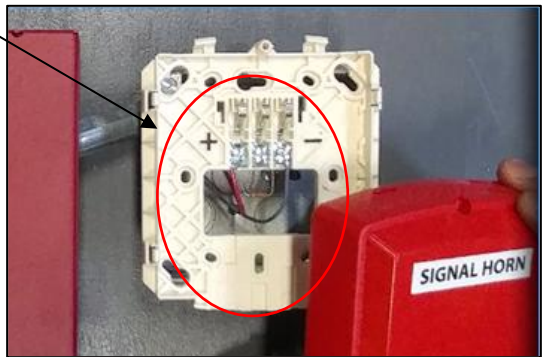

Figure 12.1

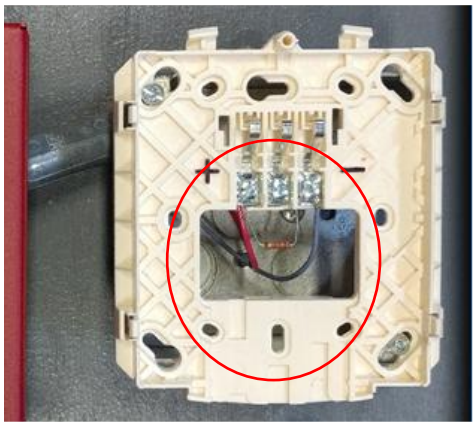

Figure 12.2

3. See **Figure 12.2**. Visually inspect Signal Horn base-plate connections. Locate positive and negative terminals on base-plate. **NOTE**: **RED** wire connects to positive terminal; **GRAY** wire connects to negative terminal.

4. See **Figure 12.2** Locate **end-of-line resistor**; factory installed between positive and negative terminals on Signal Horn base-plate.

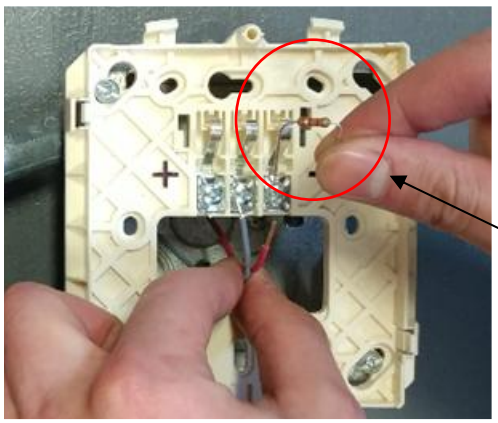

Figure 12.3

5. See **Figure 12.3** Disconnect **RED** and **GRAY** wires and remove end-of line resistor from base plate. **IMPORTANT: DO NOT DISCARD END OF LINE RESISTOR**

STEP-BY-STEP GUIDE, CONTINUED

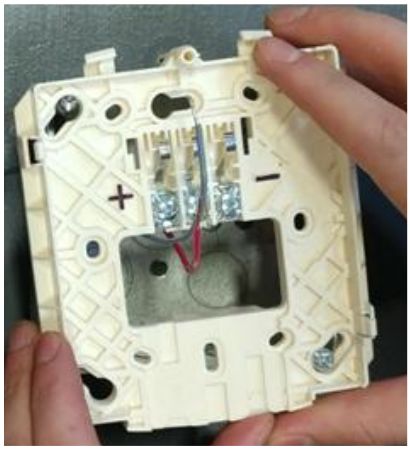

Figure 12.4

6. See **Figure 12.4** Remove Signal Horn base-plate from back box.

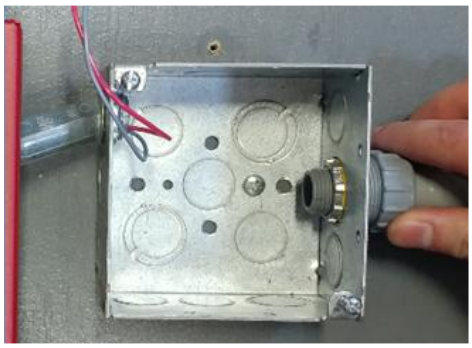

Figure 12.5

7. See **Figure 12.5** Attach raceway to signal horn box at appropriate knockout. Install raceway from factory installed Signal Horn back box to additional Signal Horn. **NOTE**: See Table 4 for distance limitations.

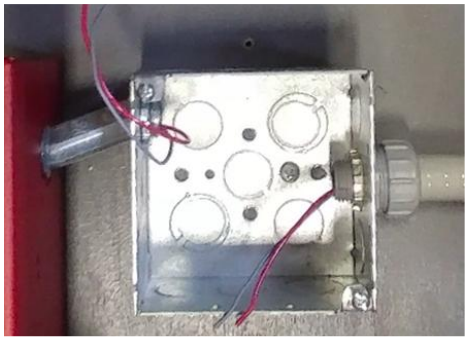

Figure 12.6

8. See **Figure 12.6** Run **14 AWG Solid** wires from additional Signal Horn, through raceway and into factory installed Signal Horn back box. **NOTE:** UNITED Fire Systems recommends using **RED**, and **GRAY** or **BLACK** wires for consistency and polarity identification.

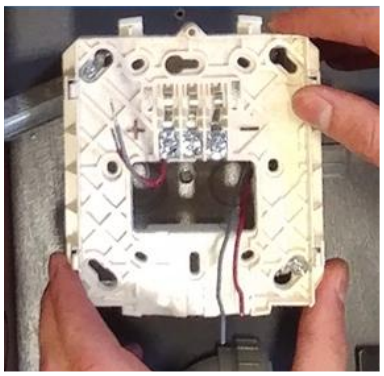

Figure 12.7

9. See **Figure 12.7** Re-install Signal Horn base plate to back box on **STANDPIPE-PAC™.**

STEP-BY-STEP GUIDE, CONTINUED

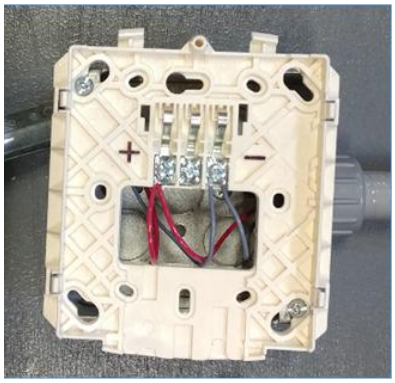

Figure 12.8

10. See **Figures 12.7**, **12.8** and **Figure 11 Wiring Diagram**. Strip ends of wire installed in Step 8. Attach wires removed in Step 5 and wires installed in Step 8 to Signal Horn base plate terminals.

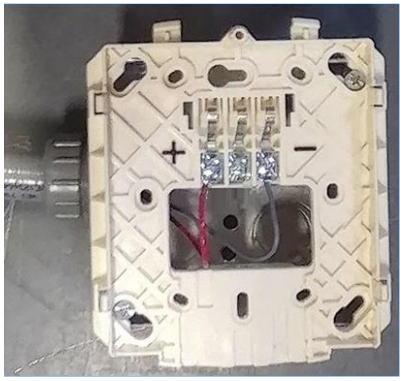

Figure 12.9

11. See **Figure 12.9**. Connect wires at additional Signal Horns. **IMPORTANT! Do not branch Signal Horn circuit. Run circuit from the first Signal Horn to the second Signal Horn, then the second Signal Horn to the third, and so on.**

12. Repeat steps 5 through 10 for each additional Signal Horn. **NOTE**: See Table 3 for distance limitations and maximum number of additional devices.

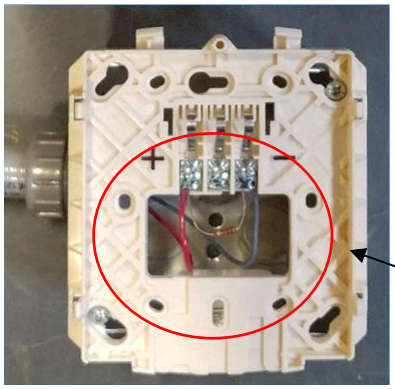

Figure 12.10

13 See **Figure 12.10**. Install end of line resistor, retained from Step 5, at last Signal Horn, between positive and negative terminals.

STEP-BY-STEP GUIDE, CONTINUED

14. See **Figure 12.11** and **Figure 12.12**. Replace Signal Horn cover(s). **IMPORTANT**: Cover(s) MUST be fastened correctly for proper wire contact. Trouble signal will occur if Signal Horn cover(s) is not fastened correctly.

Figure 12.11

Figure 12.12

Table 5 - Do's and Don'ts

✓ **Do** make sure the Signal Horn covers are clicked firmly into place onto the Signal Horn base plates once wiring is complete.	× **Don't** wire 115 VAC on this circuit.
✓ **Do** use a minimum of 14 AWG size wire.	× **Don't** mix up the polarity. Know the polarity at both ends of the wiring. Wire per polarity diagram.
✓ **Do** wire additional devices per Figure 11. The end-of-line resistor must be moved to the last device in the circuit per Figure 11.	× **Don't** exceed the current capacity of the circuit when adding additional horns to the **STANDPIPE-PAC™**. Each additional horn adjusted to FULL VOLUME draws 0.047 amps. As noted on page 1, the current for all external devices, including the factory-installed signal horn, is 1.0 amp.
✓ **Do** use **RED** and **GRAY** wire for (+) and (-) conductors so it is easy to maintain polarity.	
✓ **Do** install the end-of-line resistor on the terminals indicated.	× **Don't** branch the signaling circuit. Wire horns in parallel, from one horn to the next. See **Figure 11: Wiring Diagram.**
✓ **Do** ensure additional device(s) are 12VDC.	

4. COMMISSIONING

4.1. Required Supervisory Pressure.

STANDPIPE-PAC™ has been designed and engineered to meet all requirements of New York City (NYC) Construction Code BC 3303.8.1 (also known as Local Law 64). NYC BC 3303.8.1, paragraph 4.1, states:

> Pressure. Pressure shall be maintained in the standpipe and cross connections at all times and shall not exceed 25 psig (172 kPag) by utilizing nitrogen or an air compressor with an air dryer. *The supervisory pressure shall be as determined by a registered design professional* (italics added).

To comply with this requirement, UNITED Fire Systems adjusts the pressure on **STANDPIPE-PAC™** to:

- The PMD, Model NAMD-1, is factory set to maintain a system pressure of 15 PSIG.
- Provide a LOW pressure signal at 7 PSIG, and a HIGH pressure signal at 23 PSIG.

Maintaining the pressure at 15 PSIG should be adequate for supervising the standpipe and providing prompt signaling if a valve is opened or a portion of the standpipe is removed. Setting the HIGH pressure signal at 23 PSIG (2 PSIG less than the code allows) provides a safety margin accounting for the accuracy of the signal switch and the pressure gauge.

Maintaining the safety margins between pressure switch settings provides adequate standpipe supervision without added risk of nuisance signals. Of course, if a *registered design professional* requires different settings, per BC 3303.8.1 paragraph 4.1., the switch may be adjusted to comply.

 IMPORTANT

The supervisory pressure switch has been factory-adjusted for proper operation per this manual. DO NOT attempt to adjust the switch without authorization from UNITED Fire Systems. The switch has a factory-applied tamper seal. DO NOT break this seal. Failure to follow these instructions can lead to improper **STANDPIPE-PAC™** operation and will void the factory warranty.

4.2. Startup.


IMPORTANT

Pressure values indicated by the **STANDPIPE-PAC™** pressure gauge are APPROXIMATE. Variation from nominal values can be expected.

STEPS TO FOLLOW FOR STANDPIPE-PAC™ SYSTEM STARTUP		
Step No.	**Description**	**Check When Complete**
1	Verify the compressor outlet valve is CLOSED.	
2	Verify all valves on the pressure maintenance device are CLOSED.	
3	Verify that all standpipe valves are CLOSED.	
4	Verify that manual air release bleed valve (see Figure 3) is CLOSED.	
5	Verify that the standpipe main drain valve has been opened to drain residual water from the standpipe, and then the main drain valve has been CLOSED.	
6	Verify that the Auxiliary Condensate Drain Device has been used to drain any residual water from the piping in the vicinity of the **STANDPIPE-PAC™,** and then Valve 1 is OPEN and Valve 2 is CLOSED.	
7	Verify that 115 VAC power is available and connected. DO NOT turn on at present.	
8	Verify that lockable shutoff valve (see Figures 1 and 2, item 8) is OPEN.	
9	Turn 115 VAC circuit breaker ON.	
10	ALARM indicator should be ON. Signal horn should be sounding.	
11	Press SILENCE switch to acknowledge alarm. Press SILENCE switch again for 2 seconds to silence signal horn.	
12	Open control unit (see Figures 1 and 2, item 9). Connect battery. See Figure 11.	
13	Where applicable, turn on the refrigerated dryer (Model XL2 only).	
14	Turn circuit breaker for the air compressor ON. Where applicable, move the compressor disconnect switch to ON. Compressor should start.	
15	Open the compressor outlet valve.	
16	Open the bypass valve on the pressure maintenance device.	
17	Verify that pressure gauge needle (see Figures 1 and 2, item 6) is moving upward.	
18	Once the standpipe reaches 15 PSIG, close the pressure maintenance device bypass valve.	
19	Control unit should be clear, with only AC POWER indicator ON.	
20	Open the inlet valve and outlet valve on the pressure maintenance device.	
21	Proceed to 4.3 – TESTING.	

4.3. Testing.

STEPS TO FOLLOW FOR STANDPIPE-PAC™ SYSTEM TESTING		
Step No.	**Description**	**Check When Complete**
### VERIFICATIONS BEFORE TESTING ###		
1	If control unit dialer is connected to telephone lines, ensure that party receiving signals is aware that testing activities are occurring.	
2	Verify that pressure gauge (see Figures 1 and 2, item 6) indicates approximately 15 PSIG.	
3	Verify that control unit AC POWER indicator is ON and no other indicators are lit.	
### LOW-LIMIT PRESSURE-SENSING SWITCH ###		
4	Move pressure maintenance device outlet valve to CLOSED position.	
5	Move lockable shutoff valve to CLOSED position.	
6	Press and hold button on Service Device (see Figures 1 and 2, item 13). Verify that pressure gauge needle is moving DOWN.	
7	When pressure gauge needle reaches approximately 7 PSIG, control unit ALARM indicator should be ON. Signal horn (see Figures 1 and 2, item 10) should sound.	
8	Release button on Service Device.	
9	Press SILENCE switch to acknowledge alarm. Press SILENCE switch again for 2 seconds to silence signal horn.	
10	Move pressure maintenance device outlet valve to OPEN. Pressure gauge needle should move UP.	
11	When pressure gauge needle moves above approximately 7 PSIG, control unit should clear and ALARM indicator should be OFF.	
12	The pressure maintenance device will fill system through its regulator to 15 PSIG.	
### HIGH-LIMIT PRESSURE-SENSING SWITCH TEST ###		
14	Verify that lockable shutoff valve is in CLOSED position.	
15	Verify that control unit AC POWER indicator is ON and no other indicators are lit.	
16	Move the pressure maintenance device bypass valve to OPEN (Slowly – Be careful to not over-pressurize the system).	
17	When pressure gauge needle reaches approximately 23 PSIG, control unit ALARM indicator should be ON. Signal horn should sound.	
18	Move the pressure maintenance device bypass valve to CLOSED.	
19	Press SILENCE switch to acknowledge alarm. Press SILENCE switch again for 2 seconds to silence signal horn.	
21	Press and release button on Test / Service Device until pressure gauge reads between 15 PSIG. Control unit ALARM indicator should be OFF. Signal horn should be OFF.	
23	Move lockable shutoff valve to OPEN position.	
24	Pressure gauge may drop. Compressor may start. Pressure gauge should stabilize at 15 PSIG, and once the compressor reaches its cutoff setpoint, it should be OFF.	
### STANDPIPE DEPRESSURIZATION TEST ###		
25	Remove cap from manual air release bleed valve. Open manual air release bleed valve all the way OPEN.	
26	Pressure gauge reading should drop to 0 (zero) PSIG in approximately 3 minutes.	
27	Close manual air release bleed valve.	
28	Refill the standpipe via the pressure maintenance device bypass valve. Pressure gauge reading should be approximately 15 PSIG in the design amount of time (see Section 2 – DESIGN).	
29	Proceed to 4.4. – PLACING IN SERVICE.	

4.4. Placing In Service.

STEPS TO FOLLOW FOR PLACING STANDPIPE-PAC™ SYSTEM IN SERVICE		
Step No.	**Description**	**Check When Complete**
1	Where applicable, verify that compressor disconnect switch is ON.	
2	Verify that battery is properly connected to control unit (see Figure 10).	
3	Verify that control unit AC POWER indicator is ON and no other indicators are lit.	
4	Verify that pressure gauge (see Figures 1 and, item 6) indicates approximately 15 PSIG.	
5	Place lock on lockable shutoff valve.	
6	Close and lock control unit door. It is recommended that one key be left in control unit lock.	
7	Deliver second control unit key, lockable shutoff valve key(s), and this manual to responsible individual at job site.	
8	If control unit dialer is connected to telephone lines, ensure that party receiving signals is aware that system is now in service.	
9	System is now in service.	

5. OPERATION

5.1. Indicators.

5.1.1. Pressure Gauge. The pressure gauge indicates the approximate pressure present within the **STANDPIPE-PAC™** piping and the standpipe.

5.1.2. PMD Pressure Gauge. Indicates the regulated setpoint for standpipe system pressure.


IMPORTANT
Pressure values indicated by the **STANDPIPE-PAC™** pressure gauge(s) are APPROXIMATE. Variation from nominal values can be expected.

5.1.3. Signal Horn. The signal horn is the required audible indicator to annunciate an alarm condition. The signal horn will sound when the pressure in the standpipe drops below approximately 7 PSIG, or rises above 23 PSIG, indicating an impairment of the standpipe requiring correction.

5.1.4. Indicators Within Control Unit.

5.1.4.1. Visual Indicator – "AC POWER". This is a green LED, visible with unit door closed or open, indicating that AC power has been applied to the unit.

5.1.4.2. Visual Indicator – "ACTIVE". This is a red LED, visible with unit door closed or open, indicating that either the low-limit or high-limit pressure sensing switch has activated.

5.1.4.3. Visual Indicator – "COMM. FAIL". This is a yellow LED, visible with unit door closed or open, indicating failure of communications over the telephone lines (if connected).

5.1.4.4. Visual Indicator – "BATT. FAULT". This is a yellow LED, visible with unit door closed or open, indicating trouble with the backup battery.

5.1.4.5. Visual Indicator – "SYSTEM TRBL". This is a yellow LED, visible with unit door closed or open, indicating a fault on a supervised circuit.

5.1.4.6. Visual Indicator – "SUPERVISORY". This is a yellow LED that is not used with **STANDPIPE-PAC™.**

5.1.4.7. Visual Indicator – "GND FAULT". This is a yellow LED, visible only with unit door open, indicating a ground fault on an external circuit.

5.1.4.8. Audible Indicator – Piezo Sounder. This is an audible indicator that sounds whenever an ACTIVE or SYSTEM TRBL signal exists.

5.2. Controls.

5.2.1. Lockable Shutoff Valve. This valve is used during testing and maintenance to isolate the **STANDPIPE-PAC™** from the standpipe. The normal position of this valve is OPEN. A lock should be placed on this valve to ensure it stays in the OPEN position, and is not closed inadvertently.

5.2.2. Service Device. This device is used ONLY during testing and maintenance. DO NOT operate this device unless testing and maintenance procedures are being followed.

5.2.3. Controls Within PMD. Refer to **Appendix A.**

5.2.3.1. Inlet Valve(s). These two (2) valves are set to the OPEN position during Normal Operation. The valves control flow through the regulator on the PMD.

5.2.3.2. Bypass Valve. This valve is set to CLOSED during Normal Operation. This valve will be open when initially filling the standpipe from 0 pressure in Bypass Mode.

5.2.4. Controls Within Control Unit.

5.2.4.1. Pushbutton – "RESET". This pushbutton resets all control unit circuits.

5.2.4.2. Pushbutton – "ACKNOWLEDGE SILENCE (HOLD 2 SEC.)".

5.2.4.2.1. Press this pushbutton ONCE to acknowledge signals. Piezo sounder is silenced, and all flashing visual indicators change to steady on.

5.2.4.2.2. Press a second time and HOLD for two (2) seconds to silence the Signal Horn.

5.3. Indications.

5.3.1. Normal Operation. Under normal operation, the following will be indicated:

NORMAL OPERATION		
INDICATOR or CONTROL	**ITEM**	**STATUS**
Visual Indicator	Pressure Gauge	Indicating 15 PSIG
Visual Indicator	PMD Pressure Gauge	Indicating 15 PSIG
Visual Indicator	AC POWER	**ON**
Visual Indicator	ACTIVE	Off
Visual Indicator	COMM. FAIL	Off
Visual Indicator	BATT. FAULT	Off
Visual Indicator	SYSTEM TRBL	Off
Visual Indicator	SUPERVISORY	Off
Visual Indicator	GND FAULT	Off
Audible Indicator	Piezo Sounder	Off
Audible Indicator	Signal Horn	Off
Control	Lockable Shutoff Valve	Open
Control	PMD Inlet Valves	Open
Control	PMD Bypass Valve	Closed
Control	Service Device	Not Operated

5.3.2. Signal Operation – Low Pressure In Standpipe.

WARNING

Low pressure in the standpipe is an indication that the standpipe is **IMPAIRED**. Follow instructions under "**6.5. Troubleshooting. STANDPIPE-PAC™** does not build sufficient pressure in standpipe." Failure to do so may result in death, personal injury, or serious property damage when firefighters cannot fight a fire.

When pressure drops within the standpipe, the following will be indicated:

LOW PRESSURE IN STANDPIPE		
INDICATOR or CONTROL	**ITEM**	**STATUS**
Visual Indicator	Pressure Gauge	**Indicating less than 7 PSIG**
Visual Indicator	PMD Pressure Gauge	**-**
Visual Indicator	AC POWER	**ON**
Visual Indicator	ACTIVE	**ON**
Visual Indicator	COMM. FAIL	Off
Visual Indicator	BATT. FAULT	Off
Visual Indicator	SYSTEM TRBL	Off
Visual Indicator	SUPERVISORY	Off
Visual Indicator	GND FAULT	Off
Audible Indicator	Piezo Sounder	**ON**
Audible Indicator	Signal Horn	**ON**
Control	Lockable Shutoff Valve	Open
Control	PMD Inlet Valves	-
Control	PMD Bypass Valve	-
Control	Service Device	Not Operated

5.3.3. Signal Operation – High Pressure In Standpipe.

CAUTION

High pressure in the standpipe can lead to a delay in firefighter use of the standpipe. Follow instructions under "**6.5. Troubleshooting. STANDPIPE-PAC™** builds too much pressure in standpipe." Failure to do so increases the risk of injury and property damage when firefighters are delayed when fighting a fire.

If pressure increases in standpipe above 25 PSIG, the following will be indicated:

HIGH PRESSURE IN STANDPIPE		
INDICATOR or CONTROL	**ITEM**	**STATUS**
Visual Indicator	Pressure Gauge	**Indicating 23 PSIG or more**
Visual Indicator	PMD Pressure Gauge	**-**
Visual Indicator	AC POWER	**ON**
Visual Indicator	ACTIVE	**ON**
Visual Indicator	COMM. FAIL	Off
Visual Indicator	BATT. FAULT	Off
Visual Indicator	SYSTEM TRBL	Off
Visual Indicator	SUPERVISORY	Off
Visual Indicator	GND FAULT	Off
Audible Indicator	Piezo Sounder	**ON**
Audible Indicator	Signal Horn	**ON**
Control	Lockable Shutoff Valve	Open
Control	PMD Inlet Valves	-
Control	PMD Bypass Valve	-
Control	Service Device	Not Operated

5.4. Procedures

5.4.1. Normal Operation. Under normal operation, no intervention is needed.

5.4.2. To Silence Piezo Sounder. Press "ACKNOWLEDGE SILENCE (HOLD 2 SEC.)" pushbutton once.

5.4.3. To Silence Signal Horn(s). Press "ACKNOWLEDGE SILENCE (HOLD 2 SEC.)" pushbutton once, followed by pressing and holding the pushbutton for 2 seconds.

5.4.4. For Fire Department Use of Fire Standpipe.

WARNING

The fire standpipe MUST only be placed into use by the fire department. DO NOT use the standpipe for any other purpose. Failure to follow this warning may result in impairment of the standpipe in the event of fire, and may result in death, personal injury, or serious property damage when firefighters cannot fight a

- Open Manual Air Release Bleed Valve located in proximity to fire department siamese.
- Allow air to bleed from fire standpipe for 3 minutes.
- Close Manual Air Release Bleed Valve before pumping water into fire standpipe.

5.4.5. To Refill Standpipe With Air Pressure After Fire Department Use

CAUTION

After standpipe-has been filled with water for any reason, ensure that standpipe is completely empty of water before refilling standpipe with air pressure. Use all available drain points to remove all water from the standpipe. If, at any time, it is suspected that water has entered the **STANDPIPE-PAC™** unit, contact UNITED Fire Systems or your trained distributor before refilling standpipe with air pressure.

- Ensure that standpipe is completely drained of water, and no pressure remains in standpipe.
- Ensure that Compressor is ON, pressure regulating device is set to bypass mode, and all standpipe valves are closed.
- **STANDPIPE-PAC™** unit will refill standpipe with air.

TO REFILL STANDPIPE WITH AIR PRESSURE		
INDICATOR or CONTROL	**ITEM**	**STATUS**
Visual Indicator	Pressure Gauge	**Indicating less than 7 PSIG**
Visual Indicator	PMD Pressure Gauge	**0 PSIG**
Visual Indicator	AC POWER	**ON**
Visual Indicator	ACTIVE	**ON**
Visual Indicator	COMM. FAIL	Off
Visual Indicator	BATT. FAULT	Off
Visual Indicator	SYSTEM TRBL	Off
Visual Indicator	SUPERVISORY	Off
Visual Indicator	GND FAULT	Off
Audible Indicator	Piezo Sounder	**ON**
Audible Indicator	Signal Horn	**ON**
Control	Lockable Shutoff Valve	Open
Control	PMD Inlet Valves	**Closed**
Control	PMD Bypass Valve	**Open**
Control	Service Device	Not Operated

5.4.6. To Test Standpipe with Water Pressure

CAUTION

After standpipe-has been filled with water for any reason, ensure that standpipe is completely empty of water before refilling standpipe with air pressure. Use all available drain points to remove all water from the standpipe. If, at any time, it is suspected that water has entered the **STANDPIPE-PAC™** unit, contact UNITED Fire Systems or your trained distributor before refilling standpipe with air pressure.

NFPA 14 – 2016, *Standard for the Installation of Standpipe and Hose Systems* addresses hydrostatic testing in Section 11.4. Paragraph 11.4.5 states that an air test can be done if cold weather prevents testing with water. Paragraph 11.4.7.2 states that if modifications to a standpipe (such as 'jumping' to higher floors) cannot be isolated, then a pressure test is not required. Paragraph 11.4.8 further states that care shall be taken to ensure that no portion of the piping is subject to freezing during cold weather. Based on these paragraphs, UNITED Fire Systems ***strongly recommends***:

- If the monthly test can be avoided, do so.
- If the monthly test cannot be avoided, perform testing during cold weather with air only'
- If testing with water is deemed to be necessary, regardless of the weather, the Site Safety Manager should ensure that the Method of Procedure (MOP) for such testing include, as its very first step, that the **STANDPIPE-PAC™** outlet valve be CLOSED and locked in this position for the duration of the test.
- The MOP should include using all drainage measures after testing, and making sure the standpipe is completely drained, before the **STANDPIPE-PAC™** outlet valve is re-opened.

IMPORTANT

Although the **STANDPIPE-PAC™** is equipped with an outlet check valve, it is important to take precautions to prevent inadvertent water entry into the **STANDPIPE-PAC™** piping and components. To prevent such water entry, ***always remember*** to do the following:

- ALWAYS unlock and close **STANDPIPE-PAC™** outlet valve BEFORE testing standpipe by flooding with water.
- ALWAYS completely drain standpipe at main drain after testing standpipe by flooding with water, and operate Auxiliary Condensate Drain Device until no water drains from device.
- ALWAYS open and re-lock **STANDPIPE-PAC™** outlet valve after completely draining water.
- NEVER flood standpipe with water when **STANDPIPE-PAC™** outlet valve is closed UNLESS standpipe is being used by fire department.
- NEVER expose **STANDPIPE-PAC™** or Auxiliary Condensate Drain Device to freezing temperatures. Ice can block **STANDPIPE-PAC™** outlet and / or standpipe, possibly inhibiting standpipe use by Fire Department in case of emergency.

- Ensure there are no low points or traps without drains.

- CLOSE Lockable Shutoff Valve BEFORE testing standpipe with water pressure.
- Perform pressure test.
- Use main drain, and all drainage valves at low points, to drain all water from standpipe.
- Use Auxiliary Condensate Drain Device to drain all water from piping in the vicinity of the **STANDPIPE-PAC™.**
- It may take time for water to migrate from upper floors. Allow sufficient time with drains open for all water to drain.
- OPEN Lockable Shutoff Valve ONLY after all water has been drained from the standpipe.
- Follow instructions in 5.4.5 to refill standpipe with air.

6. MAINTENANCE.

Maintenance is vitally important for the continued protection provided by the **STANDPIPE-PAC™** unit. Perform all maintenance according to the instructions in this manual.


DANGER

RISK OF ELECTROCUTION

Voltages and currents associated with **STANDPIPE-PAC™** units are **LETHAL**. Follow all instructions provided. Work on **STANDPIPE-PAC™** unit power MUST be performed ONLY by qualified individuals. All required precautions to prevent contact with live electrical conductors and equipment MUST be taken. Failure to comply with these instructions is an immediate hazard with a likelihood of death or serious personal injury!

CAUTION

Before performing maintenance on the **STANDPIPE-PAC™** unit, confirm that the unit is NOT pressurized. Failure to confirm that the unit is NOT pressurized could result in personal injury and / or property damage.

IMPORTANT

Pressure values indicated by the **STANDPIPE-PAC™** pressure gauge(s) are APPROXIMATE. Variation from nominal values can be expected.

IMPORTANT

The **STANDPIPE-PAC™** unit, including control unit, has been pre-wired and programmed at the factory for proper operation. DO NOT alter any factory wiring or control unit programming. Failure to follow this instruction can result in improper **STANDPIPE-PAC™** operation and will void the factory warranty.

6.1. Weekly. Weekly maintenance consists of visual checks of the status of the **STANDPIPE-PAC™** unit and the standpipe itself.

Item	Normal Status	Abnormal Status	What To Do If Status Is Abnormal
Check control panel visual indicators	AC Power Green LED – ON All other LED indicators – OFF	Any indicators other than AC Power ON	Contact your service provider for service.
Check Pressure Gauge	Indicating between 13 to 18 PSIG	Indicating below 13 PSIG or above 18 PSIG	Contact your service provider for service.
FOR XL1, XL1-N Check Desiccant in Air Dryer	Blue color	Pink color	If desiccant is pink throughout, contact your service provider for service
Check Lockable Shutoff valve	Locked in OPEN position	Unlocked or CLOSED	Open valve and apply lock.
Check Manual Air Release Bleed Valve	Valve – CLOSED Cap – Attached to outlet of valve; chain intact and connected to valve	Valve – OPEN Cap – Disconnected or Missing	If valve is OPEN, CLOSE valve tightly. If cap is disconnected, re-connect. If cap is missing, contact service provider for replacement.
Check standpipe valves	All valves – CLOSED	Any valve OPEN	Ensure all valves are CLOSED.

6.2. Monthly. Monthly maintenance consists of standpipe water drainage and quick checks of alarm response.

Item	Procedure	Normal Status	What To Do If Status Is Abnormal
Drain water from standpipe	See ***** below	No water in standpipe	Draining returns standpipe to normal status
Check High Alarm	1. Compressed air source ON. 1. Lockable shutoff valve CLOSED. 2. Operate Service Device.	Signal horn should sound when pressure gauge is held at 23 ± 1 PSIG	**See 6.2. Troubleshooting**
Check Low Alarm	1. Compressed air source OFF. 2. Lockable shutoff valve CLOSED. 3. Operate Service Device.	Signal horn should sound when pressure gauge is held at 7 ± 1 PSIG.	See **6.2. Troubleshooting**
Return To Normal Status	1. Lockable shutoff valve OPEN. 2. Compressed air source should run until standpipe is properly filled.	1. Compressed air source OFF. 2. No abnormal indications on control panel. 3. Pressure gauge is held between 13 and 18 PSIG.	**See 6.2. Troubleshooting**

***** To drain water from piping in vicinity of **STANDPIPE-PAC™** while standpipe is pressurized with air by **STANDPIPE-PAC™:**

1. Unlock and close **STANDPIPE-PAC™** outlet valve.
2. Remove and retain steel plug from device outlet (Valve 2)
3. Open Valve 1 of Auxiliary Condensate Drain Device, allowing water to drain into device.
4. Close Valve 1 BEFORE opening Valve 2.
5. Open Valve 2 of Auxiliary Condensate Drain Device, allowing water to drain from device.
6. Close Valve 2 and re-open Valve 1. Repeat until no additional water drains from device outlet.
7. Replace steel plug in device outlet (Valve 2)

6.3. Quarterly.


IMPORTANT

Quarterly maintenance as indicated below is vitally important for continued proper functioning of your **STANDPIPE-PAC™**. Please do NOT neglect these procedures!

6.3.1. (For Models XL1 & XL1-N) Replacement of Desiccant In Dryer. It is important that the air dryer continue to remove moisture from the compressed air. For this reason, it is recommended that the dryer desiccant be replaced quarterly.

NOTE – Refer to Figure 13 for XL1, and Figure 14 for XL1-N.

1. Have Qty. (4) UFS P/N 21-100000-100 Replacement Desiccant available.
2. Notify local personnel that signals will be heard / seen during maintenance.
3. If dialer is connected to telephone line, notify receiving office that signals will be transmitted during maintenance.
4. Close lockable shutoff valve on outlet of STANDPIPE-PAC.
5. Set compressed air source to OFF.
   NOTE for XL1-N - NAMD-1 inlet ball valves and bypass valve are closed.
6. De-pressurize STANDPIPE-PAC piping by operating Service Device. Hold until pressure gauge indicates ZERO.
7. Silence audible signal by opening door of control unit and operating Acknowledge-Silence button. Hold for 2 seconds until audible signal silences.


CAUTION

DO NOT turn connecting ring on desiccant air dryer unless pressure gauge indicates ZERO. Failure to do so can result in personal injury and property damage.

8. Locate desiccant air dryer on STANDPIPE-PAC. Locate and remove connecting ring holding desiccant reservoir in place by twisting it counter-clockwise.
9. Remove 9/16” locknut on tube cushion clamp.
10. Detach desiccant reservoir from assembly.
11. Remove and discard the desiccant beads from the reservoir.
12. Fill desiccant reservoir with new desiccant beads to approximately the same level. Use replacement desiccant from Step 1.
13. Carefully align and insert desiccant reservoir back into assembly until it is flush against air dryer cap and cushion clamp.
14. Turn connecting ring clockwise until connection is re-established.
15. Replace 9/16” locknut on cushion clamp. Tighten until desiccant reservoir is secure.
16. Ensure that desiccant reservoir is secure.

17. Set compressed air source to ON. Pressure gauge should begin to increase.
    NOTE for XL1-N – Ensure NAMD-1 inlet ball valves are open.
18. Check for leaks at air dryer connecting ring.
19. Open lockable shutoff valve on outlet of STANDPIPE-PAC.
20. Notify local personnel (and receiving office, if phone line is connected) that maintenance is complete.

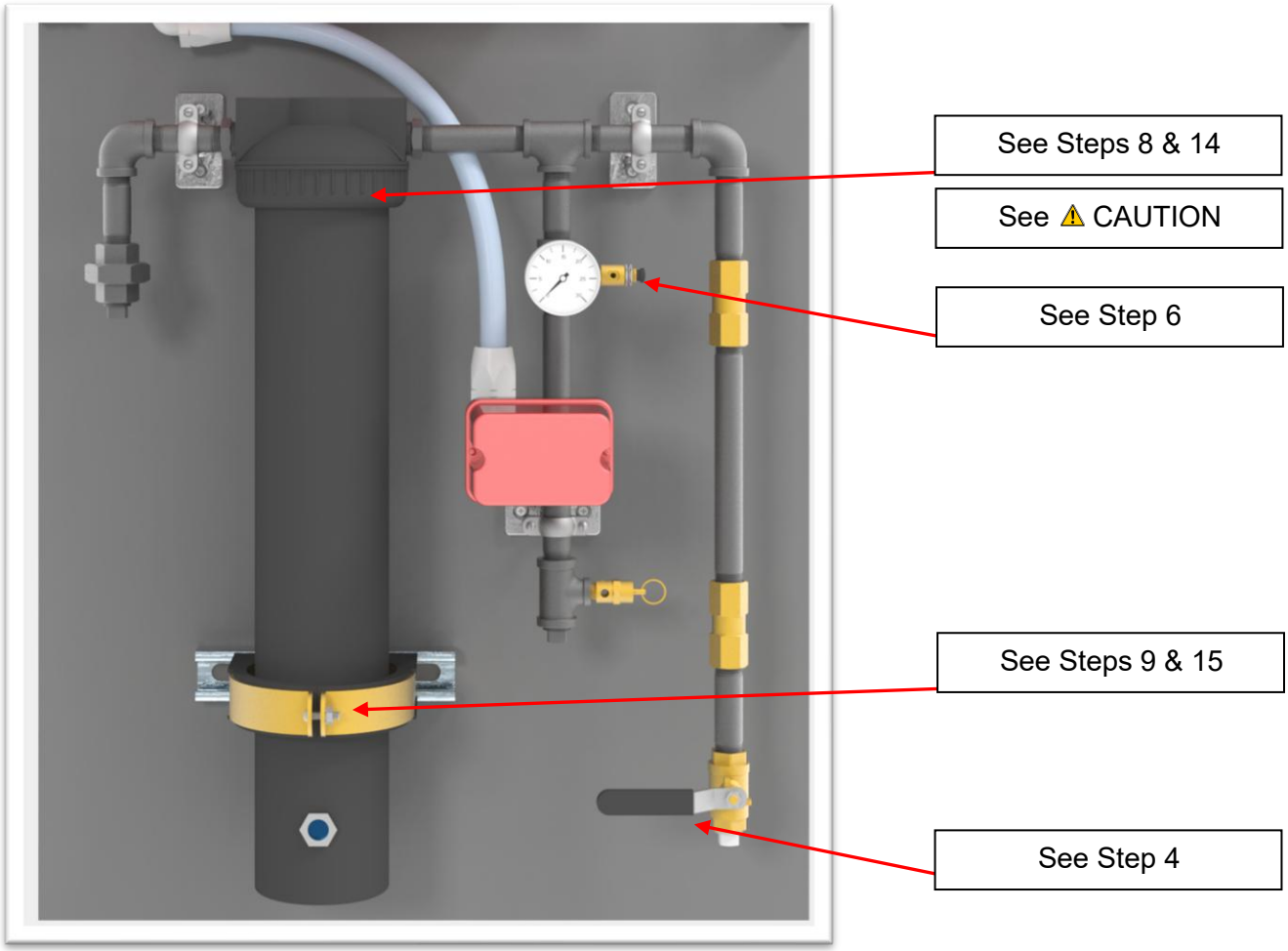

Figure 13 – **STANDPIPE-PAC™** SSS-100-XL1 Desiccant Air Dryer

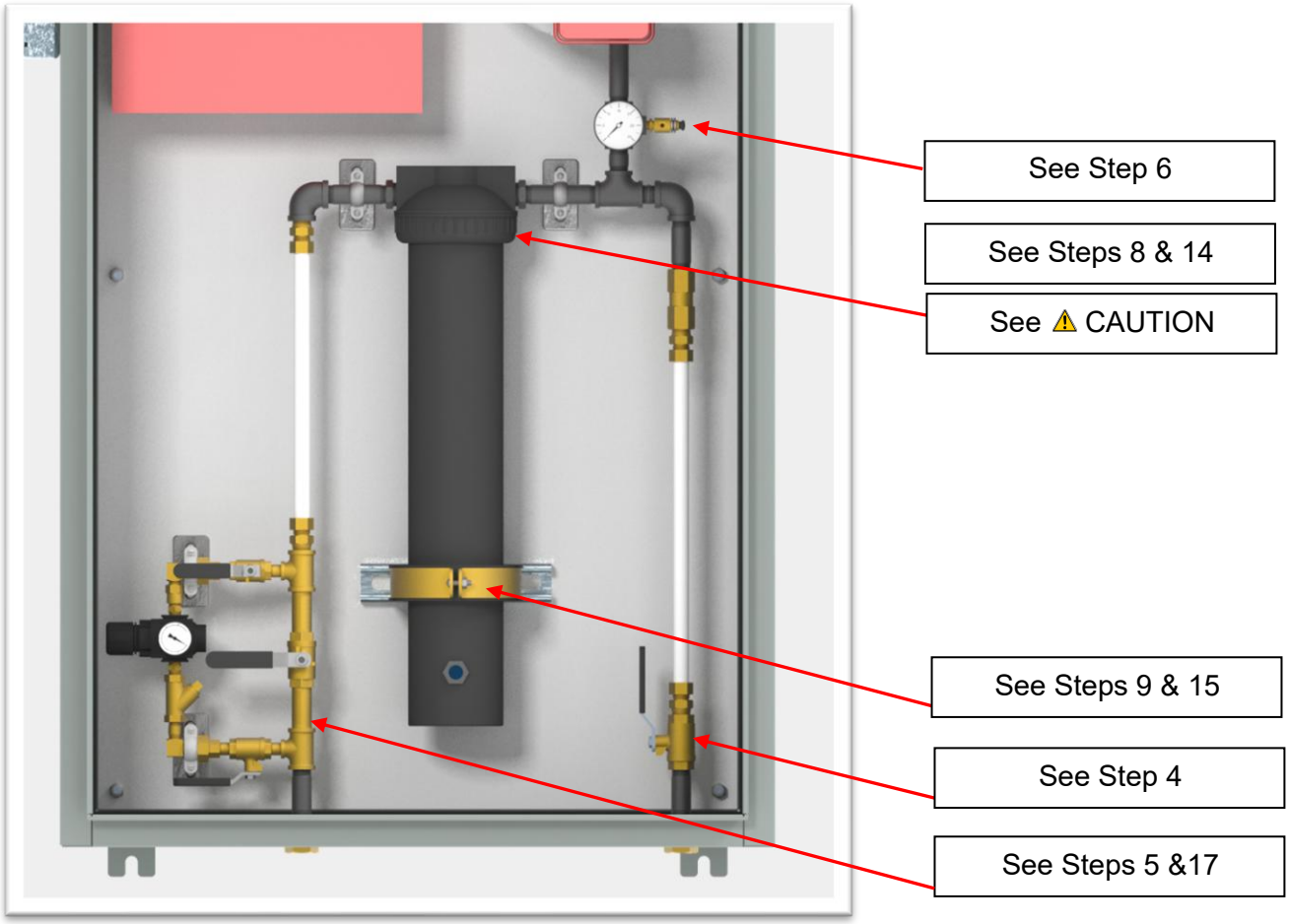

Figure 14 – **STANDPIPE-PAC™** SSS-100-XL1 Desiccant Air Dryer

6.3.2. (For Models XL2 & XL2-N) Maintaining the Refrigerated Dryer. Contact UFS for more information.

6.4. When quarterly maintenance is complete, sign and date the Quarterly Maintenance Tag. Enter date when next quarterly maintenance is due.

6.5. Troubleshooting.

Problem	Possible Cause	Solution	Manual Reference
No power to control panel or compressor.	Circuit breaker not on.	Turn circuit breaker on.	
	115 VAC not properly connected in junction box.	Properly connect power in junction box.	**3.3.5.3**
Control unit has no power when circuit breaker is turned OFF.	Battery not properly connected.	Properly connect battery.	**3.3.5.4**
	Battery is discharged.	Permit control unit to charge batteries for 24 hours.	
	Battery is not capable of holding charge.	Battery requires replacement – Contact UNITED Fire Systems or trained distributor for service.	
STANDPIPE-PAC™ does not build sufficient pressure in standpipe (less than 7 PSIG).	PMD valves closed	Ensure inlet ball valves are fully OPEN and bypass valve is CLOSED	**Appendix A**
	PMD regulator not set properly	Adjust regulator until gauge shows 15 PSIG.	**Appendix A**
	PMD regulator failure	Contact UNITED Fire Systems or trained distributor for service.	
	One or more outlet valves open.	Close all standpipe outlet valves.	
	Manual air release bleed valve open.	Close manual air release bleed valve.	
	Standpipe fitting connections are too leaky.	Inspect all fitting connections for tightness. Correct as necessary.	
	Compressor is improperly sized.	Verify internal volume of standpipe. Ensure that proper compressor has been chosen.	**Section 2**
	Automatic air compressor control switch failure.	DO NOT ATTEMPT ADJUSTMENT OR REPAIR OF SWITCH. Contact UNITED Fire Systems or trained distributor for service.	
STANDPIPE-PAC™ builds too much pressure in standpipe (above 23 PSIG).	PMD bypass valve open	Ensure inlet ball valves are fully OPEN and bypass valve is CLOSED	**Appendix A**
	PMD regulator not set properly	Adjust regulator until gauge shows 15 PSIG.	**Appendix A**
	PMD regulator failure	Contact UNITED Fire Systems or trained distributor for service.	
	Automatic air compressor control switch failure.	DO NOT ATTEMPT ADJUSTMENT OR REPAIR OF SWITCH. Contact UNITED Fire Systems or trained distributor for service.	

6.5. Troubleshooting (cont.).

STANDPIPE-PAC™ alarms too low (below 7 PSIG).	Low-limit pressure sensing switch requires adjustment.	DO NOT ATTEMPT ADJUSTMENT OR REPAIR OF SWITCH. Contact UNITED Fire Systems or trained distributor for service.	
STANDPIPE-PAC™ alarms too high (above 23 PSIG).	High-limit pressure sensing switch requires adjustment.	DO NOT ATTEMPT ADJUSTMENT OR REPAIR OF SWITCH. Contact UNITED Fire Systems or trained distributor for service.	
STANDPIPE-PAC™ does not alarm when manual air release bleed valve is opened.	Manual air release bleed valve cap is on.	Remove manual air release bleed valve cap.	
	Lockable shutoff valve is closed.	Open lockable shutoff valve.	
	Ice buildup in air dryer and unit piping.	Ensure that **STANDPIPE-PAC™** is installed in area where temperature cannot go below 32 degrees F.	
Color of beads in air dryer has changed	Air dryer beads have absorbed water to their capacity.	If beads are pink, contact UNITED Fire Systems or trained distributor for service.	

INSPECTION / MAINTENANCE CHECKLIST
STANDPIPE-PAC™ SUPERVISORY SYSTEM
UFS-236 REVISION 2.00 – PAGE 1 OF 2

DATE		Is this (check one):	Monthly Inspection		=or=	Quarterly Maintenance	

LOCATION INFORMATION	
User	
Address 1	
Address 2	
City, State, Zip	
System	

STANDPIPE-PAC UNIT SERIAL NUMBER	

STEP	INTERVAL	PROCEDURE	OK	NOT OK
1	Monthly	Is the unit installed in an area protected from outdoor elements?		
2	Monthly	Is the unit installed in a heated area, and is the temperature over +32°F?		
3	Monthly	Has the area where the unit is installed been checked for relative cleanliness?		
		Choose the phrase BEST describing the area where the unit is installed.		
		Relatively clean ☐ Somewhat dusty / dirty ☐ Very dusty / dirty ☐ Extremely dusty / dirty ☐		
4	Monthly	Has the color of the desiccant in the air dryer been checked?		
		Indicate below which color is the makes up the MAJORITY of the desiccant:		
		DARK BLUE ☐ **LIGHT BLUE** ☐ **PINK** ☐		
5	Quarterly	Has the air dryer desiccant been replaced with new desiccant?		
6	Quarterly	Has the compressor inlet filter been replaced with a new filter?		
7	Monthly	Has the Auxiliary Condensate Drain Device been properly used to remove water from the piping in the vicinity of the STANDPIPE-PAC™ ?		
8	Quarterly	Has the HIGH PRESSURE signal been checked?		
		1. Lockable shutoff valve CLOSED. / 2. Compressor disconnect switch ON.		
		3. Operate test / service device. / **Signal horn should sound at 23±1 PSIG**		
9	Quarterly	Has the LOW PRESSURE signal been checked?		
		1. Lockable shutoff valve CLOSED. / 2. Compressor disconnect switch OFF.		
		3. Operate test service device. / **Signal horn should sound at 7 ± 1 PSIG.**		
10	Monthly	Has the unit been left with the **GREEN** visual indicator for AC POWER **ON** and all other visual indicators **OFF**?		
11	Monthly	Has the compressor disconnect switch been left **ON**?		
12	Monthly	Is the pressure gage indicating between 13 and 18 PSIG?		
13	Monthly	Has the lockable outlet shutoff valve been left **OPEN** and locked?		
14	Monthly	Is the manual release bleed valve at each fire department connection **CLOSED** with cap and chain connected and tight?		
15	Monthly	Are all standpipe valves **CLOSED**?		

LIST ALL CORRECTIONS / REPAIRS MADE
LIST ALL CORRECTIONS / REPAIRS NEEDED
NOTES

	PRINT NAME	SIGNATURE	DATE
INSPECTOR			
CUSTOMER			

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APPENDIX A

INSTRUCTION SHEET

Pressure Maintenance Device for Fire Sprinkler Systems
Model **NAMD-1**

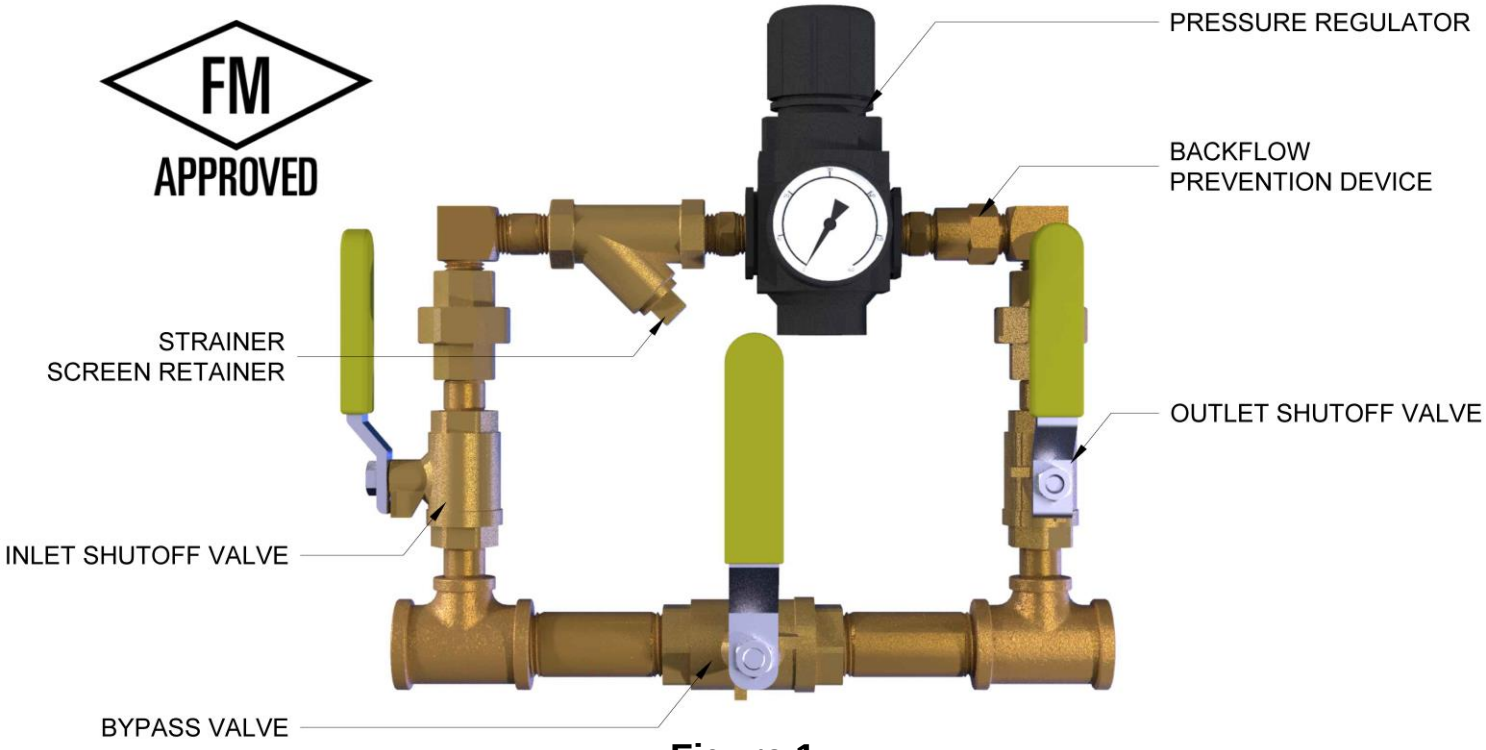

Figure 1

DESCRIPTION

The **UNITED Fire Systems** **Model NAMD-1** is an FM Approved device for controlling the nitrogen and / or air pressure in preaction and dry-pipe fire sprinkler piping. The device is equipped with a high-precision pressure regulator capable of providing accurate regulation over a wide range of inlet pressures and gas flows. This is especially important for sprinkler corrosion inhibiting systems supplying nitrogen to the sprinkler system, since most nitrogen systems provide less gas flow that a conventional air compressor.

SPECIFICATIONS

Model No.:	NAMD-1
Material (other than regulator):	Brass
Material (regulator body):	Zinc
Inlet:	1/2” NPT Female
Outlet:	1/2” NPT Female
Inlet Pressure Range:	0-175 PSIG (0-1200 kPa gauge)
Outlet Pressure Range:	15-60 PSIG (100-410 kPa gauge)
Maximum Pressure:	175 PSIG (1200 kPa)
Temperature Range:	-30°F to +150°F (-34°C to +65°C)
Dimensions (approx.):	9.75” L x 8.25” H (248 mm x 210 mm)
Weight (approx.):	7 lbs. (3.2 kg)

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INSTRUCTION SHEET

Pressure Maintenance Device for Fire Sprinkler Systems
Model **NAMD-1**

1. INSTALLATION INSTRUCTIONS – READ AND UNDERSTAND BEFORE INSTALLATION

IMPORTANT
DO NOT disassemble the **Model NAMD-1** device!

1.1. Install the **Model NAMD-1** device in the nitrogen / air pressure supply line to the sprinkler valve trim.
1.2. **UNITED Fire Systems** highly recommends installing one (1) **Model NAMD-1** device for each sprinkler valve.
1.3. The device may be installed in any orientation.
1.4. Install the device as close as possible to the sprinkler valve receiving the pressure.
1.5. Locate the device in as a convenient place as possible, where the ball valves may be easily operated and the pressure gauge observed.
1.6. If the rigidity of the inlet and outlet piping is sufficient, no additional bracketing should be necessary. Otherwise, use standard split ring hangers and hardware to attach the device to the wall or other solid mounting location.

IMPORTANT
The **Model NAMD-1** device is designed to operate in one direction only. Refer to **Figure 1** to positively identify the **INLET** and **OUTLET** ports of the device.

1.7. Attach the piping from the pressure source to the **INLET** of the device. Piping shall be 1/2" nominal pipe size minimum. Use Teflon tape on the male pipe threads of the pipe only. DO NOT permit pipe thread sealant to enter the device.
1.8. Attach the piping from the **OUTLET** of the device to the proper connection point on the sprinkler valve trim. Piping shall be 1/2" nominal pipe size minimum. Use Teflon tape on the male threads of the pipe only. DO NOT permit pipe thread sealant to enter the device.
1.9. Proceed to the **COMMISSIONING** instructions below.

2. COMMISSIONING

2.1. Ensure all three (3) ball valves on the **Model NAMD-1** device are **CLOSED**.
2.2. Determine proper supervisory pressure for the sprinkler valve which the device is connected to.
2.3. Pull pressure regulator adjustment knob UP.
2.4. Turn pressure regulator adjustment knob COUNTERCLOCKWISE to remove all force from the regulating spring.
2.5. Apply nitrogen pressure from sprinkler corrosion inhibiting system to the device inlet.
2.6. Leak check the piping from the pressure source to the Model NAMD-1 device. Piping should be as leak-free as possible. Correct all leaks before proceeding.
2.7. Gradually open inlet shutoff valve. Pressure gauge on the device pressure regulator should indicate pressure.

IMPORTANT
When adjusting pressure regulator, always approach the desired adjustment from a LOWER to a HIGHER pressure.

A. If pressure adjustment (as indicated on device pressure gauge) is LOW, turn pressure regulator adjustment knob CLOCKWISE to increase pressure to desired setting.

B. If pressure adjustment (as indicated on the device pressure gauge) is HIGH, turn pressure regulator adjustment knob COUNTERCLOCKWISE to reduce pressure 3-5 PSIG below desired setting, then turn knob CLOCKWISE to increase pressure to desired setting.

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2. COMMISSIONING (continued)

2.8. Turn pressure regulator adjustment knob clockwise until pressure gauge indicates 2-3 PSIG above the desired supervisory pressure determined in step 2.2.
2.9. Gradually open outlet shutoff valve. Nitrogen pressure will reach the sprinkler valve trim.
2.10. Leak check the piping from the **Model NAMD-1** device to the sprinkler valve trim. Piping should be as leak-free as possible. Correct all leaks before proceeding.
2.11 Check that pressure gauge continues to indicate 2-3 PSIG above supervisory pressure. Adjust if necessary.
2.12. Push pressure regulator adjustment knob DOWN.

3. OPERATION

Table 1 – Valve Positions

MODE	INLET Shutoff Valve	OUTLET Shutoff Valve	BYPASS Valve
No Gas Supply To Sprinkler Valve	Closed	Closed	Closed
Initial-Fill With Air	Closed	Closed	**OPEN**
Supply System With Nitrogen	**OPEN**	**OPEN**	Closed
DO NOT Operate	**OPEN**	**OPEN**	**OPEN**

4. INSPECTION AND MAINTENANCE

4.1 Monthly
4.1.1 Inspect the **Model NAMD-1** device valve position. Use Table 1 to verify that valve position is in accordance with desired MODE.
4.1.2 Inspect the pressure gauge. Verify that indicated pressure is 2-3 PSI above the desired supervisory pressure of the connected sprinkler valve. Refer to **2. COMMISSIONING** if regulator adjustment is required.

4.2 Annual At least annually, inspect and clean the device strainer screen.

DANGER
Ensure that **Model NAMD-1** device is completely depressurized before inspecting and cleaning the strainer screen. Failure to do so can result in death or serious personal injury!

IMPORTANT
When ball valves have been CLOSED, the nitrogen / air supply is not available to pressurize the sprinkler system piping. Take required precautions to prevent inadvertent sprinkler valve operation. Notify applicable personnel of possible “low air” signals.

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4. INSPECTION AND MAINTENANCE (Continued)

4.2 Annual (Continued)

4.2.1 Ensure there is no pressure present in the **Model NAMD-1** device.
4.2.2 Hold device so that torque applied to strainer screen retainer does not move the device.
4.2.3 Refer to **Figure 1.** Apply suitable wrench to HEX on strainer screen retainer. Do NOT remove square plug.
4.2.4 Remove strainer screen retainer. Retain for replacement.
4.2.5 Examine rubber seal on strainer screen retainer. If damaged during removal, leakage may occur.
4.2.6 Remove strainer. Empty any loose material, and then flush with clean water. If necessary, use a wire brush to remove trapped particles. Dry strainer screen thoroughly before replacement.
4.2.7 If strainer screen is damaged, replace with new strainer screen UFS P/N 30-500003-401.
4.2.8 Insert strainer screen.
4.2.9 Replace strainer screen retainer, tightening wrench-tight.
4.2.10 See 2. COMMISSIONING to return Model NAMD-1 device to service.
4.2.11 Leak check the strainer screen retainer / strainer body connection. Correct leak if necessary.

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APPENDIX B

POTTER
The Symbol of Protection

PS15

Supervisory Pressure Switch

Features

- Two switch model
- Independent switch adjustment, no tools needed
- Two 1/2” conduit / cable entrances
- Separate isolated wiring chambers
- Non-corrosive pressure connection
- Non-Conductive Enclosure
- VdS version available

NOTICE

This document contains important information on the installation and operation of PS15 pressure switches. Please read all instructions carefully before beginning installation. A copy of this document is required by NFPA 72 to be maintained on site.

Installation

The Potter PS15 Series Supervisory Pressure Actuated Switches are designed primarily to detect an increase and/or decrease from normal system pressure in automatic fire sprinkler systems. Typical applications are: air/nitrogen supervision in Dry pipe and pre-action systems, pressure tanks, air supplies, and water supplies. The PS15 has two switches. The Low switch is factory set to activate at approximately 10 psi (0,35 bar) on a decrease in pressure. The High switch is factory set to activate at approximately 20 psi (1,4 bar) on an increase in pressure. See section heading Adjustments and Testing if other than factory set point is required.

1. Connect the PS15 to the system side of any shutoff or check valve.
2. Apply Teflon tape to the threaded male connection on the device. (Do not use pipe dope)
3. Device should be mounted in the upright position. (Threaded connection down)
4. Tighten the device using a wrench on the flats on the device.

Wiring Instructions

1. Remove the tamper resistant screw with the special key provided.
2. Carefully place a screwdriver on the edge of the knockout and sharply apply a force sufficient to dislodge the knockout plug. See Fig. 9.
3. Run wires through an approved conduit connector and affix the connector to the device. A NEMA-4 rated conduit fitting is required for outdoor use.
4. Connect the wires to the appropriate terminal connections for the service intended. See Figures 2,4,5 and 6. See Fig. 7 for two switch one conduit wiring.

Technical Specifications

Conduit Entrances	Two knockouts provided for 1/2” conduit. Individual switch compartments and ground screw suitable for dissimilar voltages
Contact Ratings	SPDT (Form C) 10.1 Amps at 125/250VAC, 2.0 Amps at 30VDC
Cover Tamper	Cover incorporates tamper resistant fastener that requires a special key for removal. One key is supplied with each device.
Differential	Typical 1 lb. at 5 psi (,07 at 0,34 bar) 3 lbs at 30 psi (,21 at 2,1 bar)
Dimensions	3.78”(9,6cm)Wx3.20”(8,1cm)Dx4.22”(10,7cm)H
Enclosure	Cover: Weather/UV/Flame Resistant High Impact Composite Base: Die Cast All parts have corrosion resistant finishes
Environmental Limitations	NEMA 4/IP66 Rated Enclosure - indoor or outdoor when used with NEMA 4 conduit fittings. Temperature range: -40°F to 140°F (-40°C to 60°C)
Factory Adjustment	LOW switch operates at approximately 10 psi (0,7 bar) on decreasing pressure. HIGH switch operates at approximately 20 psi (1,4 bar) on increasing pressure
Maximum System Pressure	300 psi (20,68 bar)
Pressure Connection	Nylon 1/2” NPT male
Pressure Range	5-30 psi (0,35 - 2,07 bar)
Service Use	NFPA 13, 13D, 13R, 72

*Specifications subject to change without notice.

Adjustment and Testing

The operation of the pressure supervisory switch should be tested upon completion of installation and periodically thereafter in accordance with the applicable NFPA codes and standards and/or the authority having jurisdiction (manufacturer recommends quarterly or more frequently).

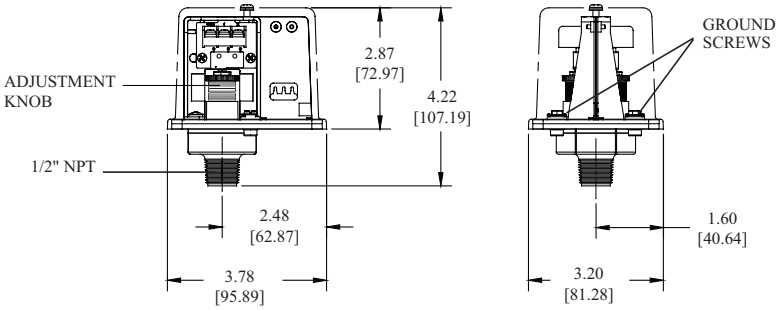
Note: Testing the PS15 may activate other system connected devices.

The use of a Potter BVL (see product bulletin 5400799 for details) is recommended to facilitate setting and testing of the PS15 pressure switch. When a BVL (bleeder valve) is used, the pressure to the switch can be isolated and bled from the exhaust port on the BVL without affecting the supervisory pressure of the entire system. See Fig. 3

The operation point of the PS15 Pressure Switch can be adjusted to any point between 5 and 30 psi (0,35 - 2,07 bar) by turning the adjustment knob(s) clockwise to raise the actuation point and counter clockwise to lower the actuation point. In the case of the PS15-2, both switches operate independently of each other. Each switch may be independently adjusted to actuate at any point across the switch adjustment range. Initial adjustment can be made with a visual reference from the top of the adjustment knob across to the printed scale on the switch bracket. Final adjustments should be verified with a pressure gauge.

Dimensions

Fig 1

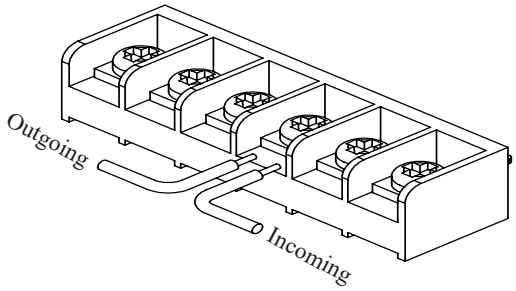


NOTE: To prevent leakage, apply Teflon tape sealant to male threads only.

DWG# 930-1

Switch Clamping Plate Terminal

Fig 2

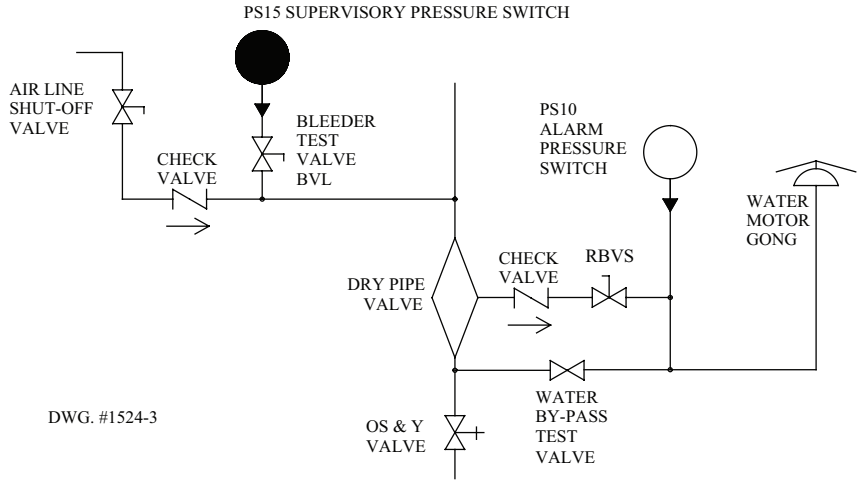


⚠ WARNING

An uninsulated section of a single conductor should not be looped around the terminal and serve as two separate connections. The wire must be severed, thereby providing supervision of the connection in the event that the wire becomes dislodged from under the terminal.

Typical Sprinkler Applications

Fig 3

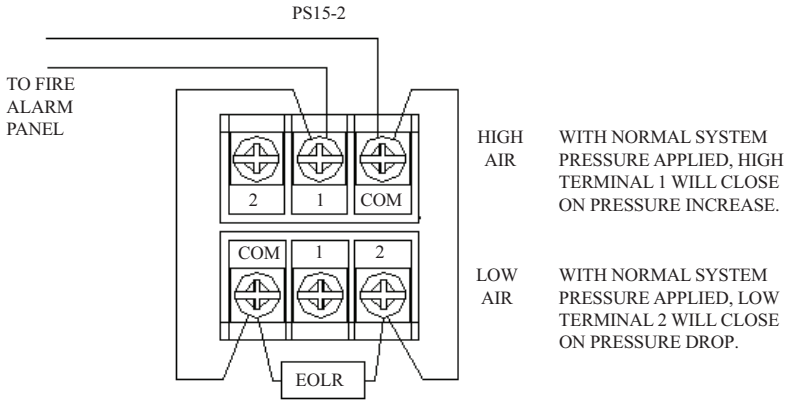


⚠ CAUTION

Closing of any shutoff valves between the alarm check valve and the PS10 will render the PS10 inoperative. To comply with IBC, IFC, and NFPA-13, any such valve shall be electrically supervised with a supervisory switch such as Potter Model RBVS.

Typical Connections

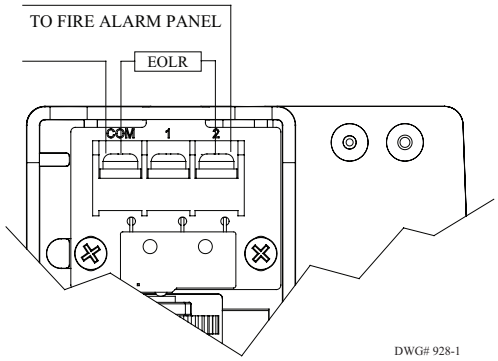
Fig 4



DWG# 1524-4

Low Pressure Signal Connection

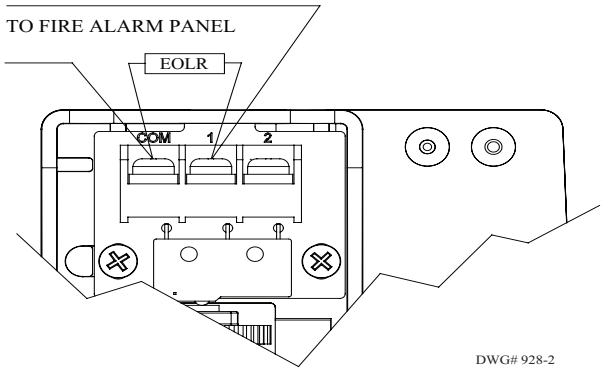
Fig 5



DWG# 928-1

High Pressure Signal Connection

Fig 6

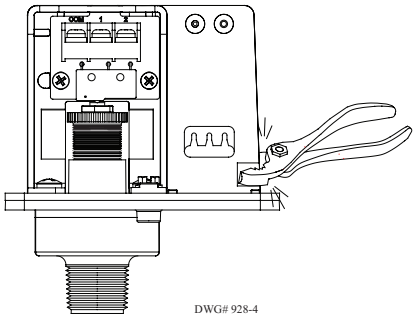


DWG# 928-2

One Conduit Wiring

Fig 7

Break out thin section of divider to provide path for wires when wiring both switches from one conduit entrance.

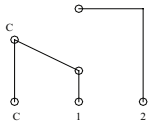


DWG# 928-4

Changing Pressure

Fig 8

Low Pressure Switch

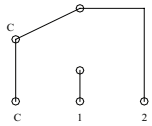


Terminal

C: Common

1. Closed when installed under normal system Pressure.
2. Open when installed under normal system pressure. Closes on pressure drop. Use for low air signal.

High Pressure Switch

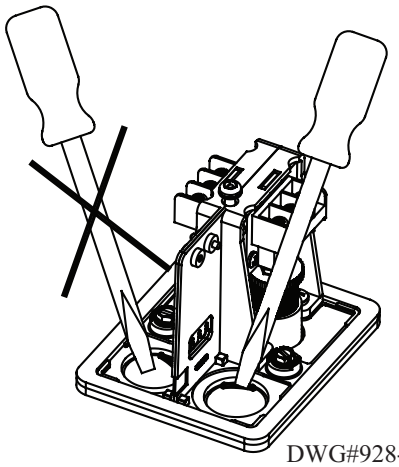


Terminal

1. Open when installed under normal system pressure. Closes on increase in pressure. Use for high air signal.
2. Closed under normal system pressure.

Removing Knockouts

Fig 10



DWG#928-5

Engineer/Architect Specifications Pressure Type Waterflow Switch

Pressure type supervisory switches; shall be a Model PS15 as manufactured by Potter Electric Signal Company, St. Louis, MO., and shall be installed on the fire sprinkler system as shown and or specified herein.

Switches shall be provided with a 1/2" NPT male pressure connection to be connected into the air supply line on the system side of any shut-off valve. A Model BVL bleeder valve as supplied by Potter Electric Signal Company of St. Louis, MO., or equivalent shall be connected in line with the PS15 to provide a means of testing the operation of the supervisory switch. (See Fig. 3)

The switch unit shall contain SPDT (Form C) switch(es). The low switch shall be factory set to activate at 10 psi (0,7 bar) on pressure decrease. The high switch shall be factory set to activate at 20 psi (1,4 bar) on a pressure increase.

Switch contacts shall be rated at 10.1 Amps at 125/250VAC and 2.0 Amps at 30VDC. The units shall have a maximum pressure rating of 300 psi (20,68 bar) and shall be adjustable from 5 to 30 psi (0,35 to 2,07 bar).

Pressure switches shall have two conduit entrances, one for each individual switch compartment to facilitate the use of dissimilar voltages for each individual switch.

The cover of the pressure switch shall be Weather/UV/Flame Resistant High Impact Composite with rain lip and shall attach with one tamper resistant screw. The pressure switch shall be suitable for indoor or outdoor service with a NEMA-4/IP66 rating.

The pressure switch shall be UL, cUL, and CSFM listed, FM approved, LPCB Approved, and NYMEA accepted.

⚠ WARNING

- Installation must be performed by qualified personnel and in accordance with all national and local codes and ordinances.
- Shock hazard. Disconnect power source before servicing. Serious injury or death could result.
- Read all instructions carefully and understand them before starting installation. Save instructions for future use. Failure to read and understand instructions could result in improper operation of device resulting in serious injury or death.
- Risk of explosion. Not for use is hazardous locations. Serious injury or death could result.

⚠ CAUTION

- Do not tighten by grasping the switch enclosure. Use wrenching flats on the bushing only. Failure to install properly could damage the switch and cause improper operation resulting in damage to equipment and property.
- To seal threads, apply Teflon tape to male threads only. Using joint compounds or cement can obstruct the pressure port inlet and result in improper device operation and damage to equipment.
- Do not over tighten the device, standard piping practices apply.

Ordering Information

Model	Description	Part Number
PS15-2	Pressure switch with two sets SPDT contacts	1340415
Hex Key		5250062
Cover Tamper Switch Kit		0090200
BVL	Bleeder Valve	1000018

Tamper

Cover incorporates tamper resistant fastener that requires a special key for removal. One key is supplied with each device. For optional cover tamper switch kit, order Stock No. 0090200. See bulletin #5401200 PSCTSK.

NOTICE

Pressure switches have a normal service life of 10-15 years. However, the service life may be significantly reduced by local environmental conditions.

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APPENDIX C

Fire Alarm Communicator
411UDAC
Manual

Document 51073
6/27/2014 Rev: F
P/N 51073:F ECN 14-545

Fire Alarm & Emergency Communication System Limitations

While a life safety system may lower insurance rates, it is not a substitute for life and property 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 panel (FACP) 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.

An emergency communication system—typically made up of an automatic fire alarm system (as described above) and a life safety communication system that may include an autonomous control unit (ACU), local operating console (LOC), voice communication, and other various interoperable communication methods—can broadcast a mass notification message. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire or life safety event.

The Manufacturer recommends that smoke and/or heat detectors be located throughout a protected premises 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 the Guide for Proper Use of System Smoke Detectors, which is made available at no charge to all installing dealers. This document can be found at http://www.systemsensor.com/appguides/. A study by the Federal Emergency Management Agency (an agency of the United States government) indicated that smoke detectors may not go off in as many as 35% of all fires. While fire alarm systems are designed to provide early 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:

Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in or behind walls, on 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.

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, chimneys, even wet or humid areas 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, such as air conditioning vents.
- Smoke particles may be drawn into air returns before reaching the detector.

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 photoelectronic 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 cannot be expected to provide adequate warning of fires caused by arson, children playing with matches (especially in bedrooms), smoking in bed, and violent explosions (caused by escaping gas, improper storage of flammable materials, etc.).

Heat detectors do not sense particles of combustion and alarm only when heat on their sensors increases at a predetermined rate or reaches a predetermined level. 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. Heat detectors are designed to protect property, not life.

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, compromising its ability to report a fire.

Audible warning devices such as bells, horns, strobes, speakers and displays 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. Any warning device may fail to alert people with a disability or those who have recently consumed drugs, alcohol, or medication. Please note that:

- An emergency communication system may take priority over a fire alarm system in the event of a life safety emergency.
- Voice messaging systems must be designed to meet intelligibility requirements as defined by NFPA, local codes, and Authorities Having Jurisdiction (AHJ).
- Language and instructional requirements must be clearly disseminated on any local displays.
- Strobes can, under certain circumstances, cause seizures in people with conditions such as epilepsy.
- Studies have shown that certain people, even when they hear a fire alarm signal, do not respond to or comprehend the meaning of the signal. Audible devices, such as horns and bells, can have different tonal patterns and frequencies. 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 them on the proper reaction to alarm signals.
- In rare instances, the sounding of a warning device can cause temporary or permanent hearing loss.

A life safety system will not operate without any electrical power. If AC power fails, the system will operate from standby batteries only for a specified time and only if the batteries have been properly maintained and replaced regularly.

Equipment used in the system may not be technically compatible with the control panel. It is essential to use only equipment listed for service with your control panel.

Telephone lines needed to transmit alarm signals from a premises to a central monitoring station may be out of service or temporarily disabled. For added protection against telephone line failure, backup radio transmission systems are recommended.

The most common cause of life safety system malfunction is inadequate maintenance. To keep the entire life safety 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 NFPA 72 shall be followed. Environments with large amounts of dust, dirt, or high air velocity require more frequent maintenance. A maintenance agreement should be arranged through the local manufacturer's representative. Maintenance should be scheduled monthly or as required by National and/or local fire codes and should be performed by authorized professional life safety system installers only. Adequate written records of all inspections should be kept.

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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 at 0-49º C/32-120º F and at a relative humidity . 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 15-27º C/60-80º 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. Overtightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

This system contains 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.

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FCC Warning

WARNING: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual may cause interference to radio communications. It has been tested and found to comply with the limits for class A computing devices pursuant to Subpart B of Part 15 of FCC Rules, which is designed to provide reasonable protection against such interference when devices are operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user will be required to correct the interference at his or her own expense.

Canadian Requirements

This digital apparatus does not exceed the Class A limits for radiation noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicables aux appareils numeriques de la classe A prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.

Software Downloads

In order to supply the latest features and functionality in fire alarm and life safety technology to our customers, we make frequent upgrades to the embedded software in our products. To ensure that you are installing and programming the latest features, we strongly recommend that you download the most current version of software for each product prior to commissioning any system. Contact Technical Support with any questions about software and the appropriate version for a specific application.

Documentation Feedback

Your feedback helps us keep our documentation up-to-date and accurate. If you have any comments or suggestions about our online Help or printed manuals, you can email us.

Please include the following information:

- Product name and version number (if applicable)
- Printed manual or online Help
- Topic Title (for online Help)
- Page number (for printed manual)
- Brief description of content you think should be improved or corrected
- Your suggestion for how to correct/improve documentation

Send email messages to:

FireSystems.TechPubs@honeywell.com

Please note this email address is for documentation feedback only. If you have any technical issues, please contact Technical Services.

Table of Contents

This digital communicator/transmitter has been designed to comply with standards set forth by the following regulatory agencies:

- Underwriters Laboratories
- NFPA National Fire Protection Association

Before proceeding, the installer should be familiar with the following documents.

NFPA Standards

Central Station Signaling Systems Protected Premises Unit (Automatic, Manual and Waterflow)

Proprietary Fire Alarm Systems (Protected Premises Unit)

Remote Station Fire Alarm Systems

Automatic Fire Detectors

Installation, Maintenance and Use of Notification Appliances for Fire Alarm Systems

Inspection, Testing and Maintenance for Fire Alarm Systems

Underwriters Laboratories Documents:

UL 217 Smoke Detectors, Single and Multiple Station

UL 268 Smoke Detectors for Fire Protective Signaling Systems

UL 346 Waterflow Indicators for Fire Protective Signaling Systems

UL 464 Audible Signaling Appliances

UL 521 Heat Detectors for Fire Protective Signaling Systems

UL 864 Standard for Control Units for Fire Protective Signaling Systems

UL 1481 Power Supplies for Fire Protective Signaling Systems

UL 1635 Digital Alarm Communicator System Units

UL 1638 Visual Signaling Appliances

UL 1971 Signaling Devices for Hearing Impaired

Other:

NEC Article 250 Grounding

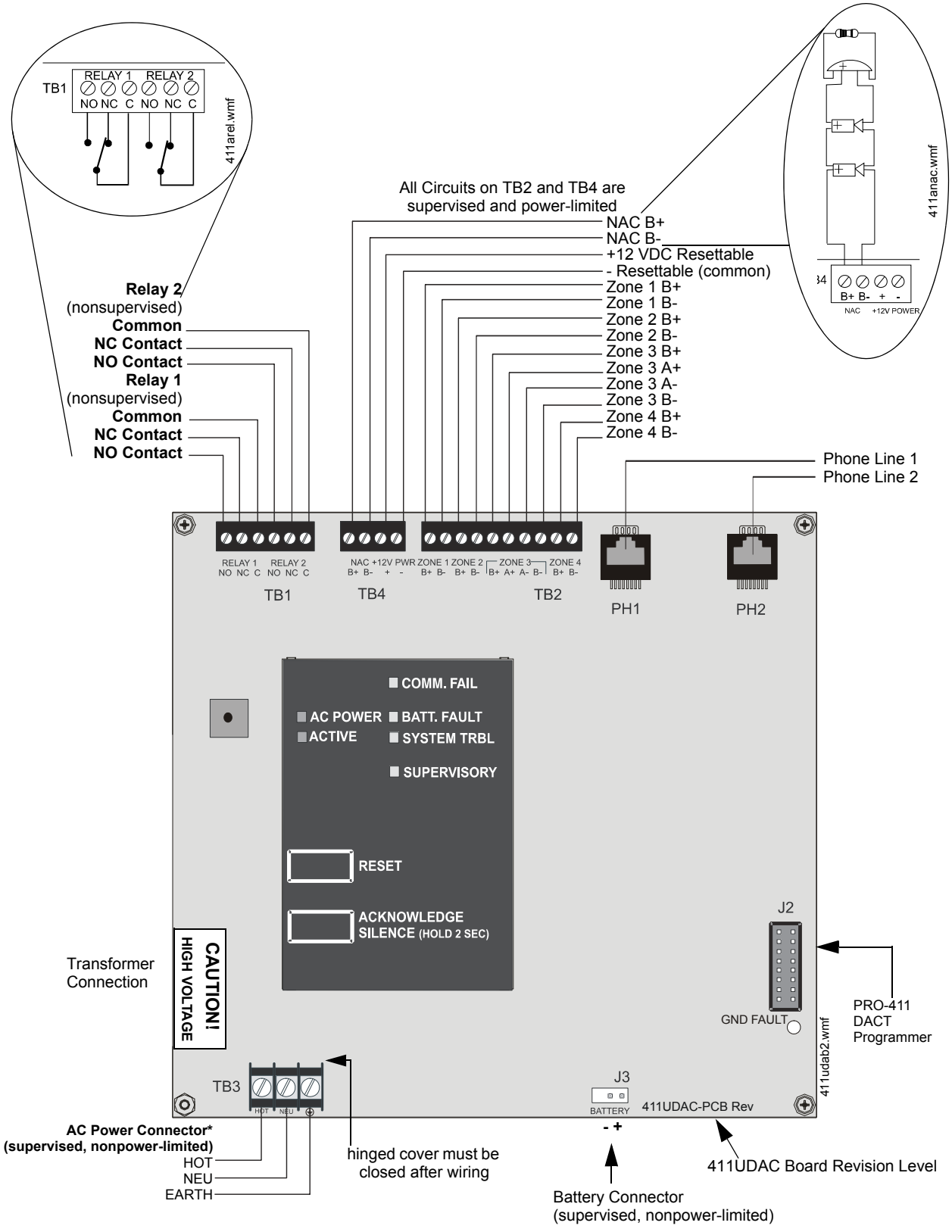
NEC Article 300 Wiring Methods

NEC Article 760 Fire Protective Signaling Systems

Applicable Local and State Building Codes

Requirements of the Local Authority Having Jurisdiction (LAHJ)

This product has been certified to comply with the requirements in the Standard for Control Units and Accessories for Fire Alarm Systems, UL 864, 9th Edition. Operation of this product with products not tested for UL 864, 9th Edition has not been evaluated. Such operation requires the approval of the local Authority Having Jurisdiction (AHJ).



CAUTION: AC POWER TERMINAL LAYOUT CHANGE
USE CAUTION WHEN WIRING AC POWER TO THE 411UDAC AS TERMINAL LAYOUT HAS CHANGED ON TB3!!

Section 1: Product Description

The 411UDAC is a fire alarm communicator with four input/channels and dual telephone lines. The four inputs use conventional input devices. The 411UDAC accepts waterflow devices, two-wire smoke detectors, four-wire smoke detectors, pull stations and other normally-open contact devices. The unit also supervises AC voltage, telephone line input voltage/current, battery level and battery charger operation.

Outputs include one supplementary NAC (Notification Appliance Circuit), two programmable Form-C relays and 12 VDC resettable special application power. The 411UDAC interfaces with the public switched telephone network and is compatible with most central station receivers. A total of fifteen popular communications formats are supported, including the industry standard Ademco Contact ID. *The communicator also contains a unique DACT option that eliminates 'dialer runaway'. It restricts the transmission of any intermittent nuisance fault to 10 attempts in a 24 hour period.*

Accessories include the Fire-Watch 411 Series DACT Programmer (Model PRO-411) as well as the PK-411UD Windows® -based remote site programming software. The 411UDAC is supplied with a compact metal cabinet.

The digital communicator can be programmed or interrogated off-site via the public switched telephone network. Any IBM compatible personal computer with Windows® XP or greater, with a 1200 baud Hayes® compatible modem and Upload/Download software P/N PK-411UD, may serve as a service terminal.

1.1 Product Features

Figure 1.1 411UDAC Digital Communicator

- Four input/channels - three fixed Style B (Class B) and one Style D (Class A) or Style B (Class B)
- Programmable input channels
  - ✓ 2 or 4-wire smoke (Inputs 1 & 3 only)
  - ✓ pull station
  - ✓ normally-open contact
  - ✓ host panel trouble (Slave Mode)
  - ✓ supervisory
  - ✓ supervisory autoresettable
  - ✓ waterflow (silenceable)
  - ✓ waterflow (nonsilenceable)
- One Style Y (Class B) NAC (supplementary application)
- Dual telephone lines
  - ✓ Dual telephone line voltage detect
  - ✓ Alternating phone lines for 24 hour test messages
- 12 VDC operation
- Alarm Verification
- Signal Silence Inhibit
- Autosilence
- Trouble Reminder
- Trouble Resound - troubles will resound the buzzer every 24 hours at midnight until the trouble is cleared
- Optional TR-6 Series Trim Ring
- 20-digit central station and service terminal telephone numbers
- NAC coding per ANSI S-3.41 (Temporal Coding)

- Separate external keypad and display
  - ✓ provides means of programming 411UDAC in program mode
  - ✓ provides means of testing input/output circuits (including telephone connections) in Troubleshoot Mode
- Compact in size 14.5" (36.83 cm) high X 12.875" (32.7 cm) wide X 4.5" (11.43 cm) deep metal cabinet
- Communicates vital status of monitored control panel (Slave Mode):
  - ✓ fire alarm
  - ✓ host control panel trouble
  - ✓ fire supervisory
  - ✓ AC (mains) power loss (programmable)
  - ✓ other
- Communicates vital status of 411UDAC:
  - ✓ digital communicator troubles
  - ✓ telephone Line 1 and 2 voltage fault
  - ✓ Primary Central Station number communication fault
  - ✓ Secondary Central Station number communication fault
  - ✓ system off-normal (local Program Mode entered)
  - ✓ 24 Hour normal test
  - ✓ 24 Hour abnormal test (24 hour test message with previously reported alarm or trouble still active)
- Individual LEDs for:
  - ✓ AC Power
  - ✓ System Trouble
  - ✓ Input Active
  - ✓ Supervisory
  - ✓ Communication Fail
  - ✓ Battery Trouble
  - ✓ Earth Fault
- Local piezo sounder with separate and distinct sounds for the various conditions
- Acknowledge/System Silence switch - 1st press silences local piezo sounder, 2nd press silences NAC
- Reset switch
- Real time clock
- Two Form-C relays, fully programmable to activate for the following conditions:
  - ✓ fire alarm
  - ✓ host control panel trouble
  - ✓ fire supervisory (latching)
  - ✓ fire supervisory (autoresettable)
  - ✓ total communication failure
  - ✓ DACT trouble (factory default for relay)
- Optional PK-411UD Remote Upload/Download Kit
- 'Dialer runaway' feature
- User selectable restoral methods

1.2 Specifications

AC Power - TB3

120 VAC, 60 Hz, 0.7 amps
Wire size: minimum 14 AWG (2.00 mm^2) with 600V insulation
Supervised, nonpower-limited

Battery (lead acid only) - J3

Maximum Charging Circuit: Float charge - 13.6V @ 3.15 amps
Maximum Charger Capacity: 14 Amp Hour battery
Supervised, nonpower-limited

Channels/Inputs - TB2 Terminals 1 through 10

Programmable Channels 1 through 4
Power-limited circuitry
Fully supervised (monitored for opens, shorts and earth fault)
Nominal Operating Voltage: 12.0 VDC (ripple = 400 mV maximum)
End-of-Line Resistor: 2.2K ohms, ½ watt (P/N 27070 UL listed)
Operation for each channel:

- Channel/Input 1, Style B (Class B) 2 or 4-wire smoke detector input and Channel/Input 3, Style B (Class B) 2 or 4-wire smoke detectors or waterflows or Style D (Class A) waterflow input:

  Alarm Current: 11 mA
  Short Circuit Current: 24 mA maximum
  Maximum Detector Current in Standby: 2.0 mA
  Maximum Loop Resistance: 30 ohms
  Detector Loop Current is sufficient to ensure operation of a minimum of one alarmed detector per zone
  Standby Current: 5.17 mA (including End-of-Line Resistor)

- Channel/Input 2 and Channel/Input 4 - Style B (Class B) contact closure input:

  Short Circuit Current: 4.46 mA maximum
  Maximum Loop Resistance: 100 ohms
  Standby Current: 2.66 mA
  Refer to the *Device Compatibility Document* for listed compatible devices.

Notification Appliance Circuit - TB4 Terminals 1(+) & 2(-)

The 411UDAC Notification Appliance Circuit may only be used to supplement host panel NACs
Style Y (Class B) power-limited and supervised circuit (monitored for opens, shorts, and earth fault)
Maximum voltage drop in wiring: 2.0 VDC
Operating voltage nominal 13.8 VDC
Current for all external devices: 1.0 amp
End-of-line resistor: 2.2K ohms, ½ watt (P/N 27070)
Refer to the *Device Compatibility Document* for listed compatible devices

Two Form-C Relays - TB1 Terminals 1 through 6

Operating voltage nominal 12 VDC
Contact rating: 2.0 amps @ 30 VDC (resistive) or 0.5 amps @ 30 VAC (resistive)
Non-supervised

12 VDC Resettable Special Application Power - TB4 Terminals 3(+) and 4(-)

Operating voltage nominal 12 volts
Maximum ripple voltage: 10 mV_{RMS}
Up to 200 mA is available for powering 4-wire smoke detectors
Power-limited and supervised with a UL-listed power supervision relay

For power supply and battery calculations, refer to Section 6.

1.3 Circuits

The 411UDAC circuit board contains a MicroController Unit (MCU), dual modular phone line jacks, piezo sounder, and connectors for input, output and power wiring. A piezo silence switch and reset switch are provided on the membrane panel which plugs into connector J7 on the main circuit board.

1.3.1 Channels/Inputs

Four input channels are provided on the 411UDAC. The 411UDAC can be used to monitor a host FACP (Fire Alarm Control Panel) in Slave Mode or as a stand-alone FAC (Fire Alarm Communicator). Each input can be programmed to monitor the following conditions:

- fire alarm activation
- 2 or 4-wire smoke (channels 1 & 3 only)
- pull station
- normally open contact device
- waterflow
- trouble activation
- fire supervisory activation

1.3.2 Notification Appliance Circuit

One Style B NAC (Notification Appliance Circuit) requiring a 2.2K ohm End-of-Line resistor. This NAC can only be used to supplement host panel NACs.

1.3.3 Output Circuits

- Modular jacks are used to interface the primary and secondary phone lines to the public telephone network. Phone lines are fully supervised at all times (if communication is enabled).
- 12 volt resettable special application power output (200 mA)
- 12 volt battery charger will charge up to 14 AH batteries

1.3.4 Auxiliary Relays

Two dry Form-C relays, with contacts rated for 2.0 amps @ 30 VDC (resistive) or 0.5 amps @ 30 VAC (resistive), are installed on the main circuit board. Each relay is programmable for:

- ✓ Alarm
- ✓ Fire supervisory - latching
- ✓ Fire supervisory - autoresettable
- ✓ Host panel trouble
- ✓ DACT trouble
- ✓ Total communications failure

1.3.5 Earth Ground

Connect a separate earth ground wire to ground stud in backbox for transient protection (refer to Figure 2.3 on page 21 for location of stud).

1.4 Controls and Indicators

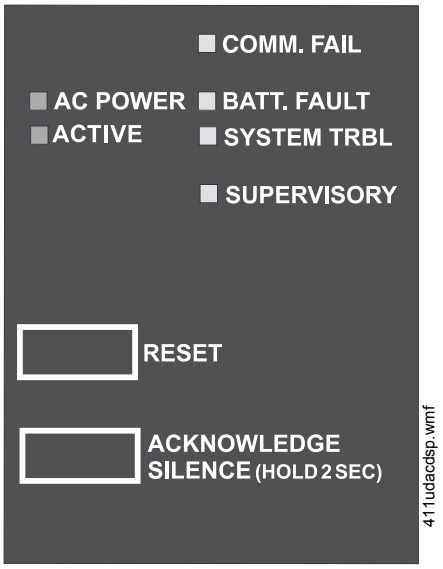


Figure 1.2 411UDAC Controls and Indicators

Front Panel Switch

- Reset Switch - to reset 411UDAC circuits
- Acknowledge/System Silence Switch
  - press once to acknowledge alarm or trouble (silence local 411UDAC piezo sounder and change all flashing LEDs to steady on)
  - press a second time and hold for minimum of two seconds to perform a System Signal Silence (silence Notification Appliance Circuit)

411UDAC Piezo Sounder

- The 411UDAC piezo sounder is used to locally annunciate DACT alarms and troubles. DACT troubles include input channel open circuit, NAC fault, phone line 1 or 2 voltage fault, phone number 1 or 2 communication fault and total communication failure. Separate and distinct sounds are provided for the following conditions:
  - ✓ alarm - steady On
  - ✓ trouble - 1 second On and 1 second Off
  - ✓ supervisory - ½ second On and ½ second Off

Front Panel Indicator

- AC Power - green LED
- Input Active - red LED
- Communication Fail - yellow LED
- System Trouble - yellow LED
- Supervisory - yellow LED
- Battery Trouble - yellow LED

Circuit Board Indicator

- Earth Fault - yellow LED (indicates zero impedance between panel and earth ground)

1.5 Components and Accessories

Main Circuit Board

The main circuit board contains the system's MCU (microcontroller unit), power supply, other primary components and wiring interface connectors. The main circuit board is shipped in the same carton as the cabinet but is not mounted in the cabinet. The circuit board should be installed only after the cabinet is mounted to the wall and the area is clean and free of potential contaminants.

Cabinet

The cabinet is red and measures 14.5" (36.83 cm) high X 12.875" (32.7 cm) wide X 4.5" (11.43 cm) deep. It provides space for up to two 7 Amp Hour batteries which must be ordered separately. A supplied bezel must be installed in the door opening.

Trim Ring

An optional Trim Ring (P/N TR-6-R) is available for the backbox. The Trim Ring provides a finished appearance for a semi-flush mounted panel.

Transformer Assembly

One transformer is shipped with the 411UDAC assembly, pre-mounted to the cabinet.

Fire•Watch 411 Series DACT Programmer (Model PRO-411)

The PRO-411 is an optional DACT programmer which can be used to troubleshoot and program the 411UDAC, as well as access the various modes of operation. The PRO-411 must be ordered separately.

PK-411UD Upload/Download Software Kit

The optional PK-411UD Kit consists of the PK-411UD Upload/Download software on CD and the PK-411UD Program Manual. The PK-411UD enables a user to program the 411UDAC off site via the public switched telephone network using any personal computer with Windows® XP or greater and a 1200 baud Hayes® compatible modem.

1.6 Digital Communicator Operation

The 411UDAC has been designed to be compatible with a wide variety of fire alarm, nonfire and combination control panels (Slave Mode operation). Numerous formats are also available for communication to a central station. Two modular phone jacks allow easy connection to telephone lines. Modular jacks are labeled PH1 and PH2 for the Primary and Secondary phone lines. The digital communicator provides the following functions:

- Line Seizure- takes control phone lines, disconnecting any premise phones which may be using the same lines
- Off/On-Hook - perform on and off-hook status to phone lines
- Listen for dial tone - 440 hertz tone typical in most networks
- Dialing the Central Station(s) phone number - default is Touch-Tone®, programmable to rotary
- Discern proper Central Station 'ACK' and 'Kiss-off' tone(s)
- Transmit data to the Central Station(s)
- Verify data has been accepted by the Central Station(s)
- Hang-up and release phone lines
- Communicate in a variety of formats (Table 4.1, "Format Selection Addresses (20 and 50) Programming," on page 55).

1.7 Panel Configuration

The 411UDAC can be configured, through programming, for the following modes of operation:

- Stand-alone Mode With Communicator Enabled - the 411UDAC functions as a latching digital alarm communicator in which all input circuit activations latch (except those programmed as autoresettable) and are restored only by pressing the local reset switch. The onboard communicator will attempt to transmit events to a Central Station
- Slave Mode With Communicator Enabled - the 411UDAC functions as a nonlatching slave to a host control panel and the onboard digital alarm communicator will attempt to transmit events to a Central Station
- Slave Mode With Communicator Disabled - the 411UDAC functions only as a nonlatching slave to a host control panel. The digital alarm communicator will not transmit to a Central Station

1.8 Operational Modes

1.8.1 Normal Mode

Normal Mode is the standard mode of operation in which the 411UDAC monitors the channel/input circuits as well as telephone line voltage and other internal circuits. In addition to locally annunciating system trouble, active channel/input and communication fail, the onboard communicator transmits system status information to UL listed central station receivers if programmed to do so. Transmitted data includes fire alarm, fire alarm trouble, supervisory alarm and AC loss information. Specific digital communicator troubles are also transmitted.

1.8.2 Real Time Clock Mode

Real Time Clock Mode allows the user to change the digital alarm communicator's internal 24 hour clock. Connecting an external Programmer allows access to the various Modes of operation. While the 411UDAC is in Real Time Clock Mode, it does not monitor channel inputs. Use of this mode requires a valid password.

1.8.3 Program Mode

Program Mode is used to change the programmed functions of the 411UDAC. While the 411UDAC is in Program Mode, it does not monitor channel inputs. In addition, some program items will be locked, which will prevent editing while the communicator is active (dialing, transmitting, etc.). Use of this mode requires a valid password.

1.8.4 Troubleshoot Mode

Troubleshoot Mode may be used to sample and display status for all channel/input circuits, Notification Appliance Circuit, AC power, battery, charger and 12 volt resettable power. In addition, Troubleshoot Mode may be used for testing the telephone line interconnect wiring. Connection from the 411UDAC's modular jacks, through the RJ31X jacks and into the telephone network may be easily checked. In this mode, the Programmer keypad acts similar to a telephone touchpad. While the 411UDAC is in Troubleshoot Mode, it does not monitor channel inputs.

1.8.5 Default Mode

Default Mode may be used to return all 411UDAC programming back to the factory default settings and to reset the Real-Time Clock to '00:01' midnight. See "Default Mode" on page 51.

1.9 Telephone Requirements and Warnings

1.9.1 Telephone Circuitry - PH1 & PH2

AC Ringer Equivalence Number (REN) = 0.4B

Mates with RJ31X Male Connector

Supervision Threshold: less than 5.0 volts for 2 minutes

The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

1.9.2 Digital Alarm Communicator:

Before connecting the 411UDAC to the public switched telephone network, the installation of two RJ31X jacks is necessary. The following information is provided if required by the local telephone company:

Manufacturer: Fire•Lite Alarms Inc./Notifier
One Fire-Lite Place
Northford, CT 06472

Product Model Number: 411UDAC

FCC Registration Number: 1W6AL04B411UDAC

AC Ringer Equivalence: 0.4B

FCC ID label is located on the inside cover.

Important! *The DACT must not be used to dial a phone number that is call-forwarded per requirements of UL 864 9th Edition.*

1.9.3 Telephone Company Rights and Warnings

The telephone company, under certain circumstances, may temporarily discontinue services and/or make changes in its facilities, services, equipment or procedures which may affect the operation of this digital communicator. However, the telephone company is required to give advance notice of such changes or interruptions. If the digital communicator causes harm to the telephone network, the telephone company reserves the right to temporarily discontinue service. Advance notification will be provided except in cases when advance notice is not practical. In such cases, notification will be provided as soon as possible. The opportunity will be given to correct any problems and to file a complaint.

DO NOT CONNECT THIS PRODUCT TO COIN TELEPHONE, GROUND START OR PARTY LINE SERVICES.

When the digital communicator activates, premise phones will be disconnected.

Two separate phone lines are required. Do not connect both telephone interfaces to the same telephone line.

The digital communicator must be connected to the public switched telephone network upstream of any private telephone system at the protected premises.

An FCC compliant telephone cord must be used with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using a compatible RJ31X male modular plug which is Part 68 compliant.

Section 2: Installation

2.1 Mounting Options

The cabinet may be either semi-flush or surface mounted. The door is removable during the installation period by opening and lifting it off the hinges. The cabinet mounts using two key slots and two additional 0.25" diameter holes located in the backbox. The keyslots are located at the top of the backbox and the two securing holes at the bottom.

Carefully unpack the system and check for shipping damage. Mount the cabinet in a clean, dry, vibration-free area where extreme temperatures are not encountered. The area should be readily accessible with sufficient room to easily install and maintain the panel. Locate the top of the cabinet approximately five feet above the floor with the hinge mounting on the left. Determine the number of conductors required for the devices to be installed. Sufficient knockouts are provided for wiring convenience. Select the appropriate knockout(s) and pull the required conductors into the box. All wiring should be in accordance with the National and/or Local codes for fire alarm systems.

2.2 Mounting

Backbox Mounting

1. Mark and predrill holes for the top two keyhole mounting bolts using the dimensions shown in Figure 2.1.
2. Install two upper fasteners in the wall with the screw heads protruding.
3. Using the upper 'keyholes', temporarily mount the backbox over the two screws.
4. Mark the lower two holes, remove the backbox from the wall and drill the lower two holes in the wall.

Main Circuit Board Mounting

1. When the location is clean and free of construction dust or other contaminants, install the main PC board by installing the four supplied standoffs on the four main circuit board mounting studs located in the backbox. Refer to Figure 2.1 for locations.
2. Position the main circuit board's four corner mounting holes over the four standoffs just installed. *Be certain to observe the proper ESD (Electro Static Discharge) precautions to prevent damage to the static sensitive circuits. This includes, but is not limited to, use of a wrist strap.*
3. Secure the main circuit board to the standoffs with the four supplied screws and attached washers.
4. Plug the transformer connector into the main circuit board connector J4. The connector is keyed and can only be plugged-in one way. Refer to Figure 2.3 on page 21 and Figure 2.11 on page 29 for transformer connector location and AC power connections.
5. When wiring is completed, re-install the door.

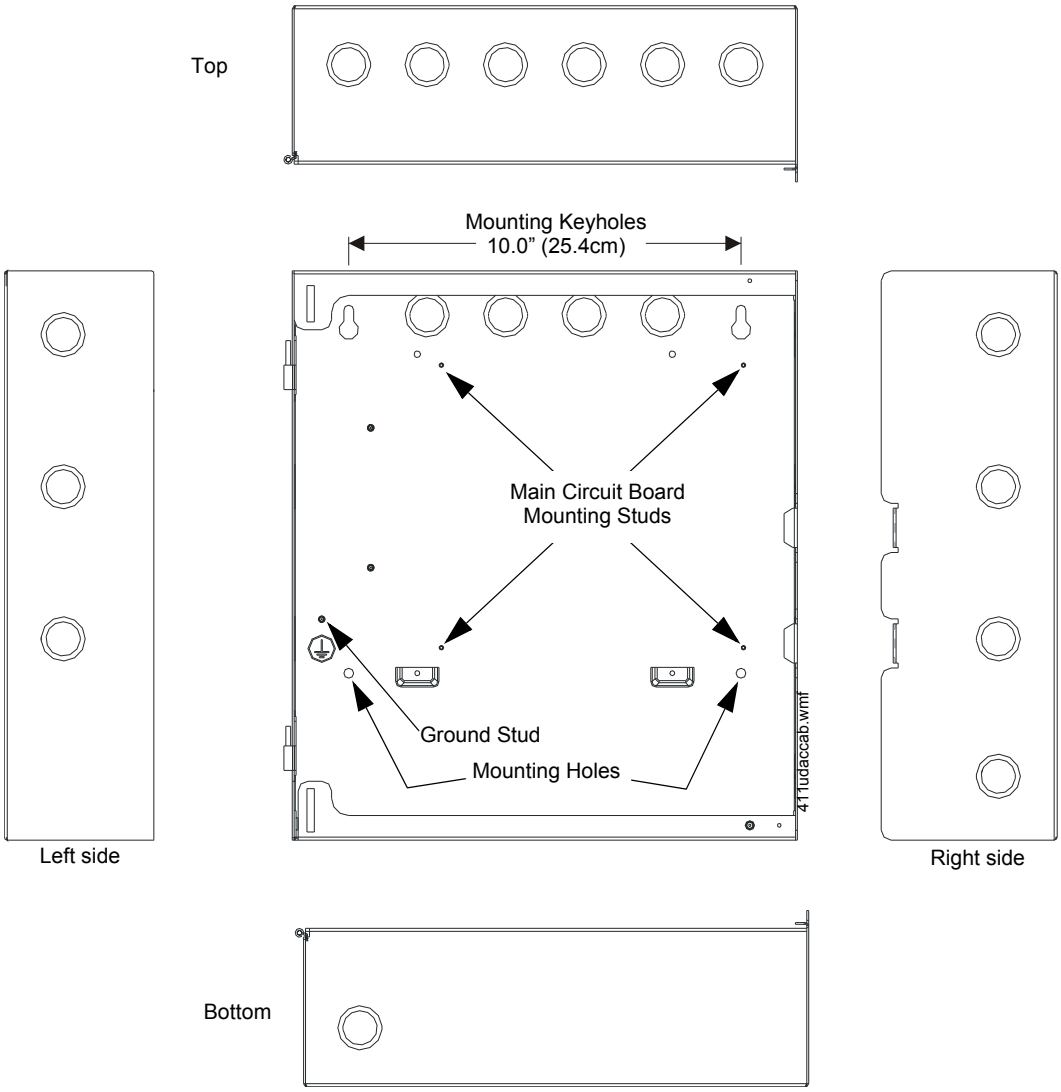


Figure 2.1 Cabinet Dimensions and Knockout Locations

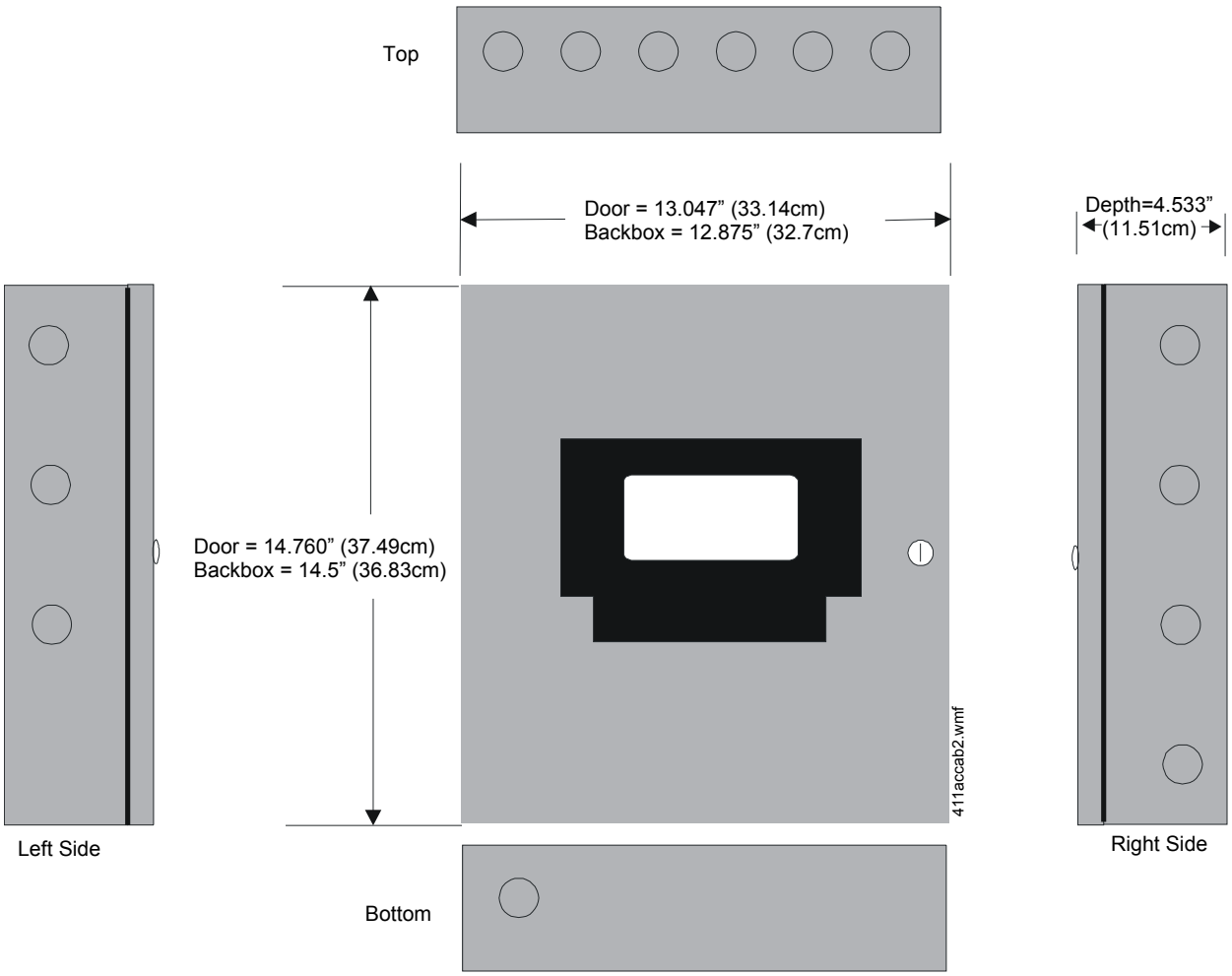


Figure 2.2 411UDAC Backbox

2.3 Operating Power

CAUTION: DISCONNECT POWER BEFORE SERVICING
SEVERAL DIFFERENT SOURCES OF POWER CAN BE CONNECTED TO THE 411UDAC. DISCONNECT ALL SOURCES OF POWER BEFORE SERVICING THIS UNIT. THE COMMUNICATOR AND ASSOCIATED EQUIPMENT MAY BE DAMAGED BY REMOVING AND/OR INSERTING MODULES OR CABLES WITH POWER APPLIED.

Primary Power Source (AC) and Earth Ground Connections

AC power connections are made inside the 411UDAC cabinet. The primary power source is 120 VAC, 60 Hz, 0.7 amps. Run a pair of wires (with ground conductor) from the protected premises main breaker box to TB3 of the main circuit board. As per the National Electric Code, use 14 AWG (2.00 mm^2) or heavier gauge wire with 600V insulation. No other equipment may be connected to this circuit. In addition, this circuit must be provided with overcurrent protection and may not contain any power disconnect devices.

A separate earth ground connection must be made to ensure proper panel operation and lightning and transient protection. Remove the two keps nuts from the grounding stud in the backbox. Connect the incoming earth ground wire to supplied cable #71073 with a wire nut. Position the ring terminal end over the grounding stud. Secure with one of the keps nuts. Place the ring terminal from the other supplied ground cable #71073 over the ground stud and secure with the second keps nut. Wire the ground cable to the bottom position of TB3. Refer to the figure below for location of the stud. Apply AC power to the panel only after the system is completely installed and visually checked. Note that AC power must be applied to the panel before installing the battery interconnect cable.

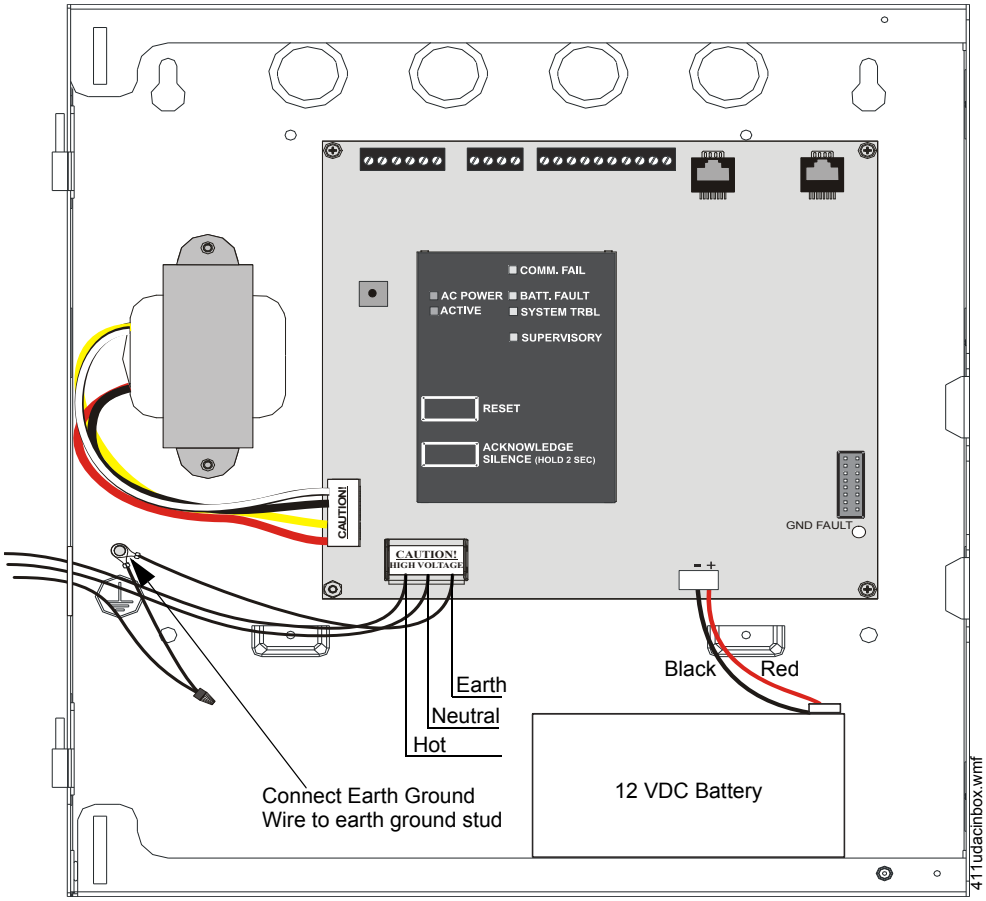


Figure 2.3 Operating Power Connections

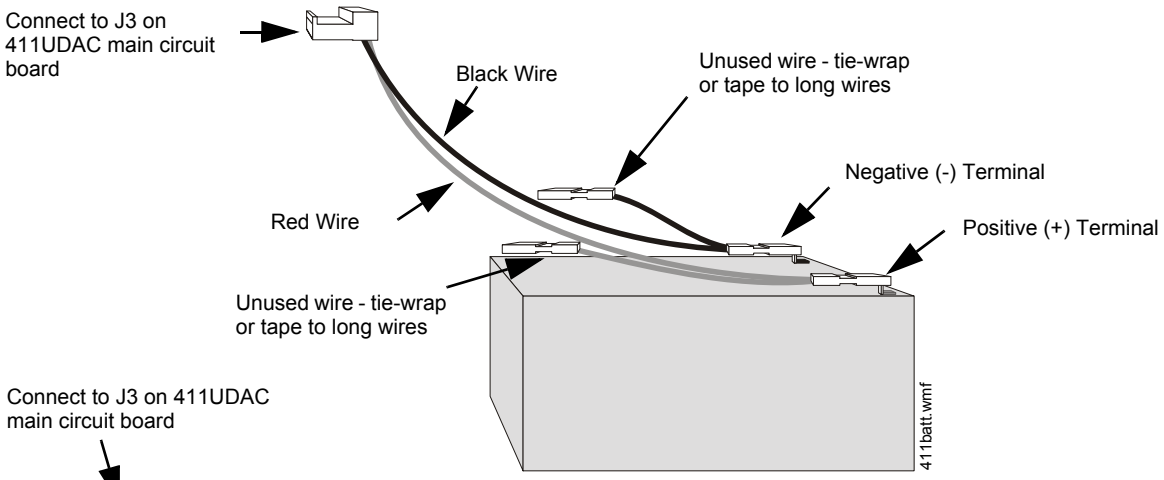
Secondary Power Source (batteries)

Observe polarity while connecting the battery. When installing one 12 volt battery for up to 12 Amp Hour applications, connect the supplied battery cable (P/N 75516) by sliding the connector attached to the long red wire onto the positive (+) battery terminal and the connector attached to the long black wire onto the negative (-) battery terminal. Tie-wrap or tape the two unused short wires to the long wires.

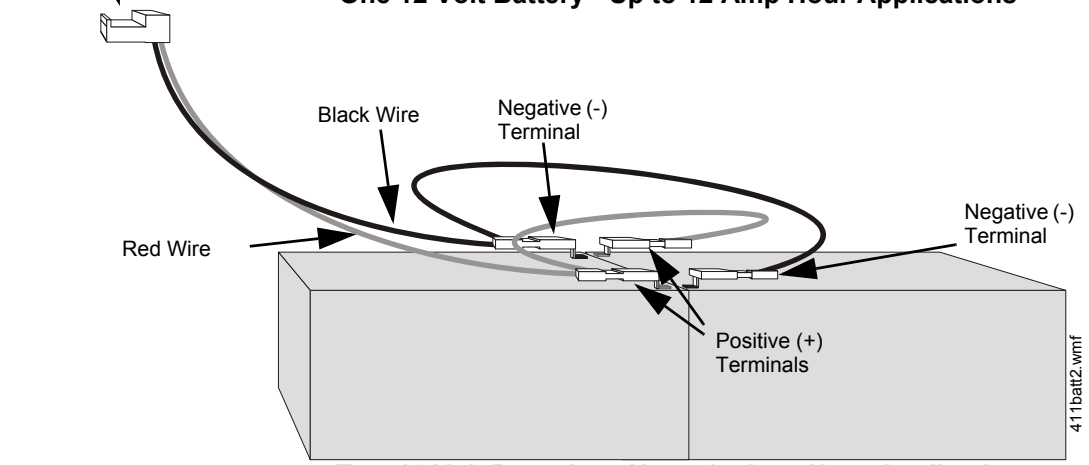
When installing two 12 volt, 7 Amp Hour batteries (in parallel) for up to 14 Amp Hour applications, follow the same procedure as described for one battery except connect the unused short wires to the second battery. Slide the connector attached to the short red wire onto the positive (+) terminal of the second battery and the connector attached to the short black wire onto the negative (-) battery terminal of the second battery.

When the panel is ready to have power applied, connect the battery cable plug to connector J3 on the 411UDAC main circuit board. The battery charger is capable of recharging sealed lead acid type batteries. Refer to the battery calculations table to determine the correct battery rating.

CAUTION: BATTERY CONTAINS SULFURIC ACID
THE BATTERY CONTAINS SULFURIC ACID WHICH CAN CAUSE SEVERE BURNS TO THE SKIN AND EYES, AND CAN DESTROY FABRICS. IF CONTACT IS MADE WITH SULFURIC ACID, IMMEDIATELY FLUSH THE SKIN OR EYES WITH WATER FOR 15 MINUTES AND SEEK IMMEDIATE MEDICAL ATTENTION.



One 12 Volt Battery - Up to 12 Amp Hour Applications



Two 12 Volt Batteries - Up to 14 Amp Hour Applications

Figure 2.4 Battery Cable Connections

2.4 Input Channels

The 411UDAC has four channel inputs. Channel/input field wiring is supervised for opens (trouble), shorts (active) and ground faults (zero ohms impedance between panel and earth ground) by the 411UDAC. All conditions are visually and audibly annunciated and, if programmed, communicated to a Central Station.

Each channel is a Style B (Class B) Initiating Device Circuit with the exception of channel/input 3 which can be configured for Style B or Style D (Class A). All inputs can be connected to normally-open contact type devices. In addition, inputs 1 and 3 can be connected to conventional 2 or 4-wire smoke detectors. Figure 2.5, “Wiring Initiating Device Circuits” on page 23 for information on wiring Style B and Style D circuits.

The channel/inputs may be programmed as shown below:

- 2 or 4-wire smoke detector (inputs 1 & 3 only)
- Pull station
- Normally-open contact device
- Host panel trouble
- Supervisory
- Supervisory autoresettable
- Waterflow silenceable
- Waterflow nonsilenceable

A maximum of five waterflow devices may be used on any circuit programmed as a waterflow zone per NFPA 72.

It is allowable to mix an assortment of device types (i.e. smoke detectors, heat detectors, pull stations, etc.) on any zone. This is not recommended, however, since specific and detailed reports will not be possible (particularly critical when using Contact ID format). For example, the report of general fire alarm versus pull station fire alarm or smoke detector fire alarm could not be distinguished.

The factory default programming for each channel is as follows:

✓ Channel 1 - fire alarm (2 or 4-wire smoke)
✓ Channel 2 - pull station
✓ Channel 3 - fire alarm (2 or 4-wire smoke)
✓ Channel 4 - pull station

The following illustration shows Channel 1 connected to 4-wire smoke detectors, and UL-listed power supervision relay; Channel 2 connected to manual pull stations; Channel 3 connected to manual pull stations; and Channel 4 connected to waterflow devices. In this example, the factory default programming for Channel 4 must be changed from *pull station to waterflow device*.

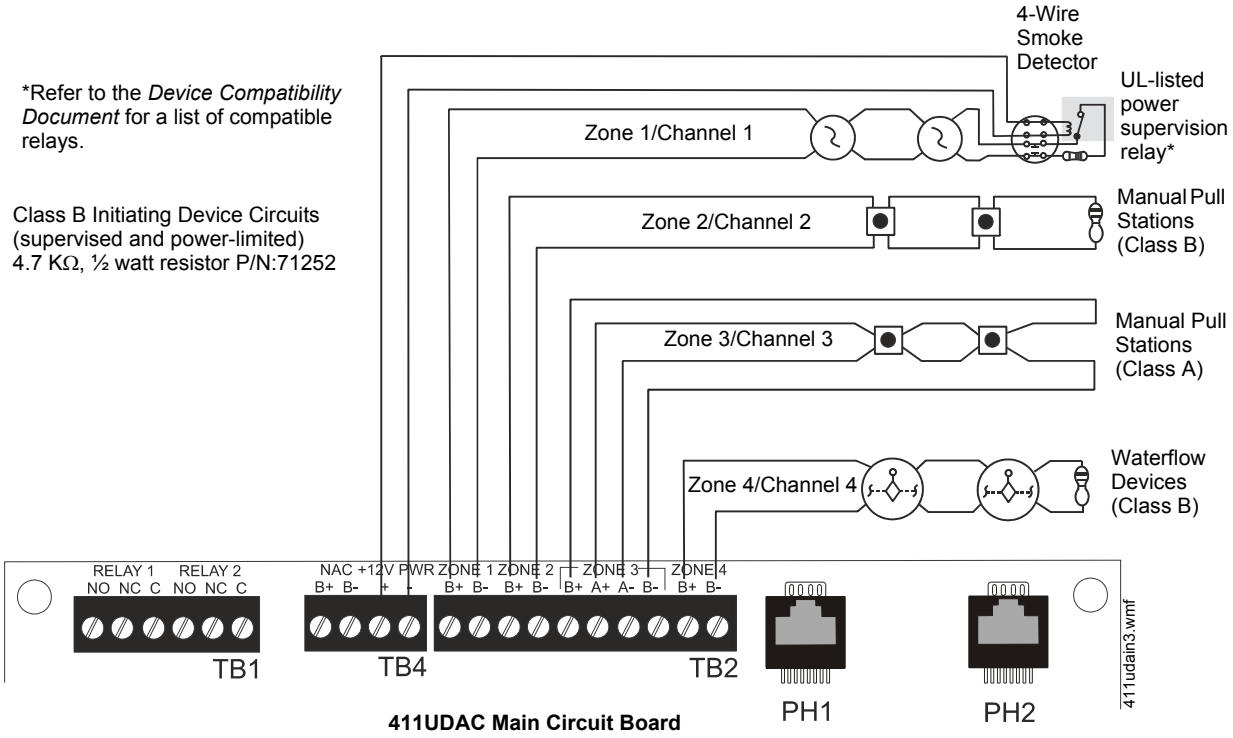


Figure 2.5 Wiring Initiating Device Circuits

Note: The addressable monitor module input, which is being used to monitor the 411UDAC Relay Output programmed for DACT Trouble must be programmed as 'DACT Trouble' at the FACP. The 411UDAC must be programmed as a Slave Communicator (programming address 64 set to '2')

Program the 411UDAC as follows:
Channel 1 - Normally Open Contact Device (alarm)
Channel 2 - Host Panel Trouble
Channel 3 - Supervisory

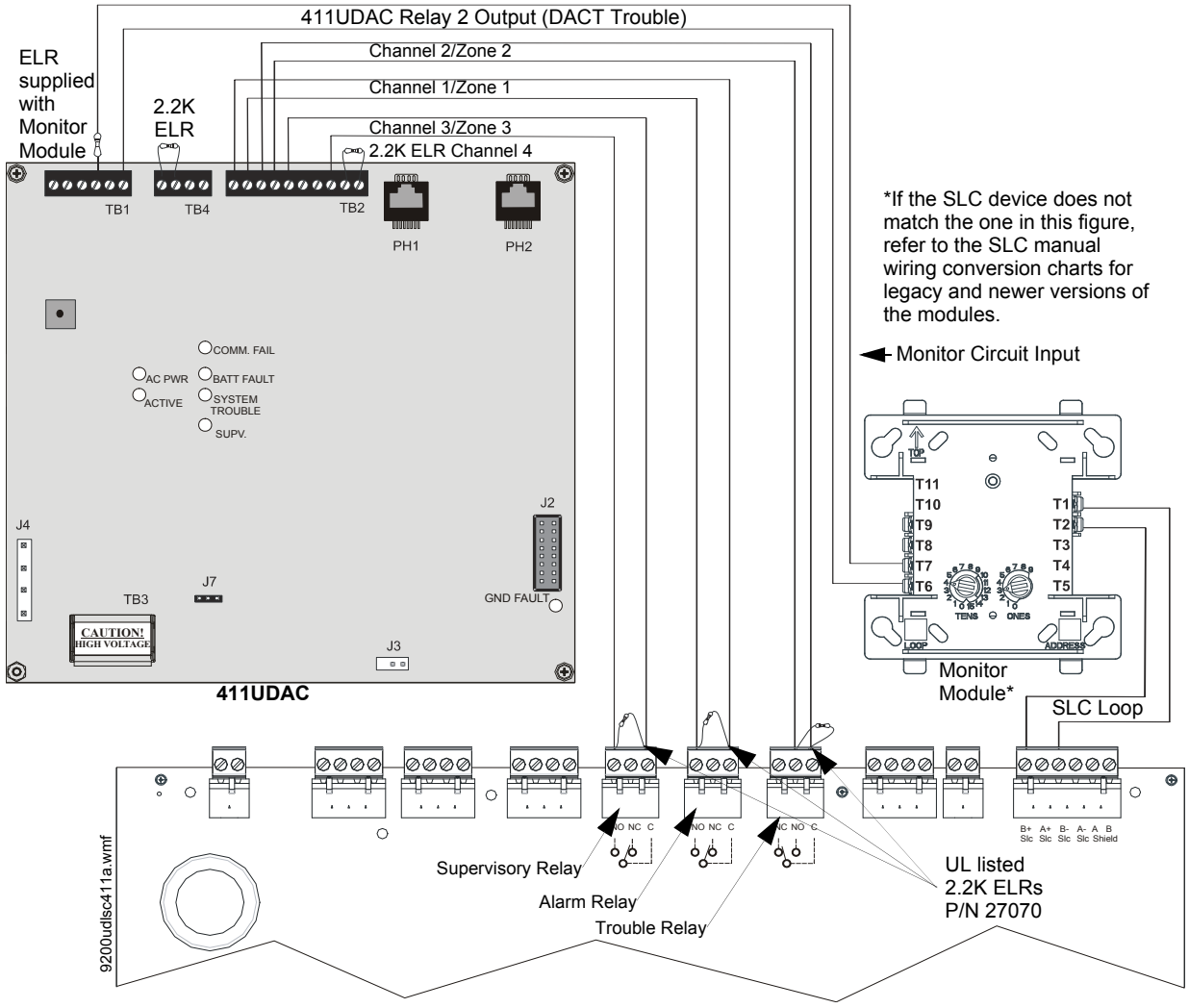


Figure 2.6 Typical Addressable FACP Connection to 411UDAC

2.5 Output Circuits

Notification Appliance Circuit

The 411UDAC provides one Style Y (Class B) NAC (Notification Appliance Circuit). The NAC is supervised and power-limited and is capable of 1.0 amp of current. Refer to the *Device Compatibility Document* for a listing of compatible notification appliances.

Notes:

1. *The 411UDAC can only be used to supplement host panel NACs.*
2. *Do not connect strobes to the 411UDAC Notification Appliance Circuit.*

The NAC may be programmed as follows:

- Silenceable
- Nonsilenceable (waterflow)
- Silence Inhibited (one minute)
- Autosilence (5 to 30 minutes)

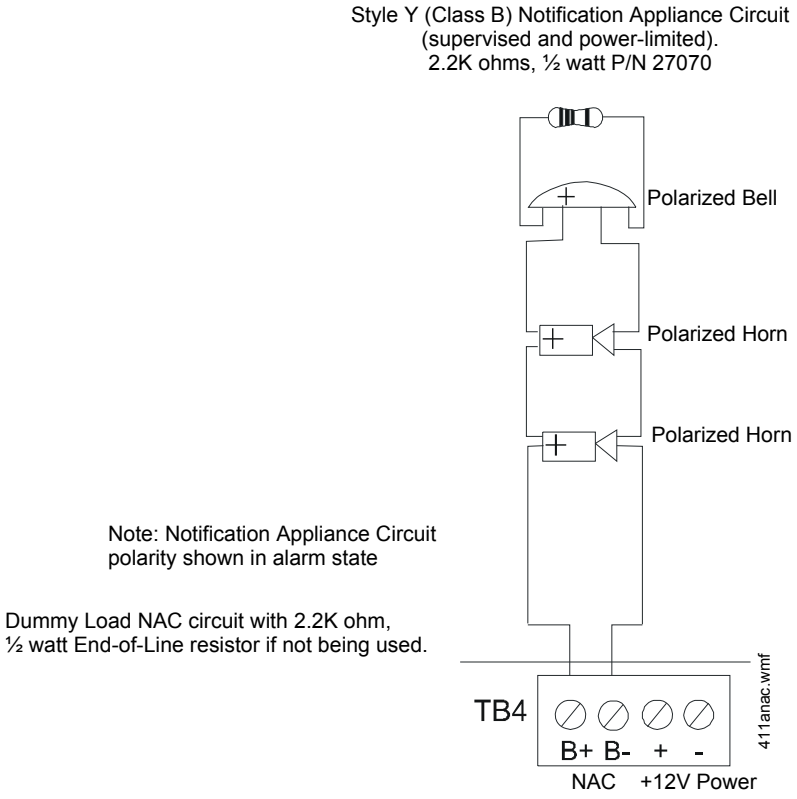


Figure 2.7 Notification Appliance Circuit Connections

Relay Programming

The relays are programmable for activation on fire alarm, host panel trouble, fire supervisory, total communication failure and DACT. Refer to “DACT Programming” on page 36. Addresses ‘85 - 88’ are used for programming relay functions and enable.

Note: Relay connections may be power-limited or nonpower-limited. However, connecting one type next to the other type is not allowed. Both circuits must be either power-limited or nonpower-limited.

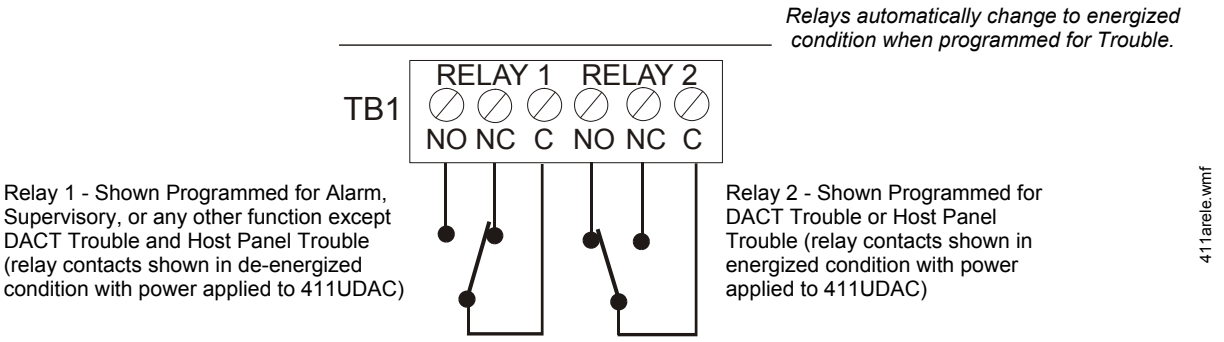


Figure 2.8 Programmable Relay

2.6 Telephone Circuits

Provision to connect two independent telephone lines is available via two telephone jacks labeled PH1 (Primary) and PH2 (Secondary). Telephone line control/command is possible via double line seizure as well as usage of an RJ31X style interconnection. (RJ31X jacks must be ordered separately).

CAUTION: PROPER FUNCTIONALITY
IT IS CRITICAL THAT THE 411UDAC BE LOCATED AS THE FIRST DEVICE ON THE INCOMING TELEPHONE CIRCUIT TO PROPERLY FUNCTION.

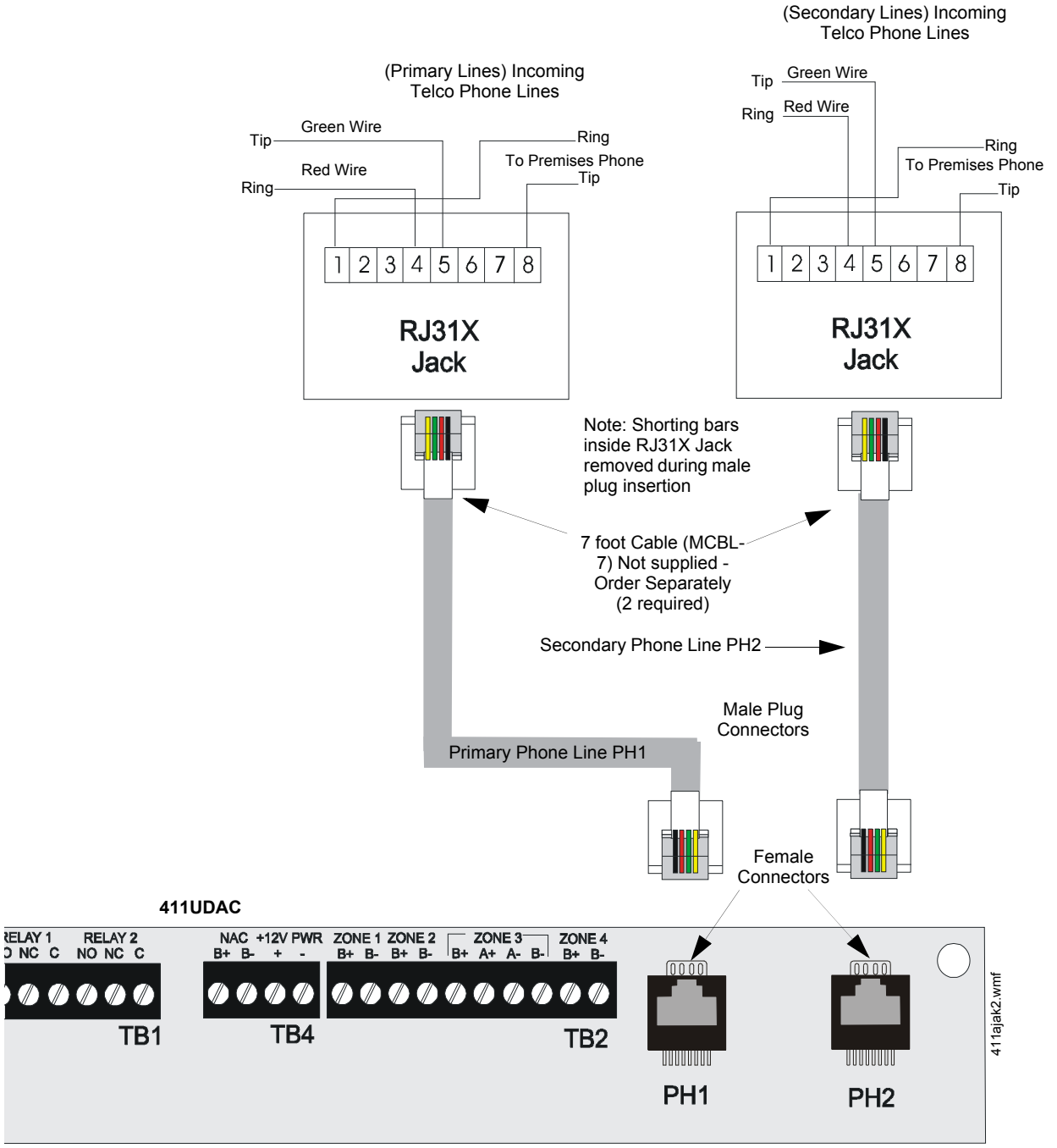


Figure 2.9 Wiring Phone Jacks

2.7 Optional Programmer

The Fire-Watch 411 Series DACT Programmer (Model PRO-411) is used to:

- ✓ switch between the digital alarm communicator's five Modes of operation
- ✓ set the digital alarm communicator's 24 hour internal clock in Real-Time Clock Mode
- ✓ program the 411UDAC digital alarm communicator in Program Mode
- ✓ test the status of input and output circuits (including telephone lines) in Troubleshoot Mode
- ✓ return all digital alarm communicator programming to the factory default settings in Default Mode

To use the PRO-411 Programmer:

1. Remove all power from the 411UDAC.
2. Unlock and open the 411UDAC door.
3. Connect the Programmer cable to connector J2 located in the lower right corner of the 411UDAC. Note that the key on the connector must align with the slot in the J2 connector.
4. Reapply power to the 411UDAC.
5. Operate the Programmer by pressing the **MODE** key. Enter the appropriate four digit code and then press the **[ENTER/STORE]** key.

Note that it is not possible to switch from Normal Mode to any other mode if any of the four Channels is programmed for fire alarm or fire supervisory and is active, that is, in alarm (shorted).

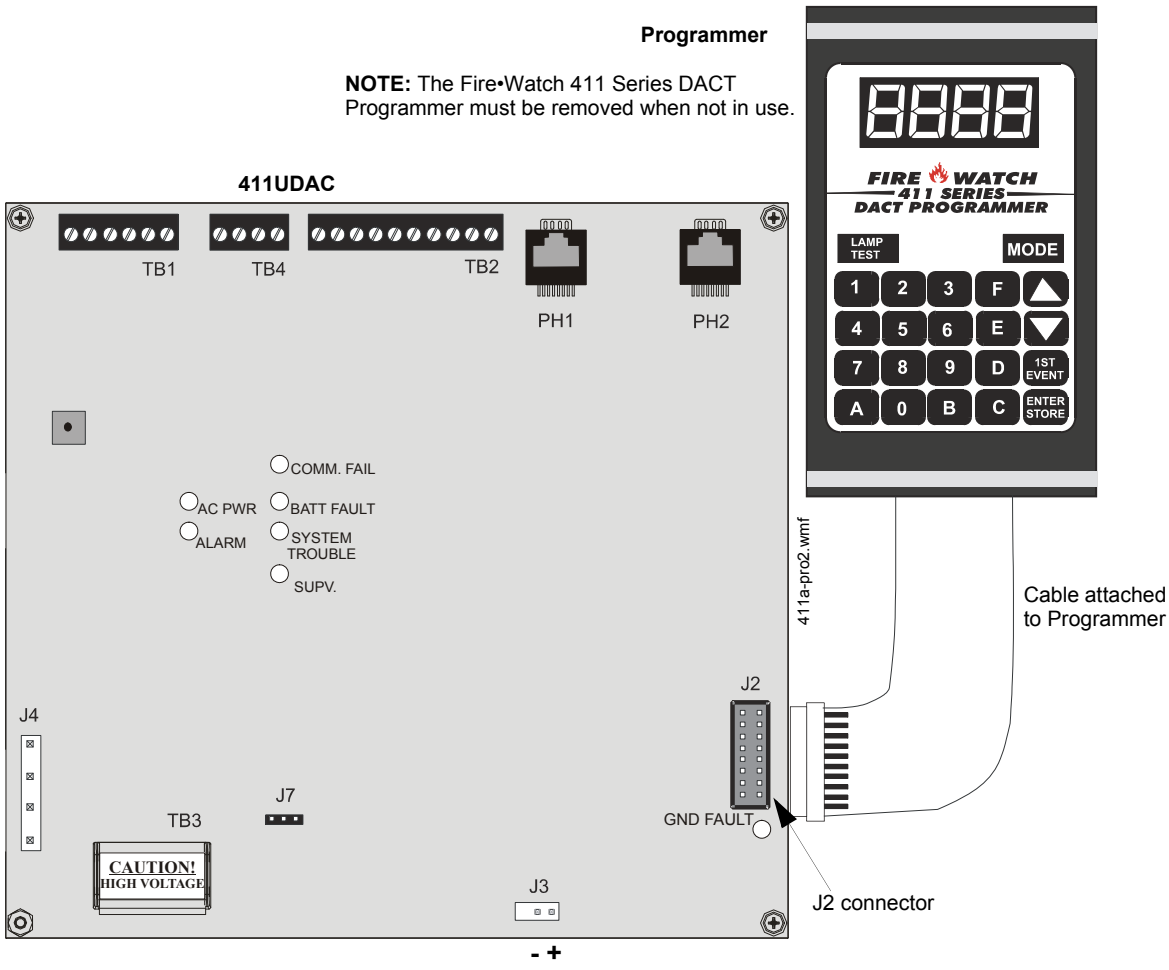


Figure 2.10 Programmer Connection to 411UDAC

2.8 UL Power-limited Wiring Requirements

Power-limited and nonpower-limited circuit wiring must remain separated in the cabinet. All power-limited circuit wiring must remain at least 0.25" away from any nonpower-limited circuit wiring. Furthermore, all power-limited and nonpower-limited circuit wiring must enter and exit the cabinet through different knockouts and/or conduits. A typical wiring diagram for the 411UDAC is shown below.

Note: Relay connections may be power-limited or nonpower-limited, provided that 0.25" spacing is maintained between conductors of power-limited and nonpower-limited circuits.

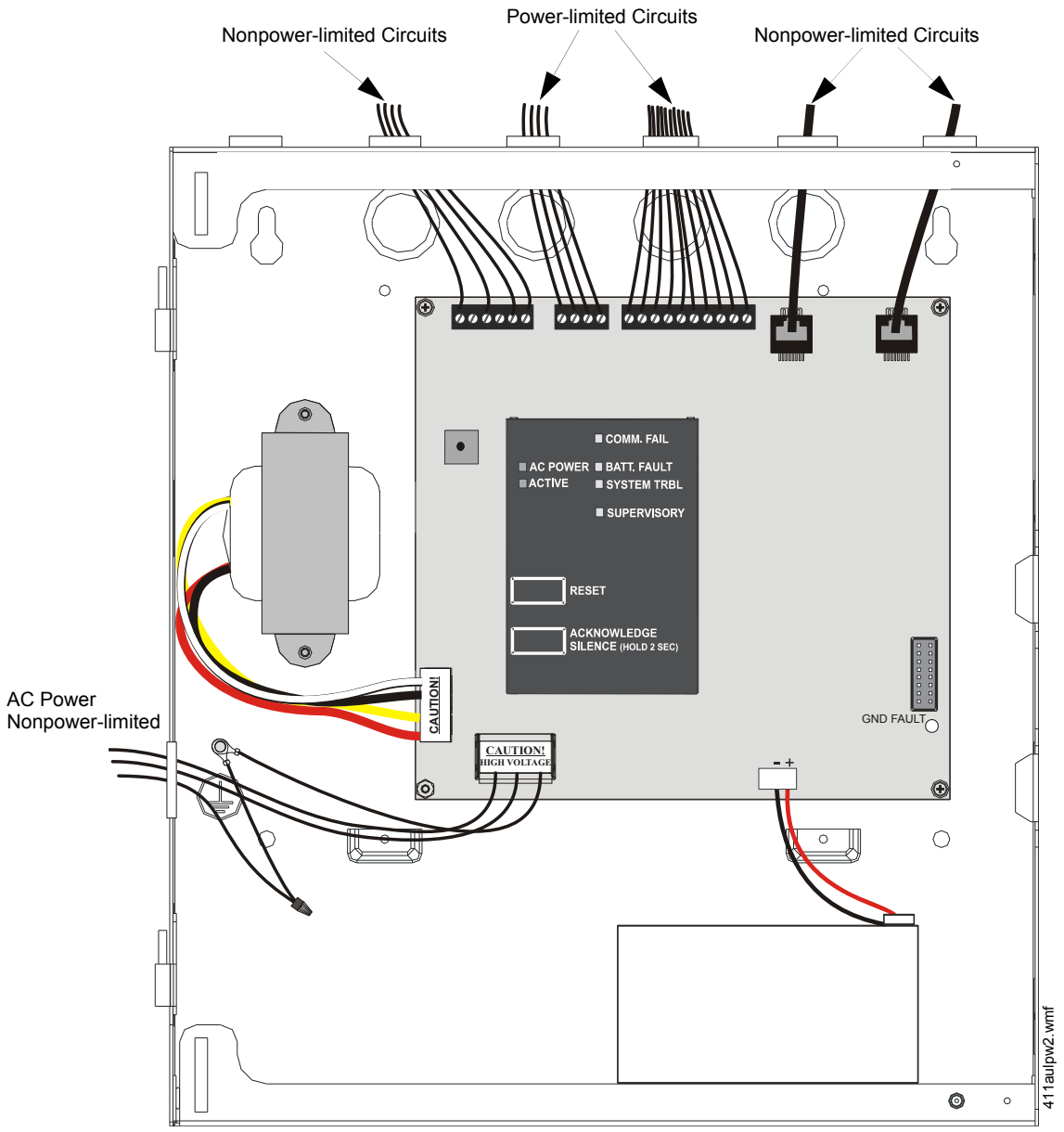


Figure 2.11 Typical UL Power-limited Wiring Diagram

Section 3: Modes of Operation

The 411UDAC has five operational modes:

- Normal Mode
- Real Time Clock Mode
- Program Mode (requires password)
- Troubleshoot Mode
- Default Mode (requires password)

The operational mode for the 411UDAC is Normal Mode. The operator is able to switch between any modes of operation provided no alarm events are active in the system. It should be noted that the unit will not respond to input activations while in any mode except Normal Mode.

Some modes require a password. Refer to Section 3.2.

Access to any other Mode requires connection of the PRO-411 DACT Programmer which consists of a keypad and display. Figure 3.1, “Programmer Keypad” on page 31.

Note that if the 411UDAC is configured to operate as a Slave Communicator, it will attempt to transmit all panel status to a Central Station. If set to operate in the Test Communicator configuration, the 411UDAC will function as a local slave panel only without transmitting panel status to a Central Station.

3.1 Normal Mode

Normal Mode is the standard (default) mode of operation for the 411UDAC. The unit continuously monitors the status of the four input channels as well as the status of the onboard digital communicator. If no activity is detected on the four input channels (no shorts or opens) and the 411UDAC is operating free of internal troubles, the unit will display the following conditions:

- ✓ All LEDs are off except the AC Power LED
- ✓ NAC output is off
- ✓ Onboard piezo sounder is off
- ✓ The relays are in their normal deactivated state
- ✓ Communicator is not transmitting to the Central Station

The 411UDAC transmits system status reports to a central station, if programmed to do so, via the public switched telephone network. Two supervised telephone line connections are made to interface the digital communicator to the telephone lines. Both telephone lines are supervised by the 411UDAC for proper voltage.

The 411UDAC is capable of line seizure on both the primary and secondary telephone line interfaces. *Any time the digital communicator detects the necessity to call the Central Station, line seizure will disconnect any local premises phones sharing the same telephone line. Sharing of phone lines, for fire systems, must be approved by the Local Authority Having Jurisdiction.* All transmissions to the Central Station will be sent over the Primary phone line. In the event of a noisy or faulty phone line, transmissions will be sent over the backup Secondary phone line.

Transmission options exist to:

- send reports to the secondary phone number as backup only
- send reports to both the primary and secondary phone numbers
- send reports to the first available central station phone number

If 10 total attempts to communicate are unsuccessful, the 411UDAC will turn on the Communication Fail LED.

The 411UDAC meets NFPA 72 requirements for Remote Station Protective Signaling Service and Central Station Signaling Service reporting requirements for: (a) the type of signal, (b) condition and (c) location of the reporting premises. See "Central Station Communications" on page 54, for additional information.

The 411UDAC can be switched from Normal Mode to any other Mode, provided no channel programmed for fire alarm or fire supervisory is active, that is, in alarm (shorted). The PRO-411 DACT Programmer, for use with the Fire•Watch 411 Series, must be connected to the 411UDAC in order to change from mode to mode.

3.1.1 Programmer Key Functions

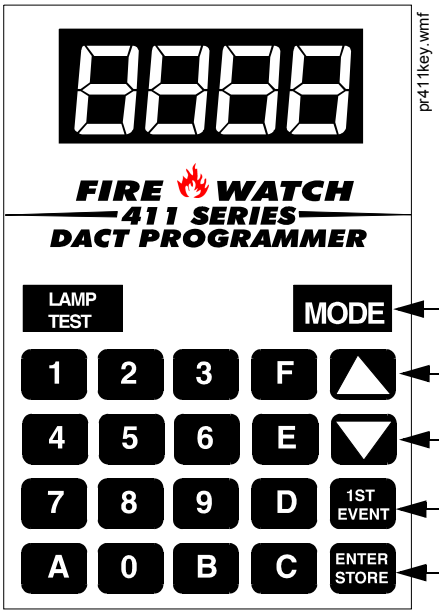


Figure 3.1 Programmer Keypad

MODE KEY

Pressing the **MODE** key followed by a valid 4-digit numerical code and the **[ENTER/STORE]** key selects one of the five modes of operation. To enter Normal Mode from any other mode, press the **MODE** key followed by **6676** and then **[ENTER/STORE]**.

– **6676** spells NORM on a Touch-Tone® phone.

If an incorrect key is entered, reenter the proper 4-digit code before pressing the **[ENTER/STORE]** key. Note that as information is entered into the 411UDAC, the digits will scroll across the Programmer display from right to left.

___6
__66
_667
6676

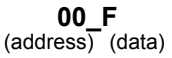
A pause of up to 10 seconds between each number is allowed while entering the code.

LAMP TEST KEY

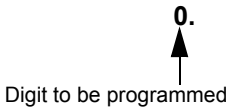
Pressing the Lamp Test key on the Programmer, while the digital communicator is in Normal Mode, will cause the front panel LEDs and all segments of the four 7-segment display on the 411UDAC to light. A Lamp Test can only be performed in Normal Mode. The Lamp Test key can also be used in Troubleshoot Mode to view the 12 volt resettable power value.

1st EVENT KEY

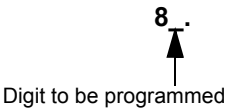
This key, along with the **UP** and **DOWN** arrow keys, are used only in Program Mode. Press the **1st EVENT** key at any time to display the first program memory address and its content. The following may be displayed on the Programmer:



If the **1st EVENT** key is pressed a second time, the following will be displayed on the Programmer display:



The contents of any address can be viewed by entering the digits of the desired address. For example, to view the contents of address 86, press the '8' key on the keypad. '8' will appear as the first digit in the display, a blank will appear in the position of the second digit and the decimal point will move one position to the right, indicating that the next digit can now be entered.



Press the '6' key on the keypad. '6' will appear as the second digit on the display and the decimal point will move one position to the right. Press the **[ENTER/STORE]** to view the contents of address 86.

86_.

DOWN ARROW

Use the **DOWN** arrow key to decrement the memory address and view its content.

UP ARROW

Use the **UP** arrow key to increment the memory address and view its content.

ENTER/STORE

Stores entry into nonvolatile E^2 memory located on the 411UDAC printed circuit board, then increments to the next higher address.

3.1.2 Programmer Display

Four 7-segment red LED characters provide visual display of information in the various modes of operation.

3.2 Password Creation and Entry

In order to access the Default Mode or Programming Mode, a valid password must be entered.

1. Press the **MODE** key followed by the 4-digit entry code (**3337** for Default Mode or **7764** for Program Mode).
2. Press the **[ENTER/STORE]** key. The display will read **LinP** indicating that a valid password is required to continue.

3. For the initial power-up of the 411UDAC or for the first power-up after a manually defaulted password, key in the default password **0000** and press **[ENTER/STORE]**. The display will then read **dC_P**.
4. Press **d** to continue with the default password or press **C** to change to a new password.
5. If **d** is entered in step 4, the display goes directly to the programming/default modes.
6. If **C** is entered in step 4, the display will read **En_P** prompting for a new password.
   - Key in a new 4-digit password. Valid passwords are any four digit code from 0001-9999.
   - The display will then read **rEnP**. Key in the new password again for verification.
   - Once the new password has been verified, the programming/default modes will be accessed.

If at any time a password was entered incorrectly, the display will read **AErr** indicating an invalid entry was made.

3.3 Real Time Clock Mode

Real Time Clock Mode is entered by pressing the **MODE** key followed by the 4-digit entry code **2525** and pressing the **[ENTER/STORE]** key. Accessing this mode requires authentication. Refer to Section 3.2.

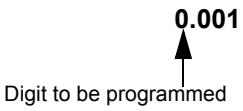
– **2525** spells CLCK on a Touch-Tone® phone.

If an incorrect key is entered, reenter the proper 4-digit code before pressing the **[ENTER/STORE]** key. Note that as information is entered into the 411UDAC, the digits will scroll across the Programmer display from right to left.

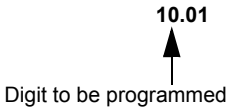
___2
__25
_252
2525

A pause of up to 10 seconds between each number is allowed while entering the code. After pressing the **[ENTER/STORE]** key, the 411UDAC will be in Real Time Clock Mode. A maximum of 10 minutes idle time is allowed at this point before beginning program entries and between each key stroke, otherwise, the 411UDAC will return to Normal Mode. Note that the time is not stored until the fourth and final digit is selected and the **[ENTER/STORE]** key is pressed. If the 411UDAC returns to Normal Mode prior to entering the fourth digit, no changes will be stored and the original time is retained.

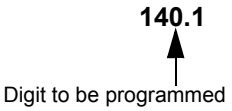
On entering Real Time Clock Mode, **0.001** will appear on the Programmer display:



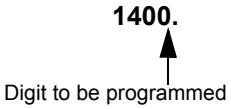
The time is displayed in military time. Note the position of the decimal point in the display. This indicates that the first digit to be programmed is the one to the left of the decimal point. To program the first hour digit, press the corresponding number on the Programmer keypad and then press the **[ENTER/STORE]** key. For example, to program 2:00 PM (**1400** in military time), press '1' on the keypad and then the **[ENTER/STORE]** key. The number '1' will appear as the far left digit and the decimal point will move one position to the right indicating that the second digit from the left is now ready for programming.



Enter the second hour digit (4 in this example) and press the **[ENTER/STORE]** key. The number '4' will appear as the digit second from the left and the decimal point will move one position to the right indicating that the third digit from the left is now ready for programming.



Enter the first minute digit (0 in this example) and press the **[ENTER/STORE]** key. The number '0' will appear as the digit third from the left and the decimal point will move one position to the right indicating that the fourth digit from the left is now ready for programming.



Enter the second minute digit (0 in this example) and press the **[ENTER/STORE]** key. The number '0' will appear as the digit fourth from the left. Following the entry of the fourth and final digit, the operating mode will immediately switch to Normal Mode, indicating that programming of the time is now completed.

To exit Real Time Clock Mode before completing clock programming, press the **MODE** key, followed by the 4-digit code for an alternate mode and then the **[ENTER/STORE]** key. During Real Time Clock Mode, if no key is pressed within 10 minutes, the 411UDAC will revert to Normal Mode.

Note that upon power-up, the internal clock starts running at 00:01 midnight. It must be changed so that the 411UDAC can accurately call in test signals to the Central Station. Upon power loss or on entering Default Mode, the clock reverts to 00:01 midnight and must be reset.

3.4 Program Mode

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:			
Program feature or option	**Permitted in UL 864? (Y/N)**	**Possible settings**	**Settings permitted in UL 864**
AC Loss Delay	Y	AC Loss Delay = 0, 1, 2 (factory default), 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, or 18 hours Refer to “AC Loss Reporting Delay (60)” on page 45.	AC Loss Delay = 1 or 2 hours
Input Channel 1-4 Delay Timer	Y	0 – 179 seconds Refer to “Input Channel 1 Delay Timer (69 - 71)” on page 46	Delay timer = 0 - 90 seconds
Trouble Call Limit	N	Program Address 96 = 0 (factory default): unlimited calling to Central Station for any trouble condition Program Address 96 = 1: limits call for each unique trouble to 10 within a 24 hour period Refer to “Trouble Call Limit - Dialer Runaway Prevention (96)” on page 50	Program Address 96 = 0 for unlimited Central Station trouble calls

All programming selections made during Program Mode are stored in nonvolatile memory. This ensures that the 411UDAC will retain all entries made in Programming Mode even if power is removed.

The user must program the primary and secondary phone numbers, account numbers, 24-hour test report times and verify event codes for each Central Station account. The 411UDAC is shipped with the program options/features already factory programmed. Alternative options/features may be programmed if desired. If all factory default settings are acceptable, programming is complete.

Program Mode is entered by pressing the **MODE** key followed by the 4-digit program mode entry code **7764** and pressing the **[ENTER/STORE]** key. Accessing this mode requires authentication. Refer to Section 3.2.

– **7764** spells PROG on a Touch-Tone® phone.

If an incorrect key is entered, reenter the proper 4-digit code before pressing the **[ENTER/STORE]** key. Note that as information is entered into the 411UDAC, the digits will scroll across the Programmer display from right to left.

___7
__77
_776
7764

A pause of up to 10 seconds between each number is allowed while entering the code. After pressing the **[ENTER/STORE]** key, the 411UDAC will be in Program Mode. A maximum of 10 minutes idle time is allowed at this point before beginning program entries and between each key stroke, otherwise, the unit will return to Normal Mode. All entries made prior to the 10 minute time-out are valid and are stored.

Once in Program Mode, the 411UDAC will:

- ✓ Light the DACT Trouble LED
- ✓ Activate Relay if programmed for DACT trouble
- ✓ Ignore all other keys other than those mentioned in this section
- ✓ Display **00_F** on the Programmer display
- ✓ Continue to communicate any events not previously acknowledged at a central station prior to entering Programming Mode
- ✓ Communicate an 'Off Normal' event to the Central Station
- ✓ Turn off piezo

While in Program Mode, the first three locations on the left of the Programmer display represent the memory address and the last location (farthest right) represents the contents of the memory address. The first address displayed is shown below:

00_F
(address) (data)

Certain program items will be locked from editing if the communicator is active (dialing, transmitting, etc.). These programming locations are '00-19' Primary Central Station Phone Number, '20' Primary Central Station Communications Format, '21-24' Primary Central Station Account Code, '30-49' Secondary Central Station Phone Number, '50' Secondary Central Station Communications Format, '51-54' Secondary Central Station Account Code, '61' Central Station Backup Reporting and '145-end' Event Codes.

To unlock these locations, either wait until the communicator stops transmitting or disable the communicator via address location 64 by changing the content of this address to '0.'

When desired changes have been completed, exit Programming Mode by pressing the **MODE** key, followed by the 4-digit code for an alternate mode and then the **[ENTER/STORE]** key. During Program Mode, if no key is pressed within 10 minutes, the unit will revert to Normal Mode.

The Programmer cable should not be removed from the 411UDAC unless the unit is in Normal Mode. If the Programmer cable is removed while the 411UDAC is in a Mode other than Normal Mode, the communicator will automatically revert to Normal Mode following a 10 minute time-out period. Note that if the Programmer is in Troubleshoot Mode when the cable is removed, the 411UDAC will revert to Normal Mode following a 20 minute time-out period.

3.4.1 DACT Programming

Primary Central Station Phone Number (00 - 19)

The first twenty add8resses (**00 - 19**) are factory set to 'F' (**00_F to 19_F**). Programming is done as follows:

- ✓ If your phone number is 484-7161, press **4**.
- ✓ The display will read **00_4**.
- ✓ Press **[ENTER/STORE]** to save the entry to memory and increment to the next address **01_F**.
- ✓ Enter the remaining numbers in their respective addresses as shown below:

Entry	4	8	4	7	1	6	1	F	F	F	F	F	F	F	F	F	F	F	F	F
Address	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19

Valid entries for both the primary and secondary phone numbers are 0 to 9 and A to F with the numeric digits as dialed numbers and the hexadecimal digits representing the following functions:

- A = * on a Touch-Tone phone keypad
- B = # on a Touch-Tone phone keypad
- C = look for secondary dial tone for up to two seconds (then dial anyway)
- D = three second pause
- E = five second pause
- F = end of phone number (Note: F must remain in all unused phone number addresses)

If the first digit of the Primary Central Station Phone Number remains ‘F’ and the digital communicator is enabled for transmission to a Central Station, a primary phone number fault will be generated. The phone number must begin with a digit other than ‘F.’

New FCC regulations allow extra digits to the CIC (Carrier ID Code), to identify the long distance carrier. The expanded phone number field of 20 digits facilitates this function. Simply enter the digits required by the telephone company if desired.

Primary Central Station Number Communication Format (20)

One location is needed to select the Communication Format to the primary phone number. Address 20 is used for this purpose. The factory default setting for this address is 'E', which is Contact ID Format. You may enter '0' through 'D' in place of the default, then press **[ENTER/STORE]**. Choose from the list of formats below:

0: 4+1 Ademco Express Standard, DTMF, 1400/2300 ACK
1: 4+2 Ademco Express Standard, DTMF, 1400/2300 ACK
2: 3+1 Standard 1800 Hz Carrier, 2300 Hz ACK
3: 3+1 Expanded 1800 Hz Carrier, 2300 Hz ACK
4: 3+1 Standard 1900 Hz Carrier, 1400 Hz ACK
5: 3+1 Expanded 1900 Hz Carrier, 1400 Hz ACK
6: 4+1 Standard 1800 Hz Carrier, 2300 Hz ACK
7: 4+1 Expanded 1800 Hz Carrier, 2300 Hz ACK
8: 4+1 Standard 1900 Hz Carrier, 1400 Hz ACK

9: 4+1 Expanded 1900 Hz Carrier, 1400 Hz ACK
A: 4+2 Standard 1800 Hz Carrier, 2300 Hz ACK
B: 4+2 Expanded 1800 Hz Carrier, 2300 Hz ACK
C: 4+2 Standard 1900 Hz Carrier, 1400 Hz ACK
D: 4+2 Expanded 1900 Hz Carrier, 1400 Hz ACK
E: Contact ID, DTMF, 1400/2300 ACK
F: Future use

Consult the Central Station for proper Format selection. For any Format chosen, all event codes are automatically programmed by the 411UDAC. Refer to Table 3.1, "Ademco Contact ID Format - Primary," on page 37, Table 3.2, "4+2 Standard and 4+2 Express Formats - Primary," on page 38 and Table 3.3, "All 3+1, 4+1 and 4+2 Expanded Formats - Primary," on page 39.

Event Codes - Setting Entries

The Format selected in address 20 will cause the 411UDAC to automatically program addresses 145 - 228 with the factory default settings. Any of the Event Code settings may be altered. Consult your Central Station prior to altering the event code settings. An entry of all zeros for any event code will cause the communicator to NOT transmit the report. *Transmission of reports to either or both Central Station phone numbers may be disabled.*

Upon accessing the first event code address (address 145) shown in Table 3.2, the following may be displayed on the Programmer 7-Segment Display, if the corresponding Format was selected in address 20.

1451
(address) (data)

The first three locations on the left of the Programmer display represent the memory address **145** of the Format previously selected in address 20. The last location **1** (farthest right) represents the contents of memory address **145** (which is the first digit of the event code).

The following Tables list the data which is automatically programmed for each Format that can be selected in address 20. The addresses shown in each Table contain the Setting data which is automatically programmed by the 411UDAC. To change the value, key in the new digit and then press the **[ENTER/STORE]** key to save the new value. Use the **Up** and **Down Arrow** keys to increment to the next address or decrement to the previous address.

Ademco Contact ID Format Primary Central Station Event Codes

If 'E' is entered for address 20, the following data is automatically programmed for the Primary Central Station phone number event codes. Enter '000' for the Setting to disable the report to the Central Station. The Channel # is not programmable.

Address	Description	Setting	Channel/Input #
145 - 147	Primary # Input Channel 1 Active Event Code	111	001
148 - 150	Primary # Input Channel 2 Active Event Code	115	002
151 - 153	Primary # Input Channel 3 Active Event Code	111	003
154 - 156	Primary # Input Channel 4 Active Event Code	115	004
157 - 159	Primary # Input Channel 1 Fault Event Code	380	001
160 - 162	Primary # Input Channel 2 Fault Event Code	380	002
163 - 165	Primary # Input Channel 3 Fault Event Code	380	003
166 - 168	Primary # Input Channel 4 Fault Event Code	380	004
169 - 171	Primary # AC Voltage Fault Event Code	301	000
172 - 174	Primary # Earth Fault Event Code	310	000

Table 3.1 Ademco Contact ID Format - Primary

Address	Description	Setting	Channel/Input #
175 -177	Primary # Low Battery Fault Event Code	302	000
178 - 180	Primary # No Battery Fault Event Code	311	000
181 - 183	Primary # Phone Line 1 Voltage Fault Event Code	351	000
184 - 186	Primary # Phone Line 2 Voltage Fault Event Code	352	000
187 - 189	Primary # NAC Fault Event Code	321	000
190 - 192	Primary # Charger Fault Event Code	300	000
193 - 195	Primary # Phone Number 1 Communication Fault Event Code	354	001
196 - 198	Primary # Phone Number 2 Communication Fault Event Code	354	002
199 - 201	Primary # System Off Normal Fault Event Code	308	000
202 - 204	Primary # System Test Message	602	000
205 - 207	Primary # System Abnormal Test Message	608	000
208 - 210	Primary # Upload/Download Request Code	411	000
211 - 213	Primary # Upload Successful Code	416	000
214 - 216	Primary # Download Successful Code	412	000
217 - 219	Primary # Upload/Download Failed Code	413	000

Table 3.1 Ademco Contact ID Format - Primary

4+2 Standard and 4+2 Express Formats Primary Central Station Event Codes

If ‘1, A or C’ is entered for address 20, the following data is automatically programmed for the Primary Central Station phone number event codes. Enter '00' for the Setting to disable the report to the Central Station.

Address	Description	Setting
145 - 146	Primary # Input Channel 1 Active Event Code	11
147 - 148	Primary # Input Channel 2 Active Event Code	12
149 - 150	Primary # Input Channel 3 Active Event Code	13
151 - 152	Primary # Input Channel 4 Active Event Code	14
153 - 154	Primary # Input Channel 1 Fault Event Code	F1
155 - 156	Primary # Input Channel 2 Fault Event Code	F2
157 - 158	Primary # Input Channel 3 Fault Event Code	F3
159 - 160	Primary # Input Channel 4 Fault Event Code	F4
161 - 162	Primary # AC Fault Event Code	92
163 - 164	Primary # Earth Fault Event Code	61
165 - 166	Primary # Low Battery Fault Event Code	62
167 - 168	Primary # No Battery Fault Event Code	63
169 - 170	Primary # Phone Line 1 Voltage Fault Event Code	64
171 - 172	Primary # Phone Line 2 Voltage Fault Event Code	65
173 - 174	Primary # NAC Fault Event Code	66
175 - 176	Primary # Charger Fault Event Code	47
177 - 178	Primary # Phone Number 1 Communication Fault Event Code	6A
179 - 180	Primary # Phone Number 2 Communication Fault Event Code	6B
181 - 182	Primary # System Off Normal Fault Event Code	6F
183 - 184	Primary # Input Channel 1 Active Restore Code	E1
185 - 186	Primary # Input Channel 2 Active Restore Code	E2
187 - 188	Primary # Input Channel 3 Active Restore Code	E3
189 - 190	Primary # Input Channel 4 Active Restore Code	E4
191 - 192	Primary # Input Channel 1 Fault Restore Code	D1
193 - 194	Primary # Input Channel 2 Fault Restore Code	D2
195 - 196	Primary # Input Channel 3 Fault Restore Code	D3

Table 3.2 4+2 Standard and 4+2 Express Formats - Primary

Address	Description	Setting
197 - 198	Primary # Input Channel 4 Fault Restore Code	D4
199 - 200	Primary # AC Voltage Fault Restore Code	93
201 - 202	Primary # Earth Fault Restore Code	A1
203 - 204	Primary # Low Battery Fault Restore Code	A2
205 - 206	Primary # No Battery Fault Restore Code	A3
207 - 208	Primary # Phone Line 1 Voltage Fault Restore Code	A4
209 - 210	Primary # Phone Line 2 Voltage Fault Restore Code	A5
211 - 212	Primary # NAC Fault Restore Code	A6
213 - 214	Primary # Charger Fault Restore Code	57
215 - 216	Primary # Phone Number 1 Communication Fault Restore Code	AA
217 - 218	Primary # Phone Number 2 Communication Fault Restore Code	AB
219 - 220	Primary # System Off Normal Restore Code	AF
221 - 222	Primary # System Test Message	99
223 - 224	Primary # System Abnormal Test Message	91
225 - 226	Primary # Upload/Download Request Code	71
227 - 228	Primary # Upload Successful Code	72
229 - 230	Primary # Download Successful Code	73
231 - 232	Primary # Upload/Download Failed Code	74

Table 3.2 4+2 Standard and 4+2 Express Formats - Primary

All 3+1, 4+1 and 4+2 Expanded Formats Primary Central Station Event Codes

If ‘0, 2, 3, 4, 5, 6, 7, 8, 9, B or D’ is entered for address 20, the following data is automatically programmed for the Primary Central Station phone number event codes. Enter '0' for the Setting to disable the report to the Central Station.

Address	Description	Setting
145	Primary # Input Channel 1 Active Event Code	1
146	Primary # Input Channel 2 Active Event Code	1
147	Primary # Input Channel 3 Active Event Code	1
148	Primary # Input Channel 4 Active Event Code	1
149	Primary # Input Channel 1 Fault Event Code	F
150	Primary # Input Channel 2 Fault Event Code	F
151	Primary # Input Channel 3 Fault Event Code	F
152	Primary # Input Channel 4 Fault Event Code	F
153	Primary # AC Power Fault Event Code	9
154	Primary # Earth Fault Event Code	6
155	Primary # Low Battery Fault Event Code	6
156	Primary # No Battery Fault Event Code	6
157	Primary # Phone Line 1 Voltage Fault Event Code	6
158	Primary # Phone Line 2 Voltage Fault Event Code	6
159	Primary # NAC Fault Event Code	6
160	Primary # Charger Fault Event Code	4
161	Primary # Phone Number 1 Communication Fault Event Code	6
162	Primary # Phone Number 2 Communication Fault Event Code	6
163	Primary # System Off Normal Fault Code	6
164	Primary # Input Channel 1 Active Restore Code	E
165	Primary # Input Channel 2 Active Restore Code	E
166	Primary # Input Channel 3 Active Restore Code	E
167	Primary # Input Channel 4 Active Restore Code	E
168	Primary # Input Channel 1 Fault Restore Code	D
169	Primary # Input Channel 2 Fault Restore Code	D
170	Primary # Input Channel 3 Fault Restore Code	D

Table 3.3 All 3+1, 4+1 and 4+2 Expanded Formats - Primary

Address	Description	Setting
171	Primary # Input Channel 4 Fault Restore Code	D
172	Primary # AC Voltage Fault Restore Code	9
173	Primary # Earth Fault Restore Code	A
174	Primary # Low Battery Fault Restore Code	A
175	Primary # No Battery Fault Restore Code	A
176	Primary # Phone Line 1 Voltage Fault Restore Code	A
177	Primary # Phone Line 2 Voltage Fault Restore Code	A
178	Primary # NAC Fault Restore Code	A
179	Primary # Charger Fault Restore Code	
180	Primary # Phone Number 1 Communication Fault Restore Code	A
181	Primary # Phone Number 2 Communication Fault Restore Code	A
182	Primary # System Off Normal Restore Code	A
183	Primary # System Test Message	9
184	Primary # System Abnormal Test Message	F *
185	Primary # Upload/Download Request Code	7
186	Primary # Upload Successful Code	7
187	Primary # Download Successful Code	7
188	Primary # Upload/Download Failed Code	7

Table 3.3 All 3+1, 4+1 and 4+2 Expanded Formats - Primary

* For Formats ‘B’ and ‘D’, this address is defaulted to ‘9’ instead of ‘F.’

Primary Central Station Number Account Code (21 - 24)

The four locations at addresses 21 - 24 default to all '0's. Valid entries are 0 - 9 and A - F. The number of digits entered must match the format selection. If programming '2, 3, 4 or 5' into address 20, enter three digits (one digit each in locations 21, 22 and 23 - location 24 is ignored). If programming '0, 1, 6, 7, 8, 9, A, B, C, D or E' into address 20, enter four digits (one each in locations 21, 22, 23 and 24).

Primary Central Station Number 24 Hour Test Time (25 - 28)

Use military time when entering the 24 hour 'test' time. The 24 hour test report to phone number 1 takes up four locations, from addresses 25 - 28. The default is 00:00 (12:00 midnight). The limits for each location are as follows (do not use values of A - F as entries).

25: enter 0, 1 or 2

26: enter 0 - 9

27: enter 0 - 5

28: enter 0 - 9

Primary Central Station Number 24/12/8/6 Hour Test Time Interval (29)

The test report sent to the Primary phone number may be sent every 6, 8, 12 or 24 hours. If the message is to be sent every 24 hours, leave the factory default entry of '0'. If other test report times are needed, enter 1 = 12 hour, 2 = 8 hour or 3 = 6 hour.

Secondary Central Station Phone Number (30 - 49)

Addresses **30 - 49** are factory set to 'F' (**30_F to 49_F**). Programming is typically done as follows:

- ✓ If your phone number is 484-7161, press **4**.
- ✓ The display will read **30_4**.
- ✓ Press **[ENTER/STORE]** to save the entry to memory and increment to the next address **31_F**.

✓ Enter the remaining numbers in their respective addresses as shown below:

Entry	4	8	4	7	1	6	1	F	F	F	F	F	F	F	F	F	F	F	F	F
Address	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49

Valid entries for both the primary and secondary phone numbers are 0 to 9 and A to F with the numeric digits as dialed numbers and the hexadecimal digits representing the following functions:

- A = * on a Touch-Tone phone keypad
- B = # on a Touch-Tone phone keypad
- C = look for secondary dial tone for up to two seconds (then dial anyway)
- D = three second pause
- E = five second pause
- F = end of phone number (Note: F must remain in all unused phone number addresses)

If the first digit of the Secondary Central Station Phone Number remains ‘F’ and the digital communicator is enabled for transmission to a Central Station, a secondary phone number fault will be generated. The phone number must begin with a digit other than ‘F.’

Secondary Central Station Number Communication Format (50)

One location is needed to select the Communication Format to the secondary phone number. Address 50 is used for this purpose. The factory default setting for this address is 'E', which is Contact ID Format. You may enter '0' through 'D' in place of the default, then press **[ENTER/STORE]**. Choose from the list of formats below:

0: 4+1 Ademco Express Standard, DTMF, 1400/2300 ACK
1: 4+2 Ademco Express Standard, DTMF, 1400/2300 ACK
2: 3+1 Standard 1800 Hz Carrier, 2300 Hz ACK
3: 3+1 Expanded 1800 Hz Carrier, 2300 Hz ACK
4: 3+1 Standard 1900 Hz Carrier, 1400 Hz ACK
5: 3+1 Expanded 1900 Hz Carrier, 1400 Hz ACK
6: 4+1 Standard 1800 Hz Carrier, 2300 Hz ACK
7: 4+1 Expanded 1800 Hz Carrier, 2300 Hz ACK
8: 4+1 Standard 1900 Hz Carrier, 1400 Hz ACK
9: 4+1 Expanded 1900 Hz Carrier, 1400 Hz ACK
A: 4+2 Standard 1800 Hz Carrier, 2300 Hz ACK
B: 4+2 Expanded 1800 Hz Carrier, 2300 Hz ACK
C: 4+2 Standard 1900 Hz Carrier, 1400 Hz ACK
D: 4+2 Expanded 1900 Hz Carrier, 1400 Hz ACK
E: Contact ID, DTMF, 1400/2300 ACK
F: Future use

The Format selected in address 50 will cause the 411UDAC to automatically program addresses 229 - 312 with the factory default settings. Any of the Event Code settings may be altered. Consult your Central Station prior to altering the event code settings. An entry of all zeros for any event code will cause the communicator to NOT transmit the report. *Transmission of reports to either or both Central Station phone numbers may be disabled.*

Refer to “Central Station Communications” on page 54 for information on Format reporting.

Upon accessing the first event code address which is 229 (Table 3.5, "4+2 Standard and 4+2 Express Formats - Secondary," on page 43), the following may be displayed on the Programmer's 7-Segment Display, if the corresponding Format was selected in address 50.

2291
(address) (data)

The first three locations on the left of the Programmer's display represent the memory address **229**. The last location **1** (farthest right) represents the contents of memory address **229** which is the first digit of the event code.

The following Tables list the data which is automatically programmed for each Format that can be selected in address 50. The addresses shown in each Table contain the event code Setting data which is automatically programmed by the 411UDAC. To change the value, key in the new digits and then press the **[ENTER/STORE]** key to save the new value. Use the **Up** and **Down Arrow** keys to increment to the next address or decrement to the previous address.

Ademco Contact ID Format Secondary Central Station Event Codes

If 'E' is entered for address 50, the following data is automatically programmed for the Secondary Central Station phone number event codes. Enter '000' for the Setting to disable the report to the Central Station.

Address	Description	Setting	Channel/Input #
233 - 235	Secondary # Input Channel 1 Active Event Code	111	001
236 - 238	Secondary # Input Channel 2 Active Event Code	115	002
239 - 241	Secondary # Input Channel 3 Active Event Code	111	003
242 - 244	Secondary # Input Channel 4 Active Event Code	115	004
245 - 247	Secondary # Input Channel 1 Fault Event Code	380	001
248 - 250	Secondary # Input Channel 2 Fault Event Code	380	002
251 - 253	Secondary # Input Channel 3 Fault Event Code	380	003
254 - 256	Secondary # Input Channel 4 Fault Event Code	380	004
257 - 259	Secondary # AC Voltage Fault Event Code	301	000
260 - 262	Secondary # Earth Fault Event Code	310	000
263 - 265	Secondary # Low Battery Fault Event Code	302	000
266 - 268	Secondary # No Battery Fault Event Code	311	000
269 - 271	Secondary # Phone Line 1 Voltage Fault Event Code	351	000
272 - 274	Secondary # Phone Line 2 Voltage Fault Event Code	352	000
275 - 277	Secondary # NAC Fault Event Code	321	000
278 - 280	Secondary # Charger Fault Event Code	300	000
281 - 283	Secondary # Phone Number 1 Communication Fault Event Code	354	001
284 - 286	Secondary # Phone Number 2 Communication Fault Event Code	354	002
287 - 289	Secondary # System Off Normal Fault Event Code	308	000
290 - 292	Secondary # System Test Message	602	000
293 - 295	Secondary # System Abnormal Test Message	608	000
296 - 298	Secondary # Upload/Download Request Code	411	000
299 - 301	Secondary # Upload Successful Code	416	000
302 - 304	Secondary # Download Successful Code	412	000
305 - 307	Secondary # Upload/Download Failed Code	413	000

Table 3.4 Ademco Contact ID Format - Secondary

4+2 Standard and 4+2 Express Formats Secondary Central Station Event Codes

If 1, A or C is entered for address 50, the following data is automatically programmed for the Secondary Central Station phone number event codes. Enter '00' for the Setting to disable the report to the Central Station.

Address	Description	Setting
233 - 234	Secondary # Input Channel 1 Active Event Code	11
235 - 236	Secondary # Input Channel 2 Active Event Code	12
237 - 238	Secondary # Input Channel 3 Active Event Code	13
239 - 240	Secondary # Input Channel 4 Active Event Code	14
241 - 242	Secondary # Input Channel 1 Fault Event Code	F1
243 - 244	Secondary # Input Channel 2 Fault Event Code	F2
245 - 246	Secondary # Input Channel 3 Fault Event Code	F3
247 - 248	Secondary # Input Channel 4 Fault Event Code	F4
249 - 250	Secondary # AC Fault Event Code	92
251 - 252	Secondary # Earth Fault Event Code	61
253 - 254	Secondary # Low Battery Fault Event Code	62
255 - 256	Secondary # No Battery Fault Event Code	63
257 - 258	Secondary # Phone Line 1 Voltage Fault Event Code	64
259 - 260	Secondary # Phone Line 2 Voltage Fault Event Code	65
261 - 262	Secondary # NAC Fault Event Code	66
263 - 264	Secondary # Charger Fault Event Code	47
265 - 266	Secondary # Phone Number 1 Communication Fault Event Code	6A
267 - 268	Secondary # Phone Number 2 Communication Fault Event Code	6B
269 - 270	Secondary # System Off Normal Fault Event Code	6F
271 - 272	Secondary # Input Channel 1 Active Restore Code	E1
273 - 274	Secondary # Input Channel 2 Active Restore Code	E2
275 - 276	Secondary # Input Channel 3 Active Restore Code	E3
277 - 278	Secondary # Input Channel 4 Active Restore Code	E4
279 - 280	Secondary # Input Channel 1 Fault Restore Code	D1
281 - 282	Secondary # Input Channel 2 Fault Restore Code	D2
283 - 284	Secondary # Input Channel 3 Fault Restore Code	D3
285 - 286	Secondary # Input Channel 4 Fault Restore Code	D4
287 - 288	Secondary # AC Voltage Fault Restore Code	93
289 - 290	Secondary # Earth Fault Restore Code	A1
291 - 292	Secondary # Low Battery Fault Restore Code	A2
293 - 294	Secondary # No Battery Fault Restore Code	A3
295 - 296	Secondary # Phone Line 1 Voltage Fault Restore Code	A4
297 - 298	Secondary # Phone Line 2 Voltage Fault Restore Code	A5
299 - 300	Secondary # NAC Fault Restore Code	A6
301 - 302	Secondary # Charger Fault Restore Code	57
303 - 304	Secondary # Phone Number 1 Communication Fault Restore Code	AA
305 - 306	Secondary # Phone Number 2 Communication Fault Restore Code	AB
307 - 308	Secondary # System Off Normal Restore Code	AF
309 - 310	Secondary # System Test Message	99
311 - 312	Secondary # System Abnormal Test Message	91
313 - 314	Secondary # Upload/Download Request Code	71
315 - 316	Secondary # Upload Successful Code	72
317 - 318	Secondary # Download Successful Code	73
319 - 320	Secondary # Upload/Download Failed Code	74

Table 3.5 4+2 Standard and 4+2 Express Formats - Secondary

All 3+1, 4+1 and 4+2 Expanded Formats Secondary Central Station Event Codes

If 0, 2, 3, 4, 5, 6, 7, 8, 9, B or D is entered for address 50, the following data is automatically programmed for the Secondary Central Station phone number event codes. Enter '0' for the Setting to disable the report to the Central Station.

Address	Description	Setting
233	Secondary # Input Channel 1 Active Event Code	1
234	Secondary # Input Channel 2 Active Event Code	1
235	Secondary # Input Channel 3 Active Event Code	1
236	Secondary # Input Channel 4 Active Event Code	1
237	Secondary # Input Channel 1 Fault Event Code	F
238	Secondary # Input Channel 2 Fault Event Code	F
239	Secondary # Input Channel 3 Fault Event Code	F
240	Secondary # Input Channel 4 Fault Event Code	F
241	Secondary # AC Power Fault Event Code	9
242	Secondary # Earth Fault Event Code	6
243	Secondary # Low Battery Fault Event Code	6
244	Secondary # No Battery Fault Event Code	6
245	Secondary # Phone Line 1 Voltage Fault Event Code	6
246	Secondary # Phone Line 2 Voltage Fault Event Code	6
247	Secondary # NAC Fault Event Code	6
248	Secondary # Charger Fault Event Code	4
249	Secondary # Phone Number 1 Communication Fault Event Code	6
250	Secondary # Phone Number 2 Communication Fault Event Code	6
251	Secondary # System Off Normal Fault Code	6
252	Secondary # Input Channel 1 Active Restore Code	E
253	Secondary # Input Channel 2 Active Restore Code	E
254	Secondary # Input Channel 3 Active Restore Code	E
255	Secondary # Input Channel 4 Active Restore Code	E
256	Secondary # Input Channel 1 Fault Restore Code	D
257	Secondary # Input Channel 2 Fault Restore Code	D
258	Secondary # Input Channel 3 Fault Restore Code	D
259	Secondary # Input Channel 4 Fault Restore Code	D
260	Secondary # AC Voltage Fault Restore Code	9
261	Secondary # Earth Fault Restore Code	A
262	Secondary # Low Battery Fault Restore Code	A
263	Secondary # No Battery Fault Restore Code	A
264	Secondary # Phone Line 1 Voltage Fault Restore Code	A
265	Secondary # Phone Line 2 Voltage Fault Restore Code	A
266	Secondary # NAC Fault Restore Code	A
267	Secondary # Charger Fault Restore Code	5
268	Secondary # Phone Number 1 Communication Fault Restore Code	A
269	Secondary # Phone Number 2 Communication Fault Restore Code	A
270	Secondary # System Off Normal Restore Code	A
271	Secondary # System Test Message	9
272	Secondary # System Abnormal Test Message	F *
273	Secondary # Upload/Download Request Code	7
274	Secondary # Upload Successful Code	7
275	Secondary # Download Successful Code	7
276	Secondary # Upload/Download Failed Code	7

Table 3.6 All 3+1, 4+1 and 4+2 Expanded Formats - Secondary

* For Formats ‘B’ and ‘D’, this address is defaulted to ‘9’ instead of ‘F.’

Secondary Central Station Number Account Code (51 - 54)

The four locations at addresses 51 - 54 default to all '0's. Valid entries are 0 - 9 and A - F. The number of digits entered must match the format selection. If programming '2, 3, 4 or 5' into address 50, enter three digits (one digit each in locations 51, 52 and 53 - location 54 is ignored). If programming '0, 1, 6, 7, 8, 9, A, B, C, D or E' into address 50, enter four digits (one each in locations 51, 52, 53 and 54).

Secondary Central Station Number 24 Hour Test Time (55 - 58)

Use military time when entering the 24 hour 'test' time. The 24 hour test report to phone number 1 takes up four locations, from addresses 55 - 58. The default is 00:00 (12:00 midnight). The limits for each location are as follows (do not use values of A - F as entries):

55: enter 0, 1 or 2

56: enter 0 - 9

57: enter 0 - 5

58: enter 0 - 9

Secondary Central Station Number 24/12/8/6 Hour Test Time Interval (59)

The test report sent to the Secondary phone number may be sent every 6, 8, 12 or 24 hours. If the message is to be sent every 24 hours, leave the factory default entry of '0'. If other test report times are needed, enter 1 = 12 hour, 2 = 8 hour or 3 = 6 hour.

AC Loss Reporting Delay (60)

Enter a digit of 0 - 9 or A - F corresponding to the number of hours to be delayed in reporting the loss of AC power. The factory default is '2' for 2 hours. The valid entries are '0' = no delay; '1' = 1 hours; '2' = 2 hours; '3' = 6 hours; '4' = 7 hours; '5' = 8 hours; '6' = 9 hours; '7' = 10 hours; '8' = 11 hours; '9' = 12 hours; 'A' = 13 hours; 'B' = 14 hours; 'C' = 15 hours; 'D' = 16 hours; 'E' = 17 hours; 'F' = 18 hours.

UL requires a 1-3 hour delay.

Backup Reporting (61)

Leaving address 61 at '0' means that reports will be transmitted to the secondary Central Station phone number only if attempts to communicate to the primary Central Station phone number are unsuccessful. Programming a '1' causes all reports to be transmitted to both the primary and secondary Central Station phone numbers. Programming a '2' causes reports to go to the first available receiver.

Do not alter this entry while the digital communicator is active!

Reserved for Future Use (62)

DACT Trouble Reminder (63)

The factory default entry of '0' in address location 63 disables the trouble reminder feature. Selecting '1' for location 63 will cause a reminding beep (after the Silence switch is pressed) every 15 seconds for active alarms and every two minutes during a DACT trouble condition. The beeps from the onboard piezo sounder will occur until the alarm or DACT fault is cleared. The piezo sounder will begin beeping at a rate of one second On and one second Off after 24 hours unless the DACT fault has been cleared.

Operational Mode Selection (64)

The factory default setting is ‘0’ for latching inputs and the onboard communicator disabled. This prevents the unit from transmitting status information to the Central Station(s).

Address 64 Setting	411UDAC Operational Mode	411UDAC Function
0	Stand-alone/Communicator Disabled	latching inputs/onboard communicator disabled
1	Stand-alone/Communicator Enabled	latching inputs/onboard communicator enabled
2	Slave/Communicator Enabled	non-latching inputs/onboard communicator enabled
3	Slave/Communicator Disabled	non-latching inputs/onboard communicator disabled

Table 3.7 411UDAC Operational Modes

Input Channel 1 Function Selection (65)[1]

Factory default for Channel 1 is '0' for activation on fire alarm (2 or 4-wire smoke). Enter '1' for pull station; '2' for normally open contact device; '3' for host panel trouble; '4' for fire supervisory; '5' for fire supervisory autoresettable; '6' for waterflow silenceable; '7' for waterflow nonsilenceable.

Input Channel 2 Function Selection (66)[1]

Factory default for Channel 2 is '1' for pull station. Enter '2' for normally open contact device; '3' for host panel trouble; '4' for fire supervisory; '5' for fire supervisory autoresettable; '6' for waterflow silenceable; '7' for waterflow nonsilenceable.
Note that '0' is not a valid entry.

Input Channel 3 Function Selection (67)[1]

Factory default for Channel 3 is '0' for activation on fire alarm (2 or 4-wire smoke). Enter '1' for pull station; '2' for normally open contact device; '3' for host panel trouble; '4' for fire supervisory; '5' for fire supervisory autoresettable; '6' for waterflow silenceable; '7' for waterflow nonsilenceable.

Input Channel 4 Function Selection (68)[1]

Factory default for Channel 4 is '1' for pull station. Enter '2' for normally open contact device; '3' for host panel trouble; '4' for fire supervisory; '5' for fire supervisory autoresettable; '6' for waterflow silenceable; '7' for waterflow nonsilenceable.
Note that '0' is not a valid entry.

Input Channel 1 Delay Timer (69 - 71)[2]

The Delay Timer is used to delay digital communicator transmission to a Central Station when the Input Channel is activated. Input Channel 1 Delay Timer is factory set to '000' seconds for no delay. The timer may be programmed for a delay of from 0 to 179 seconds. *Inputs programmed for fire alarm, pull station, host control panel trouble and fire supervisory, must not be delayed. A delay, therefore, cannot be selected for inputs programmed for these fire applications.* If the input is set for a waterflow function, the delay timer will also delay activation of the relay, piezo sounder and LEDs.

Input Channel 2 Delay Timer (72 - 74)[2]

The Delay Timer is used to delay digital communicator transmission to a Central Station when the Input Channel is activated. Input Channel 2 Delay Timer is factory set to '000' seconds for no delay. The timer may be programmed for a delay of from 0 to 179 seconds. *Inputs programmed for fire alarm, pull station, host control panel trouble and fire supervisory, must not be delayed. A*

1. Changing the input function will automatically change the corresponding Primary and Secondary event codes to reflect the new input function. The Communication Format should be programmed first, followed by the Input Channel Function. See “Events and Default Event Codes” on page 79.
2. This timer does not delay LED or Output Relay activation and is not used for channels programmed as AC Loss circuits.

delay, therefore, cannot be selected for inputs programmed for these fire applications. If the input is set for a waterflow function, the delay timer will also delay activation of the relay, piezo sounder and LEDs.

Input Channel 3 Delay Timer (75 - 77)[1]

The Delay Timer is used to delay digital communicator transmission to a Central Station when the Input Channel is activated. Input Channel 3 Delay Timer is factory set to '000' seconds for no delay. The timer may be programmed for a delay of from 0 to 179 seconds. *Inputs programmed for fire alarm, pull station, host control panel trouble and fire supervisory, must not be delayed. A delay, therefore, cannot be selected for inputs programmed for these fire applications.* If the input is set for a waterflow function, the delay timer will also delay activation of the relay, piezo sounder and LEDs.

Input Channel 4 Delay Timer (78 - 80)[1]

The Delay Timer is used to delay digital communicator transmission to a Central Station when the Input Channel is activated. Input Channel 4 Delay Timer is factory set to '000' seconds for no delay. The timer may be programmed for a delay of from 0 to 179 seconds. *Inputs programmed for fire alarm, pull station, host control panel trouble and fire supervisory, must not be delayed. A delay, therefore, cannot be selected for inputs programmed for these fire applications.* If the input is set for a waterflow function, the delay timer will also delay activation of the relay, piezo sounder and LEDs.

Touchtone/Rotary Select for Primary Phone (81)

A '0' programmed in this address by the factory, triggers Touchtone dialing over the primary phone line. Select '1' for rotary dialing.

Make/Break Ratio for Primary Phone (82)

This address is used only if a '1' has been programmed for address 81. The Make/Break ratio is factory set to '0' which is 67/33 ratio, but may be changed to '1' which is 62/38 ratio.

Touchtone/Rotary Select for Secondary Phone (83)

A '0' programmed in this address by the factory, triggers Touchtone dialing over the secondary phone line. Select '1' for rotary dialing.

Make/Break Ratio for Secondary Phone (84)

This address is used only if a '1' has been programmed for address 83. The Make/Break ratio is factory set to '0' which is 67/33 ratio, but may be changed to '1' which is 62/38 ratio.

Output Relay #1 Enable (85)

The factory default setting for Output Relay #1 is '0' for disabled. Enter '1' to enable the relay.

Output Relay #1 Function Selections (86)

The Output Relay can be programmed to activate for any one of six conditions. The factory default for address 86 is '0' for activation on fire alarm. Program a '1' for host panel trouble; '2' for DACT trouble; '3' for latching fire supervisory; '4' for autoresettable fire supervisory; '8' for total communication failure.

Output Relay #2 Enable (87)

The factory default setting for Output Relay #2 is '0' for disabled. Enter '1' to enable the relay.

1. This timer does not delay LED or Output Relay activation and is not used for channels programmed as AC Loss circuits.

Output Relay #2 Function Selections (88)

Output Relay #2 can be programmed to activate for any one of six conditions. The factory default for address 88 is '2' for activation on DACT trouble. Program a '0' for activation on fire alarm; '1' for host panel trouble; '3' for latching fire supervisory; '4' for autoresettable fire supervisory; '8' for total communication failure.

Reserved for Future Use (89)

Leave default setting of '0'

Panel Unlock (90)

The communicator must be unlocked to accept a remote upload/download. Leaving the default setting of '0' will require the unlock code **8655** be entered for each data transfer session (30 minute timeout). Enter '1' to keep the communicator in a permanent unlocked state.

Alarm Verification Enable (91)

Alarm verification works only on zones programmed as 2 or 4-wire smoke detector zones (i.e. zones 1 and 3). After detecting an alarm, the panel removes power from two or four-wire smoke zones, resetting all 2 or 4-wire smoke detectors. Power is reapplied and a 18 second restart period allows detectors to stabilize. During the retard/reset/restart period of 25 seconds, subsequent alarms by the same initiating zone are ignored. An alarm detected on any other 2 or 4-wire detector zone during the restart period will cause immediate verified alarms. A subsequent alarm on the initiating zone occurring within the confirmation time will cause a verified alarm.

NOTE: Mixing devices on zones designated as 2 or 4-wire smoke zones is not recommended. The communicator will not transmit a signal to the Central Station signifying that alarm verification is in progress.

During the alarm verification period, access to other modes of operation is prevented.

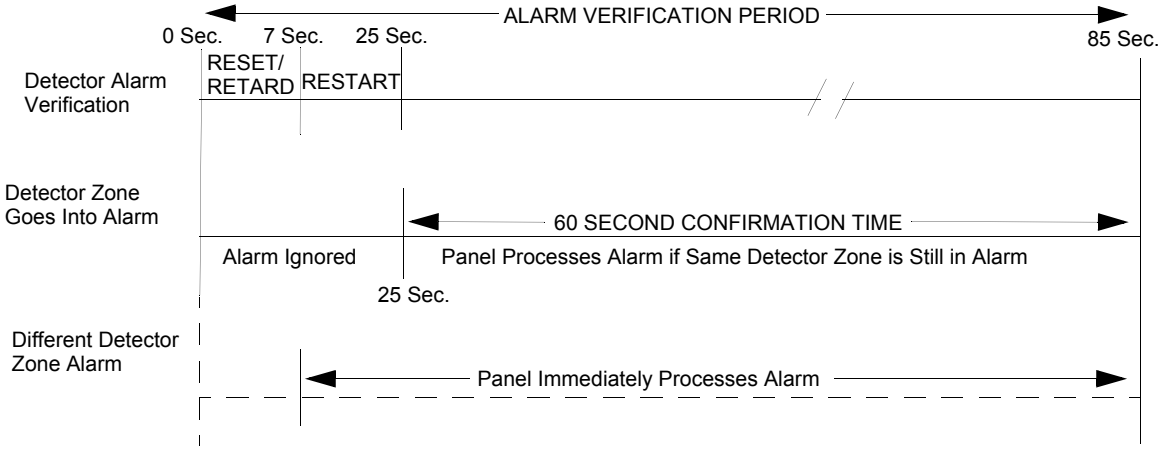


Figure 3.2 Verification Timing Diagram

Factory Default is no verification which is an entry of '0'. Entering '1' enables verification. Alarm Verification is ignored if the 411UDAC is configured for nonlatching Slave Communicator operation or Test Mode.

NOTE: Consult local Authority Having Jurisdiction (AHJ) prior to altering this address.

Silence Inhibit Notification Appliance Circuit (92)

Setting address 92 to '1' prevents the silencing or resetting of the Notification Appliance Circuit for one minute following an alarm. The factory default setting is '0' for no silence inhibit.

Autosilence Notification Appliance Circuit (93)

The Notification Appliance Circuit may be autosilenced after a programmed time interval between 5 and 30 minutes. Enter '1' for 5 minute autosilence; '2' for 10 minutes; '3' for 15 minutes; '4' for 20 minutes; '5' for 25 minutes; '6' for 30 minutes. The factory default is '0' for no autosilence.

Restoral Method (94)

Restoral Method refers to the *communication* of Restoral Events to a Central Station. It has no effect on the actual input circuit restoral itself.

- Typical Restoral Method - '0' entry programs the panel to transmit each input circuit restoral, as it occurs, to the Central Station. In Slave Mode, this means that as soon as an input restores, the communicator will immediately transmit the Restoral Event to the Central Station. In Stand-alone Mode, the restoral of inputs programmed as Autoresettable Supervisory will also cause the communicator to transmit a Restoral Event immediately. All other input types in Stand-alone Mode are latching and their restoral will not communicate a Restoral Event until the Reset Switch is pressed.
- Conditional Restoral Method #1 - '1' entry programs the panel to transmit each input circuit restoral, as it occurs, to the Central Station. In Slave Mode, this means that as soon as an input restores, the communicator will immediately transmit the Restoral Event to the Central Station. In Stand-alone Mode, the restoral of inputs programmed as Autoresettable Supervisory will also cause the communicator to transmit a Restoral Event immediately. All other input types in Stand-alone Mode are latching and the communication of their Restoral Events are dependent upon an after-reset condition.
  The input circuit must be physically clear of an input short upon completion of the reset period. If, and only if, the input circuit is normal (clear of an input short) after the reset period will the communicator transmit a Restoral Event to the Central Station. If the input circuit remains active after the reset period, no transmission will take place.
- Conditional Restoral Method #2 - '2' entry programs the panel to transmit each input circuit restoral if, and only if, *all* input circuits are normal (clear of an input short). In Slave Mode, this means that as soon as *all* input circuits are restored, the communicator will transmit the Restoral Event(s) to the Central Station. In Stand-alone Mode, the restoral of inputs programmed as either Autoresettable Supervisory will cause the communicator to transmit a Restoral Event if, and only if, all input circuits are normal[1]. All other input types in Stand-alone Mode are latching and the communication of their Restoral Events are dependent upon an after-reset condition. If, and only if, all input circuits are normal (clear of an input short) after the reset period will the communicator transmit a Restoral Event(s) to the Central Station. If *any* input circuit remains active after the reset period, no transmission will take place, *even if other input circuits are truly restored.*

1. Latching input circuits will never restore in Stand-alone Mode until the Reset Switch is pressed. If both an Autoresettable input circuit and a Latching input circuit are activated and subsequently cleared, only the Autoresettable input circuit will restore, but no transmission will occur to the Central Station since there is still an input circuit active (the Latching input circuit).

Table 3.8 describes the events that would take place after the reset period, according to each unique Communicator Restoral Method. It is assumed that an input circuit is active before reset.

Input Circuit After Reset	Typical Restoral Method	Conditional Restoral Method #1	Conditional Restoral Method #2
SHORTED	All local annunciation of the active event stops. The short is rediscovered after reset period and local annunciation begins again.* The panel communicates: 1. A Restoral Event 2. An Active Event†	All local annunciation of the active event stops. The short is rediscovered after reset period and local annunciation begins again.* The panel communicates nothing because this input is still in an active state after reset.	All local annunciation of the active event stops. The short is rediscovered after reset period and local annunciation begins again.* The panel communicates nothing because an input (can be any input) is still in an active state after reset.
NOT SHORTED	All local annunciation of the active event stops. The circuit is found to be in a normal state. The panel communicates: 1. A Restoral Event	All local annunciation of the active event stops. The circuit is found to be in a normal state. The panel communicates: 1. A Restoral Event	All local annunciation of the active event stops. The circuit is found to be in a normal state. *If, and only if, <u>all</u> input circuits are found to be in a normal state* will the panel communicate: 1. A Restoral Event Otherwise, the panel will communicate nothing.

Table 3.8 Restoral Methods

* Local annunciation is dependent upon input circuit function. Inputs programmed as waterflow devices will not annunciate until the waterflow retard period has expired. Inputs programmed as 2 or 4-wire smoke devices, with the Alarm Verification feature enabled, will not annunciate until the alarm is verified.

† Inputs programmed with a delay will not communicate the Active Event until the delay period has expired.

Coding, Notification Appliance Circuit (95)

Coding of the Notification Appliance Circuit is selectable as ‘0’ for no coding (steady) or ‘1’ for Temporal (½ second On, ½ second Off, ½ second On, ½ second Off, ½ second On, 1½ second Off). Factory default is ‘0’ for no coding (steady). *Note that this NAC should only be used to supplement host panel NACs.*

Trouble Call Limit - Dialer Runaway Prevention (96)

Factory default setting of '0' in address 96, allows the digital communicator to call the Central Station each time any DACT trouble and any active Channel programmed for host panel trouble is detected by the 411UDAC. Programming a '1' in this address enables the Trouble Call Limit feature, which limits the number of 411UDAC and Input Channel Trouble calls to the Central Station to 10 calls for each unique trouble event within a 24 hour period. Separate limit counters keep track of each unique type of trouble (e.g. open input channel). To clear the limit counters, disable and then enable this location. Note that the number of phone line (communication) faults called to the Central Station are not limited by this feature. No subsequent restoral message is sent to the Central Station(s) for a particular trouble whose limit of 10 calls has been reached. Local DACT annunciation will still track the particular trouble and restoral.

Panel Identification Number (97 - 100)

The Panel Identification Number is a 4-digit code (valid digits are 0 to F) that is used to identify the installed panel. It is important to program this 4-digit code at the job site the first time that downloading is performed so that the called Service Terminal can identify the panel. The Factory default is '0000'. (Future Use).

Service Terminal 1 Phone Number (101 - 120)

Addresses 100 - 119 are reserved for the Service Terminal Number 1 phone number. Factory default is all 'F's. Valid entries are 0 - 9 plus A, B, C, D and E. Use 'F' to designate the end of the phone number. See “Remote Site Upload/Download” on page 60 for additional information.

Ring Count on Primary Phone Line (121 - 122)

Use this address to designate the number of rings allowed on the primary phone line prior to answering an incoming call from the Service Terminal. Factory default is '3' meaning the communicator will not answer an incoming call until 3 rings are detected. This entry may be programmed up to a maximum of '25' rings. A setting of '00' prevents the communicator from answering incoming calls.

FAX/Answer Machine, Primary Phone Line (123)

This entry is used when the primary phone line is being shared with a FAX, answering machine or other device. Factory default is '0' for no sharing of the primary phone line. An entry of '1' indicates that another device is sharing the primary phone line. The communicator will wait for three consecutive calls from the Service Terminal spaced 30 seconds apart, before responding. Sharing of phone lines requires the prior approval of the AHJ (Authority Having Jurisdiction).

Service Terminal 2 Phone Number (124 - 143)

Addresses 123 - 142 are reserved for the Service Terminal Number 2 phone number. Factory default is all 'F's. Valid entries are 0 - 9 plus A, B, C, D and E. Use 'F' to designate the end of the phone number. See “Remote Site Upload/Download” on page 60 for additional information.

Upload/Download Reports Sent to Secondary Central Station Phone #, Backup or Always (144)

Leaving address 144 programmed to the factory default setting of '0' means that reports for request for 'upload/download' and 'failed upload/download' will be sent to the secondary Central Station phone number only if attempts to the primary Central Station phone number are unsuccessful. Programming a '1' causes all reports to be transmitted to both primary and secondary phone numbers. Programming a '2' causes reports to be sent to the first available receiver.
Do not alter entry while the communicator is active.

Programming Event Code Settings (145 - 312)

Event Code Settings, corresponding to the Formats selected for the Primary Central Station phone number in address 20 and the Secondary Central Station phone number in address 50, are automatically set to factory default values. Refer to *Table 3.1, “Ademco Contact ID Format - Primary,” on page 37*, *Table 3.2, “4+2 Standard and 4+2 Express Formats - Primary,” on page 38*, and *Table 3.3, “All 3+1, 4+1 and 4+2 Expanded Formats - Primary,” on page 39* for format designated by address 20. Refer to Table 3.4, “Ademco Contact ID Format - Secondary,” on page 42, Table 3.5, “4+2 Standard and 4+2 Express Formats - Secondary,” on page 43, and Table 3.6, “All 3+1, 4+1 and 4+2 Expanded Formats - Secondary,” on page 44 for format designated by address 50. The Event Code Settings can be altered. *Consult your Central Station prior to changing the event code settings.*

3.5 Default Mode

To return all program entries, including the upload/download secret password and time, to their factory original settings, perform the following steps only when the system is idle (i.e. the communicator is not active) and there are no active fire alarms or fire supervisories in the system:

Press the **MODE** key followed by the 4-digit code **3337** and press the **[ENTER/STORE]** key.

3337 spells DEFP (**DEF**ault **P**rogramming) on a Touch-Tone® phone.

If an incorrect key is entered, reenter the proper 4-digit code before pressing the **[ENTER/STORE]** key. Within five seconds, repeat this entry by again pressing the **MODE** key followed by the 4-digit code **3337** and pressing the **[ENTER/STORE]** key. The display will read **LinP**. Enter your 4-digit password. When reprogramming is complete, the real time clock will display.

3.6 Troubleshoot Mode

In this mode, system status may be displayed on the 4-character display of the PRO-411. An internal voltmeter measures the voltage present at the channel/inputs, AC power input, and Notification Appliance Circuit. A lack of keyboard activity for a period of 20 minutes will cause the panel to return to Normal Mode.

To access the Troubleshoot Mode, press the **MODE** key followed by the digits 8768 and then the **[ENTER/STORE]** key.

8768 spells TROU on a Touch-Tone® phone.

Once in this mode, the 411UDAC will continue to communicate any events not yet acknowledged at a central station prior to entering Troubleshoot Mode. The **UP** arrow and **DOWN** arrow keys do not function in this mode.

All status displays in Troubleshoot Mode are shown in real-time, which means the display will update automatically as the status changes.

Channel/Inputs

Pressing **1** through **4** followed by the **[ENTER/STORE]** key on the PRO-411 displays the input status of the selected channel. Listed below are the status display and corresponding nominal threshold voltages, as measured across B+ and B-, for each zone:

Channel #	Normal with ELR	Shorted	Open Circuit
1 through 4 (status)	n	A	F
1 and 3 (voltage)	11.5V	0V	12.0V
2 and 4 (voltage)	5.0V	0V	12.0V

Where n = normal, A = active, and F = fault (or open)

AC Line

Pressing **A** followed by the **[ENTER/STORE]** key will display the AC input voltage as shown below. The following lists the AC line voltage range. The AC Power LED will turn off and the trouble LED will turn on when the AC line voltage drops below the Low Line threshold.

AC Line Voltage	Low Line	Normal	High Line
	102 VAC	115 VAC	132 VAC

Notification Appliance Circuit

Pressing **8** followed by the **[ENTER/STORE]** key will display the status of the Notification Appliance Circuit. Listed below are the status display and corresponding nominal threshold voltages for the NAC measured across B+ and B-:

NAC	Normal with ELR	Shorted	Open Circuit
status	n	S	O
voltage	-1.0V	0V	-5.5V

Where n = normal, S = shorted, and O = open

Telephone Line Testing

Press **C** for touchtone dialing or **D** for rotary dialing, followed by **[ENTER/STORE]**.

The Programmer keypad may be used as a telephone touchpad for number dialing. Once the first digit is pressed, the display will move the **C** or **D** character one position to the left, while placing the next digit to be dialed on the farthest right display position. Continue to press the phone numbers to be dialed. The dialer stores the digits as they are pressed. Press **1st EVENT** to go off hook and dial the stored digits. Pressing **[ENTER/STORE]** after dialing has started will terminate dialing. Successive depressions of the **1st EVENT** key hangs up and picks up the phone (places the phone on or off the hook).

The secondary phone line may be tested by pressing the **E** key for touchtone dialing or the **F** key for rotary dialing and then following the same procedure used for the primary phone line. A handset may be temporarily connected across transformer T1 of the 411UDAC as indicated in Figure 3.1. The handset, when connected across T1, may be used only as an amplifier/speaker or telephone with the keypad used for number dialing.

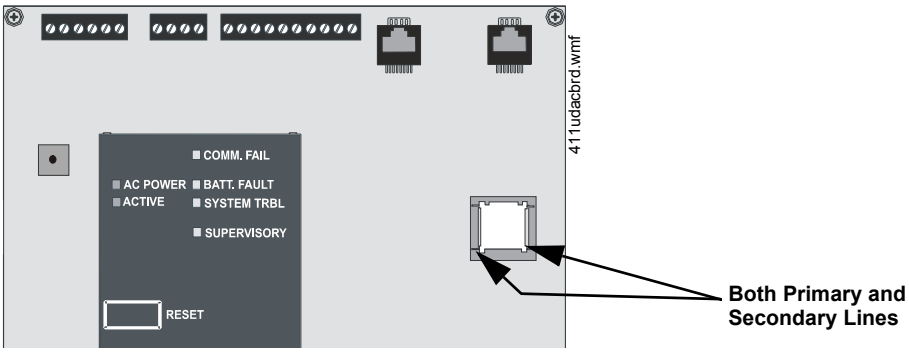


Figure 3.1 Handset/Speaker Connection

Section 4: Central Station Communications

The 411UDAC transmits system status reports to Central Stations via the public switched telephone network. Two supervised telephone line connections are made to interface the communicator to the telephone lines. Two 7-foot telephone cords P/N MCBL-7 may be used for this purpose (not supplied - order separately).

The digital communicator supervises both telephone lines for proper voltage. A delay of two minutes will occur before a fault in either phone line connection is reported as a trouble. When a fault is detected, an audible trouble signal will sound, the yellow Trouble LED will turn on, the optional trouble relay will activate if programmed for DACT trouble and the trouble condition will be reported to a central station over the remaining good phone line.

The digital communicator comes with line seizure capability provided for both the primary and secondary telephone line interfaces. Any time that the DACT needs to make a call to a central station, line seizure will disconnect any local premises phones sharing the same telephone line. All transmissions to central stations will be sent over the Primary Central Station phone line. In the event of noisy phone lines, transmissions will be sent over the backup Secondary phone line.

Two phone numbers must be programmed, the Primary Central Station phone number and the Secondary Central Station phone number. There are three options for transmission to the Central Station:

- All reports are always sent to the Primary Central Station phone number with the Secondary Central Station number for emergency backup purposes only
- All reports are sent to both Central Station phone numbers
- Reports are sent to the first available Central Station phone number only

The digital communicator is capable of reporting detailed messages depending upon the Format in use. Table 4.1 shows the data reporting structure for each of the pulsed formats as well as the Ademco Express Formats. Ademco Express Formats allow a typical data message to be transmitted to the Central Station in under 5 seconds. Pulsed formats typically require 15 to 20 seconds in comparison. Table 4.2 defines each letter code used in Table 4.1 . See “Ademco Contact ID Format Event Code Description” on page 57 for a description of the data reporting structure for Ademco Contact ID Format.

	Format # 0, 2, 4, 6, 8	**Format # 3, 5, 7, 9**	**Format # 1, A, C**	**Format # B, D**
Report	3+1/4+1/Standard 4+1 Express	3+1/4+1/Expanded	4+2/Standard 4+2 Express	4+2/Expanded
Fire Alarm	SSS(S) FA	SSS(S) FA FAFAFA(FA) 2	SSSS FAFA2	SSSS FAZ
Fire Alarm Restore	SSS(S) RFA	SSS(S) RFA RFARFARFA (RFA) 2	SSSS RFARFA2	SSSS RFAZ
Channel/Input Trouble (Channel/Input Open)	SSS(S) TZ	SSS(S) TZ TZTZTZ(TZ) Z	SSSS TZTZ2	SSSS TZZ
Channel/Input Trouble Restore	SSS(S) RTZ	SSS(S) RTZ RTZRTZRTZ(RTZ) Z	SSSS RTZRTZ2	SSSS RTZZ
System Trouble	SSS(S) TS	SSS(S) TS TSTSTS(TS) Y	SSSS TSTS2	SSSS TSY
System Trouble Restore	SSS(S) RTS	SSS(S) RTS RTSRTSRTS(RTS) Y	SSSS RTSRTS2	SSSS RTSY
AC Loss	SSS(S) P	SSS(S) P PPP(P) Z	SSSS PP2	SSSS PP2
AC Loss Restore	SSS(S) RP	SSS(S) RP RPRPRP(RP) Z	SSSS RPRP2	SSSS RPRP2
Fire Supervisory Condition	SSS(S) V	SSS(S) V VVV(V) Z	SSSS VV2	SSSS VZ
Fire Supervisory Condition Restore	SSS(S) RV	SSS(S) RV RVRVR(RV) Z	SSSS RVRV2	SSSS RVZ
Test Report	SSS(S) X	SSS(S) X	SSSS XX2	SSSS XX2
Up or Download	SSS(S) UD	SSS(S) UD	SSS UDUD2	SSS UDUD2

Table 4.1 Format Selection Addresses (20 and 50) Programming

Where:			
SSS or SSSS		=	Subscriber ID
FA		=	Fire Alarm (1st digit)
FA2		=	Fire Alarm (2nd digit)
Z		=	Channel/Input Number
RFA		=	Fire Alarm Restore (1st digit)
RFA2		=	Fire Alarm Restore (2nd digit)
TZ		=	Zone Trouble (1st digit)
TZ2		=	Zone Trouble (2nd digit)
RTZ		=	Zone Trouble Restore (1st digit)
RTZ2		=	Zone Trouble Restore (2nd digit)
TS		=	System Trouble (1st digit)
TS2		=	System Trouble (2nd digit)
RTS		=	System Trouble Restore (1st digit)
RTS2		=	System Trouble Restore (2nd digit)
P		=	AC Loss (1st digit)
P2		=	AC Loss (2nd digit)
RP		=	AC Loss Restore (1st digit)
RP2		=	AC Loss Restore (2nd digit)
V		=	Fire Supervisory Condition (1st digit)
V2		=	Fire Supervisory Condition (2nd digit)
RV		=	Fire Supervisory Condition Restore (1st digit)
RV2		=	Fire Supervisory Condition Restore (2nd digit)
X		=	Test Report (1st digit)
X2		=	Test Report (2nd digit)
Y		=	Trouble corresponding to the following:
	1	=	Not Used
	2	=	Not Used
	3	=	Not Used
	4	=	Telco Primary Line Fault
	5	=	Telco Secondary Line Fault
	6	=	Not Used
	7	=	Not Used
	8	=	Not Used
	9	=	Not Used
	A	=	Communication Failure Primary Number
	B	=	Communication Failure Secondary Number
	C	=	Not Used
	D	=	Not Used
	E	=	Not Used
	F	=	Not Used
UD		=	Upload/Download (1st digit)
UD2		=	Upload/Download (2nd digit)

Table 4.2 Format Selection Address Explanation

Note that for Expanded Reporting, the digital communicator automatically adds the digit corresponding to the Channel/Input number, and the second digit corresponding to any system trouble condition. Only the first digit shown in Table 3.3 and Table 3.6 is programmable.

4.1 Transmittal Priorities

The digital communicator transmits highest priority events first. Events in terms of priority are listed below in descending order:

1. Fire Alarm (highest priority level)
2. Fire Supervisory
3. System Troubles
   - Host Panel Trouble (active input programmed for trouble)
   - AC Fail (after delay)
   - Channel/Input faults
   - Telephone line fault
   - Communication trouble
   - System Off Normal
4. Restoral Reports
   - Fire Alarm
   - Fire Supervisory
   - Host Panel Trouble
   - AC
   - Channel/Input fault
   - Telephone line
   - Communication
   - System Off Normal
5. System Test
6. Upload/Download events (lowest priority)

4.2 Ademco Contact ID Format Event Code Description

This section describes the various Event Codes and their messages which are available for the Ademco Contact ID Format. The reporting structure for the Ademco Contact ID Format is as follows:

SSSS 18 QXYZ GG CCC

Where:		
SSSS	=	Four digit Subscriber ID Account Code (addresses 21 - 24 and 51 - 54)
18	=	Identifies transmission as Contact ID to the receiver at the Central Station
Q	=	Event Qualifier where 1 = New Event and 3 = New Restore
XYZ	=	Event code (shown in Tables)
GG	=	Group number
CCC	=	Channel/Input number

Notes:

1. **18**, which is used in the reporting structure to identify the transmission as Contact ID, is not printed out in the alarm and trouble report.
2. **Q**, which is the Event Qualifier for the reporting structure, is printed out in the report as an E for New Event or R for New Restore.
3. GG Group Number is fixed at '00' and cannot be changed.
4. CCC Channel/Input Number is transmitted as '001' for Channel/Input 1, '002' for Channel/Input 2, '003' for Channel/Input 3, '004' for Channel/Input 4.

Ademco Contact ID Reporting Structure

A typical printout from a Central Station receiver (such as the Ademco 685) of alarm and trouble reports in the Ademco Contact ID Reporting Structure follows:

Time	Date	Rcvr/Line ID	SSSS	QXYZ	GG	CCCC
11:28	03/25	11	7777	E110	00	C001 - general fire alarm on Channel/Input 1
11:28	03/25	11	7777	E111	00	C002 - smoke detector alarm on Channel/Input 2
11:28	03/25	11	7777	E380	00	C003 - fault on Channel/Input 3
11:28	03/25	11	7777	R110	00	C001 - Channel/Input 1 alarm restored
11:28	03/25	11	7777	R111	00	C002 - smoke detector Channel/Input 2 restored
11:28	03/25	11	7777	R380	00	C003 - Channel/Input 3 fault restored
11:28	03/25	11	7777	E158	00	C004 - high temperature, Channel/Input 4
11:28	03/25	11	7777	E151	00	C004 - gas detected, Channel/Input 4

The following table contains UL listed receivers compatible with the 411UDAC's onboard DACT.

Format # (Addresses 20 and 50)		FBI CP220FB (1)	Ademco 685 (2)	Silent Knight 9000 (3)	Silent Knight 9800 (4)	Osborne Hoffman 2000E (5)	Radionics 6600 (6)	Surgard System III (7)	Surguard MLR-2 (8)	Surguard MR-2000 (9)	Ademco MX8000 (10)
0	4+1 Ademco Express	✔	✔		✔	✔	✔	✔	✔	✔	✔
1	4+2 Ademco Express	✔	✔		✔	✔	✔	✔	✔	✔	✔
2	3+1/Standard/1800/2300	✔	✔	✔	✔	✔				✔	✔
3	3+1/Expanded/1800/2300	✔	✔	✔	✔	✔				✔	✔
4	3+1/Standard/1900/1400	✔	✔	✔	✔	✔				✔	✔
5	3+1/Expanded/1900/1400	✔	✔	✔	✔	✔				✔	✔
6	4+1/Standard/1800/2300		✔	✔	✔	✔		✔	✔	✔	✔
7	4+1/Expanded/1800/2300		✔	✔	✔	✔		✔	✔	✔	✔
8	4+1/Standard/1900/1400		✔	✔	✔	✔		✔	✔	✔	✔
9	4+1/Expanded/1900/1400		✔	✔	✔	✔		✔	✔	✔	✔
A	4+2/Standard/1800/2300	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
B	4+2/Expanded/1800/2300	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
C	4+2/Standard/1900/1400	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
D	4+2/Expanded/1900/1400	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
E	Ademco Contact ID	✔	✔		✔	✔	✔	✔	✔	✔	✔

Table 4.3 Compatible UL Listed Receivers

(1) With version 3.9 software.

(2) With 685-8 Line Card with Rev. 4.4d software.

(3) With 9002 Line Card Rev. 9035 software or 9032 Line Card with 9326A software.

(4) With 124077V2.00 Receiver and 126047 Line Card Rev. M.

(5) With V.7301 Receiver S/W.

(6) With 01.01.03 Receiver S/W and Line Card 01.01.03.

(7) Surgard System III software version 1.6.

(8) Surgard MLR-2 software version 1.86.

(9) With DSP4016 and V1.6 Line Card.

(10) With 124060V206B and 124063 Line Card Rev. B

IMPORTANT! It is the installer's responsibility to ensure that the Digital Alarm Communicator/Transmitter is compatible with the Central Station Receiver, utilized by the monitoring service, prior to installation. The Compatibility Table provides a list of compatible receivers and associated software versions for the receivers. Changes in the hardware and/or software by the receiver manufacturers may affect the receiver compatibility with the DACT. After completing the installation, communication between the DACT and Central Station Receiver must be tested and verified.

Section 5: Remote Site Upload/Download

The 411UDAC may be programmed off site via the public switched telephone network. Any personal computer with Windows® XP or greater Upload/Download software P/N PK-411UD (available on PK-CD or online), may serve as a Service Terminal. For details on the remote site upload/download software package, refer to the *PK-411UD Manual*. The Upload/Download software allows the following:

- Download of the entire program
- Upload of the entire program
- Upload current status, system voltages or time
- Real-time upload of current status or system voltages
- Download new time

CAUTION: ERROR CHECKING
CHANGES TO PROGRAM ENTRIES OCCUR AS A RESULT OF THE DOWNLOADING PROCESS. AFTER SUCCESSFUL DOWNLOADING, MAKE CERTAIN TO PERFORM THE FOLLOWING STEPS:

1. Manually view programmed entries and compare to intended program data.
2. Test all affected system operations.
3. Immediately correct any problems found.

5.1 General

Any time that the digital communicator is contacted, a secret code (factory default 0000) is verified between the digital communicator and the Service Terminal. Changing the Secret Code may only be accomplished at the Service Terminal and subsequently loaded into the panel. Future upload or download requests cause verification of the Secret Code by the communicator before processing of data is allowed. If the Secret Code is not verified, the communicator will terminate the request immediately.

In order to contact the communicator, the following must be true:

✓ The digital communicator may be in any mode of operation including Normal, Program, Real Time Clock, Troubleshoot or Lamp Test. Downloading is not possible if the communicator is active during Central Station communications or while testing the phone lines while in Troubleshoot Mode.

✓ The digital communicator must be unlocked so it can accept a remote upload/download. Entering mode **8655** (UNLK) will unlock the panel for 30 minutes. Refer to "Panel Unlock (90)" for other programming options.

✓ There cannot be any active communications ongoing with a Central Station receiver.

✓ All active events must be successfully 'kissed-off' by the Central Station(s). The digital communicator must be in a standby state with no new information waiting to be transmitted to a Central Station.

Two basic communication mechanisms are supported as follows:

- Contact with callback - The Service Terminal calls the digital communicator. The communicator answers the call, confirms the calling party then hangs-up. The Service Terminal then waits for a callback from the communicator. After the digital communicator calls the Central Station and successfully reports that a request has been received, the communicator calls the Service Terminal back. Upon secret code verification, data transfers occur. When the data transfers are completed and the Service Terminal disconnects from the communicator, the digital communicator calls the Central Station back to confirm either successful or unsuccessful results.

- Contact with callback disabled - The Service Terminal calls the communicator. No hang-up sequence occurs. Data transfers proceed.

Note that Callback enable/disable is controlled by the master user at the Service Terminal on a per call basis.

With program address location 64 set to '1' in Program Mode, anytime a contact with callback is initiated, the communicator will first either contact the primary Central Station or contact both the primary and secondary Central Stations or contact the first available Central Station phone number to report a 'request for upload/download' message (depending upon the program entry in address location 137). Once the request is 'kissed-off' by the Central Station(s), the communicator will then call the appropriate Service Terminal and begin the downloading process.

With program address location 64 set to '1' in Program Mode, anytime a contact with callback disabled is initiated, the communicator and the Service Terminal will communicate and transfer data without first contacting a Central Station. When the data transfers are completed and the communicator disconnects from the Service Terminal, the communicator will call the Central Station and report one of the following:

- Upload/download request received
- Upload and/or download successful
- Upload/download failed

To prevent the 'request for upload/download' message(s) from being reported to the Central Station(s), make certain to set address 64 to ‘0’ or ‘3’ or disable all upload/download reports back to both Central Stations. Refer to Table 3.2 on page 38 through Table 3.4, “Ademco Contact ID Format - Secondary,” on page 42 for additional information.

Unlike most competitive products, during the downloading process, the input monitoring and 411UDAC supervision remain active. Should an input activation or system trouble occur, the communicator immediately terminates downloading, processes the trouble or alarm locally and transmits the information to the Central Station(s).

5.1.1 Security Features

Remote site upload and download with the 411UDAC have been carefully designed to include key security features to ensure proper functionality. The key features are listed and explained below.

Secret Code Verification

A secret code is stored in the communicator by a Service Terminal to prevent unauthorized access. The secret code is created at the Service Terminal by a Master user and cannot be viewed or changed by anyone other than a Master user. Viewing of the secret code is prohibited at the communicator. Prior to allowing an upload or download of data, the communicator will verify the secret code transmitted by the Service Terminal.

Panel Unlock

The communicator must be in an unlocked state to accept a remote upload/download. Entering the 4 digit code will unlock the panel for a period of 30 minutes, unless otherwise programmed.

Time-out at 411UDAC

Upon answering an incoming call on the primary Central Station phone line, the communicator will listen for a modem connection signal. If this signal is not received within 30 seconds, the communicator will disconnect the call. Upon successful connection (i.e. secret code verified and callback complete if applicable), if no communication occurs within two minutes, the communicator will disconnect the call.

Callback to Service Terminal

Any time that the communicator is remotely requested to allow an upload or download with call-back, it will confirm the source of the incoming call, hang-up and call the calling party (Service Terminal phone number) back.

Error Checking

As each block of data is received by the communicator, it is checked for accuracy. If an error is detected, the block is retransmitted until correct, up to a maximum of four times. If the Secret Code is not verified and four errors occur, the call is disconnected and the report that the upload/download was not successful is called to the Central Station(s).

Central Station Acknowledge

There is an option whereby the communicator will report to one or both Central Stations that a request for uploading or downloading has been received prior to processing the call. This is called the 'callback' option. If the Central Station(s) does not acknowledge receipt of this request, uploading or downloading is prohibited. If acknowledged by the Central Station(s), another message is transmitted informing the Central Station(s) that:

- downloading was successful
- uploading was successful
- uploading/downloading was not successful

Data Protection/Integrity

Programming data is completely verified for accuracy prior to reprogramming of the 411UDAC EEPROM. Incomplete or corrupted data packets are ignored or retried.

5.2 Downloading to the Communicator

Before initiating the download procedure, make certain that the communicator is unlocked and in the standby state.

Once an incoming call is accepted/answered by the communicator, the 411UDAC will:

1. Establish basic modem connection
2. Verify secret code
3. Verify callback vs. no callback request from the Service Terminal. If callback is requested, perform steps 4 through 10; if no callback is requested, perform steps 9 and 10 only
4. Verify product type
5. Identify the Service Terminal location
6. Hang-up/disconnect call
7. Call the Central Station(s) and transmit a request for upload/download message (if programmed to do so). If this message is accepted, the communicator will proceed to the next step
8. Return call to the Service Terminal
9. Verify secret code
10. Verify Product type
11. Begin downloading
12. Upon completion of download, call the Central Station(s) back and report a successful download or failed upload/download status (if programmed to do so).

5.3 Uploading From the Communicator

Items that may be uploaded from the communicator to a Service Terminal are:

- All or portions of programmed data plus the real time clock

- Troubleshoot system voltages in real-time or as a 'snapshot'
- Current system status in real-time continuous or as a 'snapshot'

Uploading is possible at any time provided the following conditions are true:

✓ The communicator may be in any mode of operation. Uploading is not possible if the communicator is active or while testing the phone lines while in Troubleshoot Mode.

✓ There cannot be any active communications ongoing with a Central Station receiver.

✓ All active events must be successfully 'kissed-off' by the Central Station(s). The communicator must be in a standby state with no new information waiting to be transmitted to a Central Station.

Once an incoming call is accepted/answered by the communicator, the 411UDAC will:

1. Establish basic modem connection
2. Verify secret code
3. Verify callback vs. no callback request from the Service Terminal. If callback is requested, perform steps 4 through 10; if no callback is requested, perform steps 9 and 10 only
4. Verify product type
5. Identify the Service Terminal location
6. Hang-up/disconnect call
7. Call the Central Station(s) and transmit a request for upload/download message (if programmed to do so). If this message is accepted, the communicator will proceed to the next step
8. Return call to the Service Terminal
9. Verify secret code
10. Verify product type
11. Begin downloading
12. Upon completion of download, call the Central Station(s) back and report a successful download or failed upload/download status (if programmed to do so).

Unlike most competitive products, during the uploading process, the 411UDAC fire protection remains active. Should a system trouble or alarm condition occur, the communicator immediately terminates uploading and processes the trouble or alarm locally and transmits the information to the Central Station(s).

5.4 Simultaneous Data Transfers

Uploading and downloading may take place on a single telephone call. Control and selection of the data transaction is coordinated at the Service Terminal. This eliminates multiple phone calls, allows instant verification of downloaded data files and simplifies the overall process.

Section 6: Battery Calculations

Use the Total Standby and Alarm Load Currents calculated in Tables 6.2, and 6.3, for the following battery calculations.

Standby Load Current in amps (from Table 6.2) [ ]	X	Required Standby Time in Hours (24 or 60 Hours) [ ]	=	_____
Alarm Load Current in amps (from Table 6.3) [ ]	X	Required Alarm Time in Hours (i.e. 5 min. = 0.084 Hours) [ ]	=	_____
Add Standby and Alarm Load for Required Ampere Hour Battery				_____
Multiplying by derating factor of 1.2				x 1.2
Total Ampere Hour Battery[1]			=	_____

Table 6.1 Battery Calculations

1. Select a battery with an Amp Hour rating greater than that calculated in Table 6.1.
   ✓ NFPA 72 for Central Station and Proprietary Protected Premises systems require 24 hours of standby
2. Two 12 VDC, 7 Amp Hour batteries, wired in parallel, can be located in the backbox to provide 14 Amp Hours of backup (refer to Figure 2.4 on page 22 for battery cable connections)

6.1 411UDAC Power Supply

The 411UDAC provides filtered power for operating the digital communicator, external devices and the battery charger. The power for operating external devices is limited. Use Table 6.2 (standby or nonalarm) and Table 6.3 (alarm) to determine if external loading is within the capabilities of the power supply.

Device Type	# of Devices		Current (amps)		Total Current (amps)
Main Circuit Board	1	X	0.150	=	0.150
2-wire Detector Heads	[ ]	X	[ ]	=	
4-wire Detector Heads	[ ]	X	[ ]	=	
Power Supervision Relays		X		=	
Additional Current Draw from 12 VDC Resettable	[ ]	X	[ ]	=	
		Sum Column for Standby Load		=	amps

Table 6.2 Load in Standby

Notes:

1. Refer to the *Device Compatibility Document* for compatible listed power supervision relays.
2. Refer to the *Device Compatibility Document* for 2-wire and 4-wire smoke detector standby current.

Device Type	# of Devices		Current (amps)		Total Current (amps)
Main Circuit Board	1	X	0.220	=	0.220
2-wire Detector Heads	[ ]	X	[ ]	=	
4-wire Detector Heads	[ ]	X	[ ]	=	
Power Supervision Relay	[ ]	X	0.025	=	
Notification Appliances	[ ]	X	[ ]	=	
Additional Current Draw from 12 VDC Resettable	[ ]	X	[ ]	=	
		Sum Column for Alarm Load		=	amps

Table 6.3 Load in Alarm

Notes:

1. Refer to the *Device Compatibility Document* for compatible listed power supervision relays.
2. Refer to the *Device Compatibility Document* for 2-wire and 4-wire smoke detector current.
3. Maximum available current for notification appliances is 1.0 amp
4. Maximum available current from resettable output is 0.200 amps
5. Total system current cannot exceed 1.6 amps

Appendix A: Programming Sheets

A.1 Digital Communicator Options Program Sheets

To enter Programming Mode, press the **MODE** key, **7764,** and then the **[ENTER/STORE]** key.

☐00 ☐01 ☐02 ☐03 ☐04 ☐05 ☐06 ☐07 ☐08 ☐09 ☐10 ☐11 ☐12 ☐13 ☐14 ☐15 ☐16 ☐17 ☐18 ☐19
Addresses 00 to 19 store the Primary Central Station phone number. *Enter 'F' to represent the end of number.*

☐20 Primary Central Station Communication Format: *Valid entries are 0 to 9 and A to F.*

☐21 ☐22 ☐23 ☐24 Primary Central Station Account Code: *Valid entries are 0 to 9 and A to F.*

☐25 ☐26 ☐27 ☐28 Primary Central Station 24-hour Test Time: *Use military time (i.e. 1400 for 2:00 PM).*

☐29 Primary Number Test Time Interval. Enter '0' for 24-hour; '1' for 12-hour; '2' for 8-hour; '3' for 6-hour.

☐30 ☐31 ☐32 ☐33 ☐34 ☐35 ☐36 ☐37 ☐38 ☐39 ☐40 ☐41 ☐42 ☐43 ☐44 ☐45 ☐46 ☐47 ☐48 ☐49
Addresses 30 to 49 store the Secondary Central Station phone number. *Enter 'F' to represent the end of number.*

☐50 Secondary Central Station Communication Format: *Valid entries are 0 to 9 and A to F.*

☐51 ☐52 ☐53 ☐54 Secondary Central Station Account Code: *Valid entries are 0 - 9 and A - F.*

☐55 ☐56 ☐57 ☐58 Secondary Central Station 24-hour Test Time: *Use military time (i.e. 1400 for 2:00 PM).*

☐59 Secondary Number Test Time Interval. Enter '0' for 24-hour; '1' for 12-hour; '2' for 8-hour; '3' for 6-hour.

☐60 AC Loss Reporting Delay. Enter '0' for no delay; '1' for 1 hours; '2' for 2 hours; '3' for 6 hours; '4' for 7 hours; '5' for 8 hours; '6' for 9 hours; '7' for 10 hours; '8' for 11 hours; '9' for 12 hours; 'A' for 13 hours; 'B' for 14 hours; 'C' for 15 hours; 'D' for 16 hours; 'E' for 17 hours; 'F' for 18 hours.

☐61 Backup Reporting. Enter '0' to report to Secondary phone number as backup only; '1' to report to both Primary and Secondary phone number for all reports/messages; '2' reports go to first available receiver.

☐62 Reserved for Future Use.

☐63 DACT Trouble Reminder. Enter '0' to disable; '1' to enable.

☐64 Operational Mode Selection. *Enter '0' for stand-alone/communicator disabled; '1' for stand-alone/communicator enabled; '2' for slave/communicator enabled; '3' for slave/communicator disabled. Default setting is '0'.*

☐65 Input Channel 1 Function Selection. Enter '0' for fire alarm; '1' for pull station; '2' for normally open contact; '3' for host panel trouble; '4' for supervisory; '5' for supervisory autoresettable; '6' for waterflow silenceable; '7' for waterflow nonsilenceable.

☐66 Input Channel 2 Function Selection. Enter '1' for pull station; '2' for normally open contact; '3' for host panel trouble; '4' for supervisory; '5' for supervisory autoresettable; '6' for waterflow silenceable; '7' for waterflow nonsilenceable.

☐67 Input Channel 3 Function Selection. Enter '0' for fire alarm; '1' for pull station; '2' for normally open contact; '3' for host panel trouble; '4' for supervisory; '5' for supervisory autoresettable; '6' for waterflow silenceable; '7' for waterflow nonsilenceable.

☐68 Input Channel 4 Function Selection. Enter '1' for pull station; '2' for normally open contact; '3' for host panel trouble; '4' for supervisory; '5' for supervisory autoresettable; '6' for waterflow silenceable; '7' for waterflow nonsilenceable.

☐69 ☐70 ☐71 Input Channel 1 Delay Timer. Enter 0 - 179 seconds delay. *Factory default is '000' for no delay. Does not delay Input Channels programmed for fire functions.*

☐72 ☐73 ☐74 Input Channel 2 Delay Timer. Enter 0 - 179 seconds delay. *Factory default is '000' for no delay. Does not delay Input Channels programmed for fire functions.*

☐75 ☐76 ☐77 Input Channel 3 Delay Timer. Enter 0 - 179 seconds delay. *Factory default is '000' for no delay. Does not delay Input Channels programmed for fire functions.*

☐78 ☐79 ☐80 Input Channel 4 Delay Timer. Enter 0 - 179 seconds delay. *Factory default is '000' for no delay. Does not delay Input Channels programmed for fire functions.*

☐81 Touchtone/Rotary Select for Primary Phone. Enter '0' for touchtone dialing; '1' for rotary dialing.

☐82 Make/Break Ratio for Primary Phone. Enter '0' for 67/33 ratio; '1' for 62/38 ratio.

☐83 Touchtone/Rotary Select for Secondary Phone. Enter '0' for touchtone dialing; '1' for rotary dialing.

☐84 Make/Break Ratio for Secondary Phone. Enter '0' for 67/33 ratio; '1' for 62/38 ratio.

☐85 Output Relay #1 enable. Enter '1' to enable Relay #1; '0' to disable relay.

☐86 Output Relay #1 Function. Enter '0' for relay to activate on alarm; '1' host panel trouble; '2' DACT trouble; '3' for latching fire supervisory; '4' for autoresettable fire supervisory; '7' (future use); '8' for total communication failure.

☐87 Output Relay #2 enable. Enter '1' to enable Relay #2; '0' to disable relay.

☐88 Output Relay #2 Function. Enter '0' for relay to activate on fire alarm; '1' host panel trouble; '2' for DACT trouble; '3' for latching fire supervisory; '4' for autoresettable fire supervisory; '7' (future use); '8' total communication failure.

☐89 Reserved for future use. Leave default setting of '0.'

☐90 Panel unlock. Enter '0' for password unlock, '1' for permanent unlock.

☐91 Alarm verification. Enter '0' for no verification; '1' for verification of all 2 or 4-wire smoke zones.

☐92 Silence inhibit. Enter '0' for no silence inhibit; '1' to inhibit silencing of NAC for one minute.

☐93 Autosilence. Enter '0' for no autosilence; '1' for 5 minute autosilence; '2' for 10 minutes; '3' for 15 minutes; '4' for 20 minutes; '5' for 25 minutes; '6' for 30 minutes.

☐94 Restoral method. Enter '0' for Typical restoral method; '1' for Conditional Restoral Method #1; '2' for Conditional Restoral Method #2.

☐95 Coding, Notification Appliance Circuit. Enter '0' for no coding (steady); '1' for Temporal coding.

☐96 Trouble Call Limit - Dialer Runaway Prevention Feature. Enter a '0' to disable this feature; '1' to enable Trouble Call Limit. Factory default is '0' for disabled.

☐97 ☐98 ☐99 ☐100 Panel Identification Number.

☐101 ☐102 ☐103 ☐104 ☐105 ☐106 ☐107 ☐108 ☐109 ☐110 ☐111 ☐112 ☐113 ☐114 ☐115 ☐116 ☐117 ☐118

☐119 ☐120 Addresses 101 to 120 store the Service Terminal 1 Phone Number. *Valid entries are 0 - 9 and A - E. 'F' designates the end of the phone number.*

☐121 ☐122 Ring Count on Primary Phone Line. Enter number of rings prior to panel answering call. *Valid entries are 00 to 25 (00 = no answer). Factory default is 03.*

☐123 FAX/Answer Machine, Primary Phone Line. Enter '0' for no sharing of phone line; '1' for sharing.

☐124 ☐125 ☐126 ☐127 ☐128 ☐129 ☐130 ☐131 ☐132 ☐133 ☐134 ☐135 ☐136 ☐137 ☐138 ☐139 ☐140 ☐141

☐142 ☐143 Addresses 124 to 143 store the Service Terminal 2 Phone Number. *Valid entries are 0-9 and A-E. 'F' designates the end of the phone number.*

☐144 Upload/Download Backup Reporting. Enter '0' for Upload/Download reports to go to the Secondary Central Station Phone Number on backup only; '1' for Upload/Download reports to always go to the Secondary; '2' for Upload/Download reports to go to the first available Central Station phone number.

A.2 Digital Communicator Options Program Sheet (Factory Defaults)

To enter Programming Mode, press the **MODE** key, **7764,** and then the **[ENTER/STORE]** key.

F$_{00}$ **F**$_{01}$ **F**$_{02}$ **F**$_{03}$ **F**$_{04}$ **F**$_{05}$ **F**$_{06}$ **F**$_{07}$ **F**$_{08}$ **F**$_{09}$ **F**$_{10}$ **F**$_{11}$ **F**$_{12}$ **F**$_{13}$ **F**$_{14}$ **F**$_{15}$ **F**$_{16}$ **F**$_{17}$ **F**$_{18}$ **F**$_{19}$

Addresses 00 to 19 store the Primary Central Station phone number. *Enter 'F' to represent the end of number.*

E$_{20}$ Primary Central Station Communication Format: *'E' for Ademco Contact ID Format.*

0$_{21}$ **0**$_{22}$ **0**$_{23}$ **0**$_{24}$ Primary Central Station Account Code.

0$_{25}$ **0**$_{26}$ **0**$_{27}$ **0**$_{28}$ Primary Central Station 24-hour Test Time: *'0000' = 12:00 midnight.*

0$_{29}$ Primary Number Test Time Interval. *'0' for 24-hours.*

F$_{30}$ **F**$_{31}$ **F**$_{32}$ **F**$_{33}$ **F**$_{34}$ **F**$_{35}$ **F**$_{36}$ **F**$_{37}$ **F**$_{38}$ **F**$_{39}$ **F**$_{40}$ **F**$_{41}$ **F**$_{42}$ **F**$_{43}$ **F**$_{44}$ **F**$_{45}$ **F**$_{46}$ **F**$_{47}$ **F**$_{48}$ **F**$_{49}$

Addresses 30 to 49 store the Secondary Central Station phone number. *Enter 'F' to represent the end of number.*

E$_{50}$ Secondary Central Station Communication Format: *'E' for Ademco Contact ID Format..*

0$_{51}$ **0**$_{52}$ **0**$_{53}$ **0**$_{54}$ Secondary Central Station Account Code:

0$_{55}$ **0**$_{56}$ **0**$_{57}$ **0**$_{58}$ Secondary Central Station 24-hour Test Time: *'0000' = 12:00 midnight.*

0$_{59}$ Secondary Number Test Time Interval. *'0' for 24-hours.*

2$_{60}$ AC Loss Reporting Delay. *'2' for 2 hour delay.*

0$_{61}$ Backup Reporting. *'0' to report to Secondary phone number as backup only.*

0$_{62}$ Reserved for Future Use.

0$_{63}$ DACT Trouble Reminder. *'0' disables trouble reminder.*

0$_{64}$ Operational Mode Selection. *'0' enables stand-alone mode, disables communication to Central Station.*

0$_{65}$ Input Channel 1 Function Selection. *'0' for fire alarm*.

1$_{66}$ Input Channel 2 Function Selection. *'1' for pull station alarm.*

0$_{67}$ Input Channel 3 Function Selection. *'0' for fire alarm*.

1$_{68}$ Input Channel 4 Function Selection. *'1' for pull station alarm.*

0$_{69}$ **0**$_{70}$ **0**$_{71}$ Input Channel 1 Delay Timer. *'000' for no delay. Does not delay fire functions.*

0$_{72}$ **0**$_{73}$ **0**$_{74}$ Input Channel 2 Delay Timer. *'000' for no delay. Does not delay fire functions.*

0$_{75}$ **0**$_{76}$ **0**$_{77}$ Input Channel 3 Delay Timer. *'000' for no delay. Does not delay fire functions.*

0$_{78}$ **0**$_{79}$ **0**$_{80}$ Input Channel 4 Delay Timer. *'000' for no delay. Does not delay fire functions.*

0$_{81}$ Touchtone/Rotary Select for Primary Phone. *'0' for touchtone dialing*.

0$_{82}$ Make/Break Ratio for Primary Phone. *'0' for 67/33 ratio.*

0$_{83}$ Touchtone/Rotary Select for Secondary Phone. *'0' for touchtone dialing*.

0$_{84}$ Make/Break Ratio for Secondary Phone. *'0' for 67/33 ratio.*

0$_{85}$ Output Relay #1 enable. *'0' to disable relay.*

0$_{86}$ Output Relay #1 Function. *'0' for activatation on fire alarm (2* or *4-wire smoke).*

0$_{87}$ Output Relay #2 enable. *'0' to disable relay.*

2$_{88}$ Output Relay #2 Function. *'2' for activation on DACT trouble.*

0$_{89}$ Reserved for future use. *Leave default setting of '0.'*

0$_{90}$ Panel unlock. *'0' for password unlock.*

0$_{91}$ Alarm verification. *'0' to disable.*

0$_{92}$ Silence inhibit. *'0' to disable.*

0$_{93}$ Autosilence. *'0' to disable.*

0$_{94}$ Restoral method. *'0' for Typical restoral method.*

0$_{95}$ Coding, Notification Appliance Circuit. *'0' for no coding (steady).*

0$_{96}$ Trouble Call Limit - Dialer Runaway Prevention Feature. *'0' for disabled feature.*

0$_{97}$ **0**$_{98}$ **0**$_{99}$ **0**$_{100}$ Panel Identification Number.

F$_{101}$ **F**$_{102}$ **F**$_{103}$ **F**$_{104}$ **F**$_{105}$ **F**$_{106}$ **F**$_{107}$ **F**$_{108}$ **F**$_{109}$ **F**$_{110}$ **F**$_{111}$ **F**$_{112}$ **F**$_{113}$ **F**$_{114}$ **F**$_{115}$ **F**$_{116}$ **F**$_{117}$ **F**$_{118}$

F$_{119}$ **F**$_{120}$ Addresses 101 to 120 store the Service Terminal 1 Phone Number. *Enter 'F' to represent the end of the phone number.*

0$_{121}$ **3**$_{122}$ Ring Count on Primary Phone Line. *'03' for number of rings before answering call.*

0$_{123}$ FAX/Answer Machine, Primary Phone Line. *'0' for no sharing of phone line.*

F$_{124}$ **F**$_{125}$ **F**$_{126}$ **F**$_{127}$ **F**$_{128}$ **F**$_{129}$ **F**$_{130}$ **F**$_{131}$ **F**$_{132}$ **F**$_{133}$ **F**$_{134}$ **F**$_{135}$ **F**$_{136}$ **F**$_{137}$ **F**$_{138}$ **F**$_{139}$ **F**$_{140}$ **F**$_{141}$

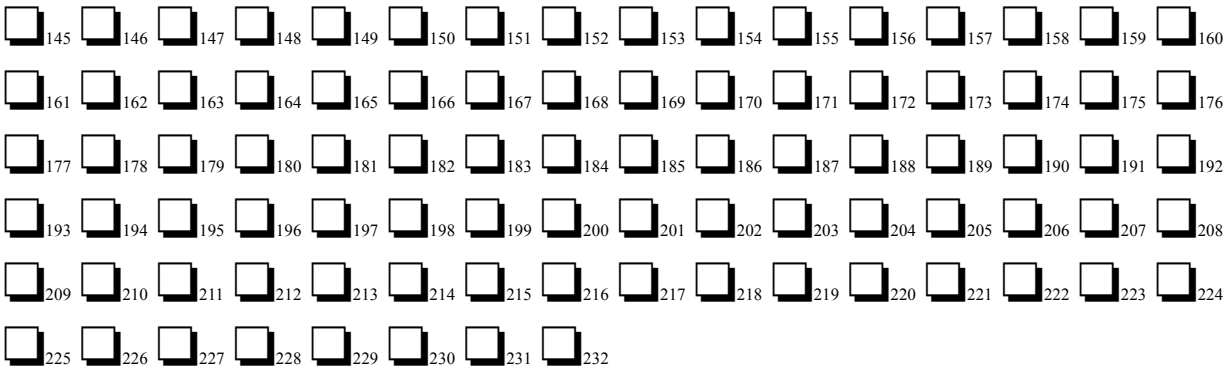
F$_{142}$ **F**$_{143}$ Addresses 124 to 143 store the Service Terminal 2 Phone Number. *Enter 'F' to represent the end of the phone number.*

0$_{144}$ Upload/Download Backup Reporting. *'0' for Upload/Download reports to go to the Secondary Central Station Phone Number on backup only.*

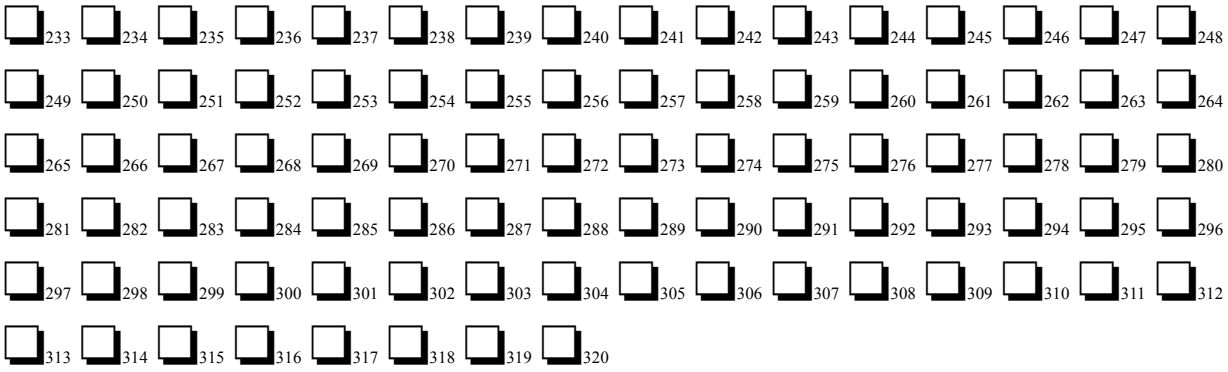
Appendix B: Event Codes/Transmission Format Programming Sheets

To enter Programming Mode, press the **MODE** key, **7764** and then the **[ENTER/STORE]** key.

B.1 4+2 Standard & 4+2 Express Formats Primary Central Station



B.2 4+2 Standard & 4+2 Express Formats Secondary Central Station



--To enter Programming Mode, press the **MODE** key, **7764** and then the **[ENTER/STORE]** key.

B.3 4+2 Standard & 4+2 Express Formats Primary Central Station

1145 **1**146 **1**147 **2**148 **1**149 **3**150 **1**151 **4**152 **F**153 **1**154 **F**155 **2**156 **F**157 **3**158 **F**159 **4**160
9161 **2**162 **6**163 **1**164 **6**165 **2**166 **6**167 **3**168 **6**169 **4**170 **6**171 **5**172 **6**173 **6**174 **4**175 **7**176
6177 **A**178 **6**179 **B**180 **6**181 **F**182 **E**183 **1**184 **E**185 **2**186 **E**187 **3**188 **E**189 **4**190 **D**191 **1**192
D193 **2**194 **D**195 **3**196 **D**197 **4**198 **9**199 **3**200 **A**201 **1**202 **A**203 **2**204 **A**205 **3**206 **A**207 **4**208
A209 **5**210 **A**211 **6**212 **5**213 **7**214 **A**215 **A**216 **A**217 **B**218 **A**219 **F**220 **9**221 **9**222 **9**223 **1**224
7225 **1**226 **7**227 **2**228 **7**229 **3**230 **7**231 **4**232

B.4 4+2 Standard & 4+2 Express Formats Secondary Central Station

1233 **1**234 **1**235 **2**236 **1**237 **3**238 **1**239 **4**240 **F**241 **1**242 **F**243 **2**244 **F**245 **3**246 **F**247 **4**248
9249 **2**250 **6**251 **1**252 **6**253 **2**254 **6**255 **3**256 **6**257 **4**258 **6**259 **5**260 **6**261 **6**262 **4**263 **7**264
6265 **A**266 **6**267 **B**268 **6**269 **F**270 **E**271 **1**272 **E**273 **2**274 **E**275 **3**276 **E**277 **4**278 **D**279 **1**280
D281 **2**282 **D**283 **3**284 **D**285 **4**286 **9**287 **3**288 **A**289 **1**290 **A**291 **2**292 **A**293 **3**294 **A**295 **4**296
A297 **5**298 **A**299 **6**300 **5**301 **7**302 **A**303 **A**304 **A**305 **B**306 **A**307 **F**308 **9**309 **9**310 **9**311 **1**312
7313 **1**314 **7**315 **2**316 **7**317 **3**318 **7**319 **4**320

To enter Programming Mode, press the **MODE** key, **7764** and then the **[ENTER/STORE]** key.

B.5 All 3+1, All 4+1 and 4+2 Expanded Formats for Primary Central Station

❑145 ❑146 ❑147 ❑148 ❑149 ❑150 ❑151 ❑152 ❑153 ❑154 ❑155 ❑156 ❑157 ❑158 ❑159 ❑160

❑161 ❑162 ❑163 ❑164 ❑165 ❑166 ❑167 ❑168 ❑169 ❑170 ❑171 ❑172 ❑173 ❑174 ❑175 ❑176

❑177 ❑178 ❑179 ❑180 ❑181 ❑182 ❑183 ❑184 ❑185 ❑186 ❑187 ❑188

B.6 All 3+1, All 4+1 and 4+2 Expanded Formats for Secondary Central Station

❑233 ❑234 ❑235 ❑236 ❑237 ❑238 ❑239 ❑240 ❑241 ❑242 ❑243 ❑244 ❑245 ❑246 ❑247 ❑248

❑249 ❑250 ❑251 ❑252 ❑253 ❑254 ❑255 ❑256 ❑257 ❑258 ❑259 ❑260 ❑261 ❑262 ❑263 ❑264

❑265 ❑266 ❑267 ❑268 ❑269 ❑270 ❑271 ❑272 ❑273 ❑274 ❑275 ❑276

B.7 All 3+1, All 4+1 and 4+2 Expanded Formats for Primary Central Station (Factory Defaults)

1145 **1**146 **1**147 **1**148 **F**149 **F**150 **F**151 **F**152 **9**153 **6**154 **6**155 **6**156 **6**157 **6**158 **6**159 **4**160

6161 **6**162 **6**163 **E**164 **E**165 **E**166 **E**167 **D**168 **D**169 **D**170 **D**171 **9**172 **A**173 **A**174 **A**175 **A**176

A177 **A**178 **5**179 **A**180 **A**181 **A**182 **9**183 **F**184 **7**185 **7**186 **7**187 **7**188

B.8 All 3+1, All 4+1 and 4+2 Expanded Formats for Secondary Central Station (Factory Defaults)

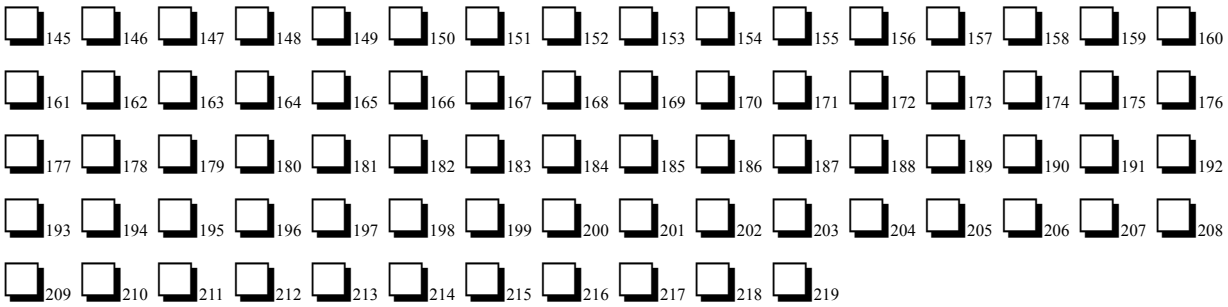
1233 **1**234 **1**235 **1**236 **F**237 **F**238 **F**239 **F**240 **9**241 **6**242 **6**243 **6**244 **6**245 **6**246 **6**247 **4**248

6249 **6**250 **6**251 **E**252 **E**253 **E**254 **E**255 **D**256 **D**257 **D**258 **D**259 **9**260 **A**261 **A**262 **A**263 **A**264

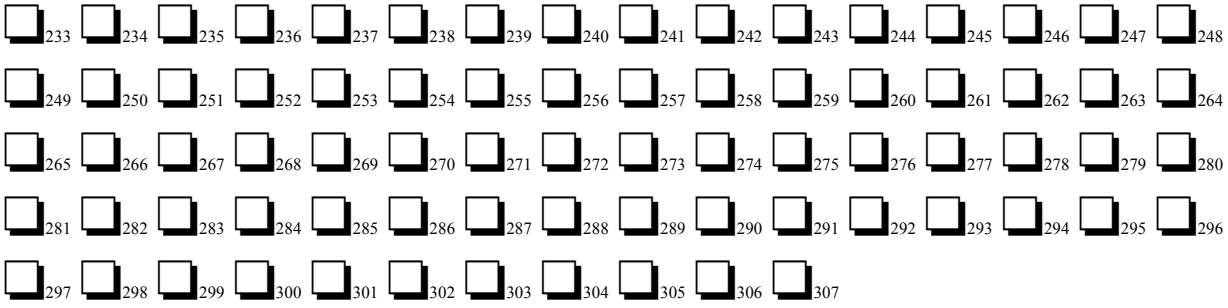
A265 **A**266 **5**267 **A**268 **A**269 **A**270 **9**271 **F**272 **7**273 **7**274 **7**275 **7**276

--To enter Programming Mode, press the **MODE** key, **7764** and then the **[ENTER/STORE]** key.

B.9 Ademco Contact ID Format Primary Central Station



B.10 Ademco Contact ID Format Secondary Central Station



B.11 Ademco Contact ID Format Primary Central Station (Factory Defaults)

1 145 1 146 1 147 1 148 1 149 5 150 1 151 1 152 1 153 1 154 1 155 5 156 3 157 8 158 0 159 3 160

8 161 0 162 3 163 8 164 0 165 3 166 8 167 0 168 3 169 0 170 1 171 3 172 1 173 0 174 3 175 0 176

2 177 3 178 1 179 1 180 3 181 5 182 1 183 3 184 5 185 2 186 3 187 2 188 1 189 3 190 0 191 0 192

3 193 5 194 4 195 3 196 5 197 4 198 3 199 0 200 8 201 6 202 0 203 2 204 6 205 0 206 8 207 4 208

1 209 1 210 4 211 1 212 6 213 4 214 1 215 2 216 4 217 1 218 3 219

B.12 Ademco Contact ID Format Secondary Central Station (Factory Defaults)

1 233 1 234 1 235 1 236 1 237 5 238 1 239 1 240 1 241 1 242 1 243 5 244 3 245 8 246 0 247 3 248

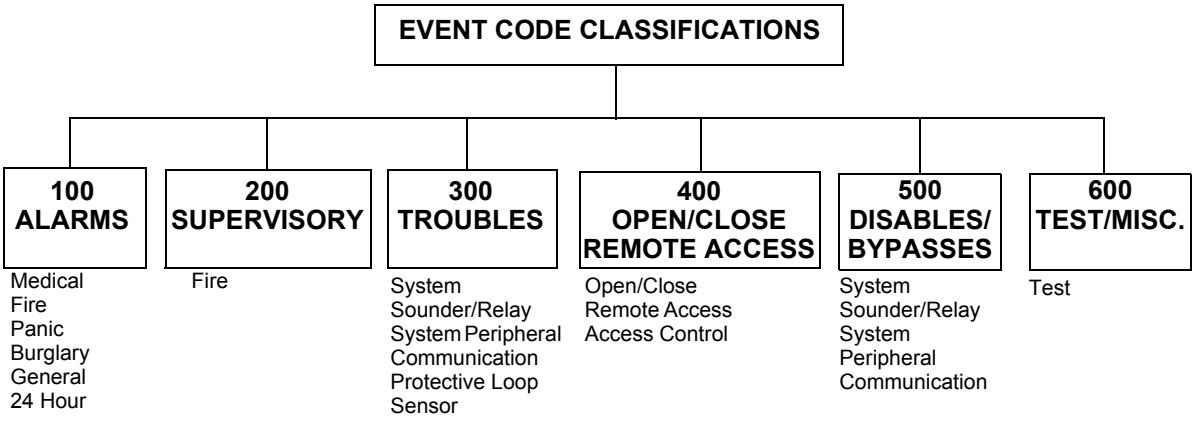
8 249 0 250 3 251 8 252 0 253 3 254 8 255 0 256 3 257 0 258 1 259 3 260 1 261 0 262 3 263 0 264

2 265 3 266 1 267 1 268 3 269 5 270 1 271 3 272 5 273 2 274 3 275 2 276 1 277 3 278 0 279 0 280

3 281 5 282 4 283 3 284 5 285 4 286 3 287 0 288 8 289 6 290 0 291 2 292 6 293 0 294 8 295 4 296

1 297 1 298 4 299 1 300 6 301 4 302 1 303 2 304 4 305 1 306 3 307

Appendix C: Ademco Contact ID Format Event Code Description



EVENT	MESSAGE
Medical Alarms - 100	
100 Medical	EMERG - Personal Emergency - #
101 Pendant transmitter	EMERG - Personal Emergency - #
102 Fail to report in	EMERG - Fail to Check-in - #
Fire Alarms - 110	
110 Fire Alarm	FIRE - Fire Alarm - #
111 Smoke	FIRE - Smoke Detector - #
112 Combustion	FIRE - Combustion - #
113 Waterflow	FIRE - Waterflow - #
114 Heat	FIRE - Heat Sensor - #
115 Pull Station	FIRE - Pull Station - #
116 Duct	FIRE - Duct Sensor - #
117 Flame	FIRE - Flame Sensor - #
118 Near Alarm	FIRE - Near Alarm - #
Panic Alarms - 120	
120 Panic Alarm	PANIC - Panic - #
121 Duress	PANIC - Duress - #
122 Silent	PANIC - Silent Panic - #
123 Audible	PANIC - Audible Panic - #
Burglar Alarms - 130	
130 Burglary	BURG - Burglary - #
131 Perimeter	BURG - Perimeter - #
132 Interior	BURG - Interior - #
133 24-Hour	BURG - 24-Hour - #
134 Entry/Exit	BURG - Entry/Exit
135 Day/Night	BURG - Day/Night
136 Outdoor	BURG - Outdoor - #

EVENT	MESSAGE
137 Tamper	BURG - Tamper - #
138 Near Alarm	BURG - Near Alarm - #
General Alarms - 140	
140 General Alarm	ALARM - General Alarm - #
141 Polling loop open	ALARM - Polling Loop Open - #
142 Polling loop short	ALARM - Polling Loop Short - #
143 Expansion module failure	ALARM - Exp. Module Fail - #
144 Sensor tamper	ALARM - Sensor Tamper - #
145 Expansion module tamper	ALARM - Exp. Module Tamper - #
24 Hour Non-Burglary - 150 and 160	
150 24-Hour Non-Burg	ALARM - 24-Hr. Non-Burg - #
151 Gas detected	ALARM - Gas Detected - #
152 Refrigeration	ALARM - Refrigeration - #
153 Loss of heat	ALARM - Heating System - #
154 Water leakage	ALARM - Water Leakage - #
155 Foil break	ALARM - Foil Break - #
156 Day trouble	ALARM - Day Zone - #
157 Low bottled gas level	ALARM - Low Gas Level - #
158 High temp	ALARM - High Temperature - #
159 Low temp	ALARM - Low Temperature - #
161 Loss of air flow	ALARM - Air Flow - #
Fire Supervisory - 200 and 210	
200 Fire Supervisory	SUPER. - Fire Supervisory - #
201 Low water pressure	SUPER. - Low Water Pressure - #
202 Low CO2	SUPER. - Low CO2
203 Gate valve sensor	SUPER. - Gate Valve - #
204 Low water level	SUPER. - Low Water Level - #
205 Pump activated	SUPER. - Pump Activation - #
206 Pump failure	SUPER. - Pump Failure - #
System Troubles - 300 and 310	
300 System trouble	TROUBLE - System Trouble
301 AC loss	TROUBLE - AC Power
302 Low system battery	TROUBLE - System Low Battery
303 RAM checksum bad	TROUBLE - Bad RAM Checksum (Restore not applicable)
304 ROM checksum bad	TROUBLE - Bad ROM Checksum (Restore not applicable)
305 System reset	TROUBLE - System Reset (Restore not applicable)
306 Panel program changed	TROUBLE - Programming Changed (Restore not applicable)
307 Self-test failure	TROUBLE - Self Test Failure
308 System shutdown	TROUBLE - System Shutdown
309 Battery test failure	TROUBLE - Battery Test Failure
310 Ground fault	TROUBLE - Ground Fault - #
311 No battery	TROUBLE - No Battery
Sounder/Relay Troubles - 320	
320 Sounder/Relay	TROUBLE - Sounder Relay - #
321 Bell 1	TROUBLE - Bell/Siren #1
322 Bell 2	TROUBLE - Bell/Siren #2

EVENT	MESSAGE
323 Alarm relay	TROUBLE - Alarm Relay
324 Trouble relay	TROUBLE - Trouble Relay
325 Reversing	TROUBLE - Reversing Relay
326 Bell 3	TROUBLE - Bell/Siren #3
327 Bell 4	TROUBLE - Bell/Siren #4

System Peripheral Troubles - 330 and 340

330 System Peripheral	TROUBLE - Sys. Peripheral - #
331 Polling loop open	TROUBLE - Polling Loop Open
332 Polling loop short	TROUBLE- Polling Loop Short
333 Expansion module failure	TROUBLE - Exp. Module Fail - #
334 Repeater failure	TROUBLE- Repeater Failure - #
335 Local printer paper out	TROUBLE - Printer Paper Out
336 Local printer failure	TROUBLE - Local Printer

Communication Troubles - 350 and 360

350 Communication	TROUBLE - Communication Trouble
351 Telco 1 fault	TROUBLE - Phone Line #‘1
352 Telco 2 fault	TROUBLE - Phone Line #2
353 Long range radio xmitter fault	TROUBLE - Radio Transmitter
354 Fail to communicate	TROUBLE - Fail to Communicate
355 Loss of radio supervision	TROUBLE - Radio Supervision
356 Loss of central polling	TROUBLE - Central Radio Polling

Protection Loop Troubles - 370

370 Protection loop	TROUBLE - Protection Loop - #
371 Protection loop open	TROUBLE - Protection Loop Open - #
372 Protection loop short	TROUBLE - Protection Loop Short - #
373 Fire Trouble	TROUBLE - Fire Loop - #

Sensor Troubles - 380

380 Sensor trouble	TROUBLE - Sensor Trouble - #
381 Loss of Supervision - RF	TROUBLE - RF Sensor Supervision - #
382 Loss of Supervision - RPM	TROUBLE - RPM Sensor Supervision - #
383 Sensor tamper	TROUBLE - Sensor Tamper - #
384 RF transmitter low battery	TROUBLE - RF Sensor Batt. - #

Open/Close - 400

400 Open/Close	OPENING	CLOSING
401 Open/Close by user	OPENING - User #	CLOSING - User #
402 Group Open/Close	OPENING - Group User #	CLOSING - Group User #
403 Automatic Open/Close	OPENING - Automatic	CLOSING - Automatic
404 Late Open/Close	OPENING - Late	CLOSING - Late
405 Deferred Open/Close	Opening not used	Closed not used
406 Cancel	OPENING - Cancel	Closed not used
407 Remote arm/disarm	OPENING - Remote	CLOSING - Remote
408 Quick arm	Opening not applicable	CLOSING - Quick Arm
409 Keyswitch Open/Close	OPENING - Keyswitch	CLOSING - Keyswitch

Remote Access - 410

411 Callback request made	REMOTE - Callback Requested	Restore not applicable

EVENT	MESSAGE	
412 Success - download/access	REMOTE - Successful Access	Restore not applicable
413 Unsuccessful access	REMOTE - Unsuccessful Access	Restore not applicable
414 System shutdown	REMOTE - System Shutdown	
415 Dialer shutdown	REMOTE - Dialer Shutdown	
416 Success - upload/access	REMOTE - Successful Access	Restore not applicable
Access Control - 420		
421 Access denied	ACCESS - Access Denied - User #	Restore not used
422 Access report by user	ACCESS - Access Gained - User #	Restore not used
System Disables - 500 and 510		
Sounder/Relay Disables - 520		
520 Sounder/Relay disable	DISABLE - Sounder/Relay - #	
521 Bell 1 disable	DISABLE - Bell/Siren - #1	
522 Bell 2 disable	DISABLE - Bell/Siren - #2	
523 Alarm relay disable	DISABLE - Alarm Relay	
524 Trouble relay disable	DISABLE - Trouble Relay	
525 Reversing relay disable	DISABLE - Reversing Relay	
526 Bell 3 disable	DISABLE - Bell/Siren - #3	
527 Bell 4 disable	DISABLE - Bell/Siren - #4	
System Peripheral Disables - 530 and 540		
Communication Disables - 550 and 560		
551 Dialer disabled	DISABLE - Dialer Disable	
552 Radio transmitter disabled	DISABLE - Radio Disable	
Bypasses - 570		
570 Zone bypass	BYPASS - Zone Bypass - #	
571 Fire bypass	BYPASS - Fire Bypass - #	
572 24-Hour zone bypass	BYPASS - 24-Hour Bypass - #	
573 Burglar bypass	BYPASS - Burg. Bypass - #	
574 Group bypass	BYPASS - Group Bypass - #	
Test Misc. - 600		
601 Manual trigger test	TEST - Manually Triggered	Restore not applicable
602 Periodic test report	TEST - Periodic	Restore not applicable
603 Periodic RF transmission	TEST - Periodic Radio	Restore not applicable
604 Fire test	TEST - Fire Test	Restore not used
605 Status report to follow	STATUS - Status Follows	Restore not applicable
606 Listen-in to follow	LISTEN - Listen-in Active	Restore not applicable
607 Walk test mode	TEST - Walk Test Mode	
608 System abnormal test	TEST - System Abnormal Test	

Appendix D: Events and Default Event Codes

Note: The character 'x' in the following table refers to the input circuit number (1 - 4).

411UDAC Events	Format Group 1		Format Group 2		Ademco Contact ID	
Input Circuit Functions	**Active**	**Restore**	**Active**	**Restore**	**Active and Restore**	**Sensor #**
2 or 4-wire Smoke	1x	Ex	1	E	111	00x
Pull Station	1x	Ex	1	E	115	00x
Contact Closure	1x	Ex	1	E	110	00x
Host Control Panel Trouble	FF	Ex	F	E	373	00x
Latching Supervisory	8x	Ex	8	E	200	00x
Autoresettable Supervisory	8x	Ex	8	E	200	00x
Silenceable Waterflow	1x	Ex	1	E	113	00x
Nonsilenceable Waterflow	1x	Ex	1	E	113	00x
Other Events	**Active**	**Restore**	**Active**	**Restore**	**Active and Restore**	**Sensor #**
Input Circuit Fault	Fx	Dx	F	D	380	00x
AC Fault	92	93	9	9	301	000
Earth Fault	61	A1	6	A	310	000
Low Battery Fault	62	A2	6	A	302	000
No Battery Fault	63	A3	6	A	311	000
Phone Line 1 Fault	64	A4	6	A	351	000
Phone Line 2 Fault	65	A5	6	A	352	000
NAC Fault	66	A6	6	A	321	000
Phone Number 1 Fault	6A	AA	6	A	354	001
Phone Number 2 Fault	6B	AB	6	A	354	002
System Off Normal Fault	6F	AF	6	A	308	000
Special Events	**Active**	**Restore**	**Active**	**Restore**	**Active and Restore**	**Sensor #**
System Test Message	99	-	9	-	602	000
System Abnormal Test Message	91	-	F	-	608	000
Upload/Download Request	71	-	7	-	411	000
Upload Successful	72	-	7	-	416	000
Download Successful	73	-	7	-	412	000
Upload/Download Failed	74	-	7	-	412	000

Group Definitions:

Format Group 1

4+2 Ademco Express Standard, DTMF	1400/2300 Hz ACK
4+1 Expanded 1800 Hz Carrier	2300 Hz ACK
4+1 Expanded 1900 Hz Carrier	1400 Hz ACK
4+2 Standard 1800 Hz Carrier	2300 Hz ACK
4+2 Expanded 1800 Hz Carrier	2300 Hz ACK
4+2 Standard 1900 Hz Carrier	1400 Hz ACK
4+2 Expanded 1900 Hz Carrier	1400 Hz ACK

Format Group 2

4+1 Ademco Express Standard, DTMF	1400/2300 Hz ACK
3+1 Expanded 1800 Hz Carrier	2300 Hz ACK
3+1 Expanded 1900 Hz Carrier	1400 Hz ACK
3+1 Standard 1800 Hz Carrier	2300 Hz ACK
3+1 Standard 1900 Hz Carrier	1400 Hz ACK
4+1 Standard 1800 Hz Carrier	2300 Hz ACK
4+1 Standard 1900 Hz Carrier	1400 Hz ACK

Note that although all Expanded Mode formats communicate two digits per event, only the first digit is programmable. The second digit cannot be changed.

Appendix E: Operational Modes

CODE	ACTIVITY	NOTES
6676 (NORM)	Returns to normal operation	Fire protection is on.
2525 (CLCK)	Enters Real-Time Clock Mode	Program digital communicator time. Fire protection is off.
7764 (PROG)	Enters Program Mode	Allows programming of digital communicator. Fire protection is off.
3337 (DEFP)	Returns digital communicator to factory default program settings	Fire protection is off during Default Mode.
8768 (TROU)	Allows display of status for all circuits	Fire protection is off during Troubleshoot Mode.

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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 the extent possible, any warranty offered by the manufacturer of such product. This warranty shall be void if a Product is altered, serviced or 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.

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APPENDIX D

StarLink FIRE MAX 2

NAPCO StarLink MAX2 Fire Communicator Resource Guide

Welcome to the NAPCO StarLink MAX2 series of commercial fire alarm communicators, designed to be the most advanced, reliable, cost effective and easiest to install in the industry. The wide selection of StarLink models will ensure you have the correct communicator for every commercial fire application. All models meet UL864 10th edition, are NFPA 72 compliant and operate on an end-to-end Underwriters Laboratories listed backend, from the communicator to the NOC to the UL listed CS receiver. This document will guide you through the entire process, from the selection of the correct communicator model for the application, service plan selection, device activation, wiring, NOC configuration and AHJ testing of the completed installation.

To access the following information, simply click on the respective link:

- Notice to the Authority Having Jurisdiction
- Selection of the Communicator Model & Selection of the Service Plan
- StarLink Service Plan Price List
- StarLink Communication Product List
- StarLinkOmni-X® Extended Range Omnidirectional Cellular Antenna Kits
- NAPCO StarLink Communicator Compliance Summary
- StarLink Fire MAX2 ComNet Service Plan Overview
- ComNet Communicator Activation, step-by-step
- Tech Tip: Programming an SLE-MAX2 StarLink Communicator for SIA to CID Conversion
- Quick Start: NOC Configuration and Communicator Wiring for Dial Capture DACT Installations
- Quick Start: Triggering Radio Inputs from FACP Relays for Dual Path Fire Communicators
- AHJ Submittal Data Sheet: StarLink SLE-MAX2-FIRE Communicator
- AHJ Submittal Data Sheet: StarLink SLE-MAX2-CFB & SLE-MAX2-CFBPS Communicators
- AHJ Testing of Communicator: Take the guesswork out of testing the fire alarm communicator, locate the NFPA revision and installed communicator model for the required step-by-step AHJ test procedure:
  - *SLE-MAX2 Series Dual Path Fire Communicators Using Super Dual™ SIM Supervision AHJ Insp. Guide*
  - *SLE-MAX2-CFBPS Dual Path Fire Communicator, IP with Cell Backup AHJ Insp. Guide*
  - *SLE-MAX2-FIRE & SLE-MAX2-CFB Dual Path Fire Communicators, IP with Cell Backup AHJ Insp. Guide*
  - *SLE-MAX2-FIRE & SLE-MAX2-CFB Sole Path Fire Communicators AHJ Insp. Guide*
  - *SLE-MAX2-CFBPS Sole Path Fire Communicator AHJ Insp. Guide*
- StarLink Extended Antenna Information
- FDNY Certificate of Approval
- CSFM Listing 7300-0992:0503
- UL Notice of Authorization to Apply the UL Mark - Super Dual™, Supervised Dual Cellular, Dual Path Reporting Listing
- UL Certificates of Compliance, SLE-MAX2-Series: UL 985, UL 1023, UL 2610, UL 864

For additional resources, including FAQs, CAD drawings, How-to Videos and Tech Tips, visit the NAPCO Technical Library at http://tech.napcosecurity.com.

For NAPCO Technical Support, call 1-800-645-9440, Monday-Friday, 8:30 AM to 8:00 PM EST

Important Notice to the Authority Having Jurisdiction

StarLink MAX2 fire communicators support **the industry's first and only Supervised Dual Path, Dual Cellular Carrier** commercial fire communication service.

The new **Super Dual™** UL 864 10th edition listed service provides two fully supervised cellular reporting paths (AT&T and Verizon), as an alternative to traditional cell/IP dual path reporting. This new *dual path*, *dual cellular* feature eliminates the fire system designer's ordeal of getting permission from the subscriber's IT department to run a CAT5 cable and plugging the IP communicator into their network when dual path reporting is required. Super Dual also addresses AHJ concerns related to incompliance with NFPA 72 2022 Section 26.6.3.13 for the required 24 hours Secondary Power, which most often cannot be properly verified for IP reporting through the subscriber's network. Unlike traditional Dual Path IP reporting, MAX2 Super Dual does not rely on any subscriber supplied network appliances and associated backup power to support life safety reporting. The AHJ must only inspect and observe the testing of the MAX2 communicator to confirm that the entire dual path communication path is properly listed, installed, backed up and properly functioning. The AHJ can have confidence that any changes made in the IT room after the inspection will not affect fire communication reporting.

Super Dual service allows both cellular carriers to be fully supervised, as per NFPA 2013-2022, with each carrier supervised within not more than 6 hours:

> **NFPA 72 2016 Edition**
>
> **26.6.3.4** Multiple Communications Paths. If multiple transmission paths are used, the following requirements shall be met:
>
> (1) Each path shall be **supervised within not more than 6 hours**.
>
> (2) The failure of any path of a multipath system shall be **annunciated at the supervising station within not more than 6 hours**.
>
> (3) Multiple communications paths shall be arranged so that a **single point of failure shall not cause more than a single path to fail.**
>
> (4) The failure to complete a signal transmission **shall be annunciated at the protected premises** in accordance with Section 10.14.

By design, the StarLink Fire MAX2 **Super Dual** service plan will transmit a supervisory signal through each carrier, alternating AT&T and Verizon, every 3 hours. Upon failure of a cellular carrier channel, within 200 seconds the system will switch to the other carrier, will send the trouble condition to the central station, and locally annunciate the trouble.

Please note that in addition to Super Dual communications, the MAX2 series also supports the following service plan types, making it the ideal choice for any commercial fire communication application:

- Traditional **sole path cellular only** (AT&T / Verizon) communications
- Traditional **dual path cellular** (AT&T / Verizon) **and IP** communications
- New **Super Dual** supervised cellular (AT&T **and** Verizon) dual path communications

Getting Started...

Which model communicator should I use?

Does your FACP have available standby current of 85mA @ 24V DC ? (must be regulated power supply)

Yes Select model **SLE-MAX2-FIRE** Series (plastic enclosure) or **SLE-MAX2-CFB** Series (metal enclosure). These models are powered directly from the 24V DC AUX power provided by the FACP. This must be regulated power; do not connect to any power outputs designated as "unregulated power". For your standby power calcs, use 200mA (standby) and 325mA alarm (communicating). Standby backup power for the communicator is provided by the standby batteries of the FACP during AC power failures.

No Select model **SLE-MAX2-CFBPS** Series (metal enclosure). These models must be directly connected to a 120V AC dedicated circuit or optionally use a TRF12 plug-in transformer. Also included are provisions for a rechargeable standby battery.

What service plan should I select?

This is typically up to your local AHJ (Authority Having Jurisdiction) who is usually the Fire Marshal of the municipality. The AHJ will require compliance with a specific version of NFPA72 that will determine the service plan you select. If unsure of which plan to select, contact your AHJ for guidance.

NFPA 2013
2016
2019
2022 Compliance with NFPA 2013 through 2022 requires service plan SLF-SVC-13-MX which requires the Fire Communicator to "check-in" to the NOC every 60 minutes to ensure communicator readiness. This plan is the most common and most municipalities have standardized on 2013. NFPA 2013 service plans are currently selected for 80% of fire communicator activations nationwide.

NFPA 2010 Compliance with NFPA 2010 requires service plan SLF-SVC-10-MX which requires the Fire Communicator to "check-in" to the NOC every 5 minutes.

StarLink MAX2 Communicator Service Plan Price List

Sole Path Fire Service Plans		Price (mo)
Commercial Fire & Intrusion Sole Path Service Plans		
SLF-SVC-13-MX	NFPA 2013-2022 • Sole Path • Dual Sim • 1 Hour Cellular NOC Supervisory Check-in	**$9.95**
SLF-SVC-10-MX	NFPA 2010 • Sole Path • Dual SIM • 5 Minute Cellular NOC Supervisory Check-in	**$16.95**
Dual Path Fire Service Plans		
SLF-SVC-13-MXI	NFPA 2013-2022 • Dual Path • Dual Sim • 6 Hour NOC Cellular Supervisory Check-in • 6 Hour IP Supervisory Check-in	**$9.95**
SLF-SVC-13-MXD	NFPA 2013-2022 • Dual Path • Dual Sim • **SUPER DUAL™** • Supervised Dual Path, Dual Carrier • 6 Hr NOC Cellular Check-in	**$9.95**
SLF-SVC-10-MXI	NFPA 2010 • Dual Path • Dual Sim • 24 Hr NOC Cellular Supervisory Check-in • 24 Hr NOC IP Supervisory Check-in	**$6.95**
SLF-SVC-10-MXD	NFPA 2010 • Dual Path • Dual Sim • **SUPER DUAL™** • Supervised Dual Path, Dual Carrier • 24 Hr NOC Cellular Supervisory Check-in	**$6.95**
SLF-SVC-10-MSI	NFPA 2010 • Dual Path • Dual Sim • 5 Min NOC Cellular Supervisory Check-in • 5 Min NOC IP Supervisory Check-in (NYFD Plan)	**$16.95**
SLF-SVC-BU-MX	NFPA 2010 • Dual Path • Dual Sim • 24 Hour NOC Cellular Supervisory Check-in • 24 Hour IP Supervisory Check-in	**$6.95**

StarLink Communication Product List

MODEL	DESCRIPTION
SLE-MAX2-FIRE 	**Commercial Sole Path & Dual Path IP / Cellular Alarm Communicator** • **Dual Carrier - Verizon and AT&T** • Red Plastic Enclosure • Agency Compliance: ETL, conforms to UL 985, UL864 10th Ed, UL1023, UL2610 Underwriters Laboratories UL 985, UL864 10th Ed, UL1023, UL2610 • Powered by Control Panel Input: 10-27.5 Reg. VDC(85mA standby w/peak RF transmission draw of 325mA). • Self-Supervision allows the communicator to annunciate a comm trouble with no panel rewiring or reprogramming. Also includes: • **(4) EOLR Zone inputs for connection to legacy FACPs.** • **(2) Programmable Form C relay, allowing NFPA output supervision.** • **(2) Modular RJ45 Telco jacks for easy connection to FACP.**
SLE-MAX2-CFBPS 	**Commercial Sole Path & Dual Path IP / Cellular Fire Alarm Communicator** • **Dual Carrier - Verizon and AT&T** • Red Metal Enclosure • Agency Compliance: ETL, conforms to UL 985, UL864 10th Ed, UL1023, UL2610 Underwriters Laboratories UL 985, UL864 10th Ed, UL1023, UL2610 • Direct 120VAC Powered, or from optional TRF12 Plug-In Transformer • Includes power supply/provisions for backup battery/charger • Self-Supervision allows communicator to annunciate a comm trouble with no panel rewiring or reprogramming. • Also includes: • **(4) EOLR Zone inputs for connection to legacy FACPs** • **(2) Programmable Form C relay, allowing NFPA output supervision.** • **(2) Modular RJ45 Telco jacks for easy connection to FACP**

MODEL	DESCRIPTION
SLE-MAX2-CFB 	**Commercial Sole Path & Dual Path IP / Cellular Alarm Communicator** • **Dual Carrier - Verizon and AT&T** • Red Metal Enclosure • Agency Compliance: ETL, conforms to UL 985, UL864 10th Ed, UL1023, UL2610 Underwriters Laboratories UL 985, UL864 10th Ed, UL1023, UL2610 • Powered by Control Panel Input: 10-27.5 Reg. VDC(85mA standby w/peak RF transmission draw of 325mA). • Self-Supervision allows the communicator to annunciate a comm trouble with no panel rewiring or reprogramming. Also includes: • **(4) EOLR Zone inputs for connection to legacy FACPs.** • **(2) Programmable Form C relay, allowing NFPA output supervision.** • **(2) Modular RJ45 Telco jacks for easy connection to FACP.**
TRF12 	Optional 16.5VAC, 20VA plug-in power adaptor provides alternate power method for CFBPS series fire communicator models. Allows easy replacement of existing fire communicator installations already pre-wired for plug-in power adaptor operation.
FL-32FACP-LTEVS 	**FireLink StarLink Powered Self Contained Fire Communicator / FACP** • Includes 32 point max FACP with integral sole path LTE Verizon fire communicator • Supports 7 conventional zones, expandable to 32 zones max through analog addressable and conventional GEMC devices. • Fire annunciator mounted on front cover, supports up to 6 additional remote annunciators. • Includes 2 NAC circuits, 2A each @ 24V, supports Wheelock and Systems Sensor synchronization protocol. • System completely assembled/wired • Requires direct 120V AC power connection • Includes basic conventional default program suitable for sprinkler supervision and basic fire applications • Programmable through the FireLink Cloud mobile application • Agency Compliance: UL 864 9th Ed., NFPA 72 Editions 2016, 2013, 2010, 2007, CSFM, NYCFD
FL-32FACP-LTEVI **FL-32FACP-LTEAI** 	**FireLink Dual Path StarLink powered self contained fire communicator / FACP.** • Includes 32 point max FACP with integral dual path LTE Verizon fire communicator • Supports 7 conventional zones, expandable to 32 zones max through analog addressable, wireless and convectional GEMC devices. • Fire annunciator mounted on front cover, supports up to 6 additional remote annunciators. • Includes 2 NAC circuits, 2A each @ 24V, supports Wheelock and Systems Sensor synchronization protocol. • System completely assembled/wired • Requires direct 120V AC power connection • Includes basic conventional default program suitable for sprinkler supervision and basic fire applications • Programmable Over The Air through the FireLink Cloud. • Agency Compliance: UL 864 10th Ed., NFPA 72 Editions 2016, 2013, 2010, 2007; CSFM, NYCFD
FL-255FACP-LTVI 	**FireLink Dual Path StarLink powered self contained fire communicator / FACP.** • Supports 125 addressable points, expandable to 255 with additional GEMC-FW-SLC addressable module. • Supports 7 conventional zones, expandable to 255 zones max through analog addressable, wireless and convectional GEMC devices. • Includes integral dual path StarLink LTE Verizon fire dual path communicator • Fire annunciator mounted on front cover, supports up to 6 additional remote annunciators. • Includes 4 NAC circuits, 2A each @ 24V, supports Wheelock and Systems Sensor synchronization protocol. • System is completely prewired and assembled, just mount on wall, connect AC, ground, initiating and indicating devices and it is ready to go. • Requires direct 120V AC power connection • Cloud based programming using any mobile device • Agency Compliance: UL 864 10th Ed., NFPA 72 Editions 2016, 2013, 2010, 2007; CSFM, NYCFD

MODEL	DESCRIPTION
SLE-MAXV **SLE-MAXA** 	**Commercial Intrusion Radio Alarm Communicator** Black Plastic Enclosure Agency Compliance: • UL985 Household Fire Warning System • UL1023 Standard For Household Burglar-Alarm • UL1610 Standard For Central-Station Burglar-Alarm Units Powered by Control Panel Input: 12VDC (71mA w/peak RF transmission draw of 200mA).
SLE-MAXV-C **SLE-MAXA-C** 	**StarLink Connect Connected Home / Business Alarm Communicator** Dual Path, IP & Cellular Communicator with optional Wi-Fi Upload / Download Virtual Keypad Control iBridge Messenger Notifications Compatible with NAPCO, Honeywell, DSC
SLE-MAXV-Z **SLE-MAXA-Z** 	**StarLink Connect Connected Home / Business Z-Wave Alarm Communicator** Dual Path, IP & Cellular Communicator with optional Wi-Fi Upload / Download Virtual Keypad Control iBridge Messenger Notifications Connected Home Z-Wave Support Compatible with NAPCO, Honeywell, DSC
SLE-MAXV-CB-TF **SLE-MAXA-CB-TF** 	**Commercial Intrusion Alarm Communicator** White Metal Enclosure Agency Compliance: • UL985 Household Fire Warning System • UL1023 Standard For Household Burglar-Alarm • UL1610 Standard For Central-Station Burglar-Alarm Units Powered by Plug-in Transformer Input: 16.5 VAC /20VA Includes power supply/provisions for backup battery/charger
SLE-MAXV-CB **SLE-MAXA-CB** 	**Commercial Intrusion Alarm Communicator** White Metal Enclosure Agency Compliance: • UL985 Household Fire Warning System • UL1023 Standard For Household Burglar-Alarm • UL1610 Standard For Central-Station Burglar-Alarm Units Powered by Control Panel Input: 12VDC (71mA w/peak RF transmission draw of 200mA).
SLE-MAXV-CBTF-C **SLE-MAXA-CBTF-C** 	**Commercial Intrusion Smart Business Alarm Communicator** White Metal Enclosure Dual Path, IP & Celllular with optional Wi-Fi Upload / Download, Virtual Keypad Control, iBridge Messenger Notifications Compatible with NAPCO, Honeywell, DSC Agency Compliance: • UL1610 Standard For Central-Station Burglar-Alarm Units Powered by Plug-in Transformer Input: 16.5 VAC /20VA Includes power supply/provisions for backup battery/charger

MODEL	DESCRIPTION

The StarLink Omni series of extended antenna kits ensure that critical signals will be delivered, even in the most demanding applications by providing typical gains of 4 to 9 dBi.

The following all-inclusive kits include the SLE-ANTEX Antenna, high quality/low loss LMR 300 or 400 Coax Type N male to SMA male terminated cable, stainless steel coated cable clamps, stainless steel #10 screws and washers, one (1) SMA female to TNC male adapter for use with competitive communicators. Also includes the StarLink SLE-ANTEXT-ISO Commercial Fire Ground Fault Isolation Plate to ensure that the external antenna will not cause any ground fault system troubles.

SLE-ANTEXT04	SLE-ANTEXT04 includes 4 feet LMR 300 high quality/low loss Coax Type N male to SMA male terminated cable. Ideal for installations that may require a few extras dBs of gain but running the external cable may not be practical.
SLE-ANTEXT30	SLE-ANTEXT30 includes 30 feet LMR 300 high quality/low loss Coax Type N male to SMA male terminated cable and all accessories listed above.
SLE-ANTEXT50	SLE-ANTEXT50 includes 50 feet LMR 300 high quality/low loss Coax Type N male to SMA male terminated cable and all accessories listed above.
SLE-ANTEXT75	SLE-ANTEXT75 includes 75 feet LMR 400 high quality/low loss Coax Type N male to SMA male terminated cable and all accessories listed above.

SLE-ANTEXT100	SLE-ANTEXT100 includes 100 feet LMR 400 high quality/low loss Coax Type N male to SMA male terminated cable and all accessories listed above.
SLE-ANT	SLE-ANT Includes SLE-ANT Antenna, stainless steel mounting L bracket and isolation plate.
SLE-ANT-TGKIT	SLE-ANT-TGKIT includes adaptors that allow the use of existing Telguard antenna cable when updating a Telguard installation to a StarLink communicator with a StarLink SLE-ANT series Omni-directional antenna
SLE-ANTEXT-ISO	SLE-ANTEXT-ISO accessory designed to eliminate the possibility of ground fault system troubles in commercial fire applications.

NAPCO StarLink Communicator Compliance Summary

COMMUNICATOR MODEL		UL 1023 Residential Burg	UL 985 Household Fire	UL 864 10th Ed. Commercial Fire	UL 1610 or UL 2610 where applicable Commercial Intrusion	FDNY COA	CSFM	LAFD Sole Path	NFPA 72 Editions
SLE-MAX2-FIRE	 Commercial / Residential Fire / Burglary CAT-M1 alarm capture Communicator. SIM cards are included. Red plastic enclosure. Rated nominal 12/24VDC input	✓	✓	✓	✓	✓	✓	(Dual Path does not require LAFD evaluation)	2007, 2010, 2013, 2016, 2019, 2022
SLE-MAX2-CFB	 Commercial / Residential Fire / Burglary CAT-M1 TCP/IP Communicators in red metal housing	✓	✓	✓	✓	✓	✓	(Dual Path does not require LAFD evaluation)	2007, 2010, 2013, 2016, 2019, 2022
SLE-MAX2-CFBPS	 Commercial / Residential Fire / Burglary CAT-M1 TCP/IP Communicators in red metal housing with SLE-ULPS-R power supply and 16.5V / 20VA transformer mounted inside housing	✓	✓	✓	✓	✓	✓	(Dual Path does not require LAFD evaluation)	2007, 2010, 2013, 2016, 2019, 2022

StarLink Fire MAX2 Service Plan Overview

NAPCO ComNet Service Plan Menu

Following is the ComNet portal menu for the selection of the StarLink MAX2 Dual SIM service plans, with the new Super Dual™ service plans highlighted in red. See below for plan descriptions.

NFPA 2010 MAX Commercial Fire Dual Path Svc Plan
NFPA72 2010 - UL864 10th Ed. Dual SIM, Dual Path Commercial Fire Service Plan with 24 Hour Supervisn
6.95 EA
1 Click for Details

NFPA 2010 MAX Super Dual, Dual Path Svc Plan
NFPA72 2010 - UL864 10th Ed. Super Dual, Dual Path, Dual SIM Cellular Fire Svc Pln with 24 Hr Sprvsn
6.95 EA
2 Click for Details

NFPA Commercial Fire Svc Plan - Back-up Only
NFPA72 UL864 10th Ed. Dual SIM, Commercial Fire Serv Plan, Back up Communications, 24 Hr. Spvsn
6.95 EA
3 Click for Details

NFPA 2013/16/19 MAX Comm Fire Dual Path Srvc Plan
NFPA72 2013/16/19 - UL864 10th Ed. Dual SIM, Dual Path Commrcl Fire Serv Plan with 6 Hour Suprvsn
9.95 EA
4 Click for Details

NFPA 2013/16/19 MAX Comm Fire Sole Path Srvc Plan
NFPA72 2013/16/19 - UL864 10th Ed. Dual SIM, Sole Path Commrcl Fire Serv Plan with 60 Min. Suprvsn
9.95 EA
5 Click for Details Best Seller

NFPA 2013/16/19 MAX Super Dual, Dual Path Svc Plan
NFPA72 2013 - UL864 10th Ed. Super Dual, Dual Path, Dual SIM Cellular Fire Svc Pln with 6 Hr Sprvsn
9.95 EA
6 Click for Details

NFPA 2010 MAX 5M Commercl Fire Dual Path Svc Plan
NFPA72 2010 - UL864 10th Ed. Dual SIM, Dual Path Commercial Fire Service Plan with 5 Min Supervisn
16.95 EA
7 Click for Details

NFPA 2010 MAX Commercial Fire Sole Path Svc Plan
NFPA72 2010 - UL864 10th Ed. Dual SIM, Sole Path Commercial Fire Service Plan with 5 min. Suprvsn
16.95 EA
8 Click for Details

Note: Super Dual service plans require a MAX2 firmware revision of: 226.151.30.0.6 or greater.

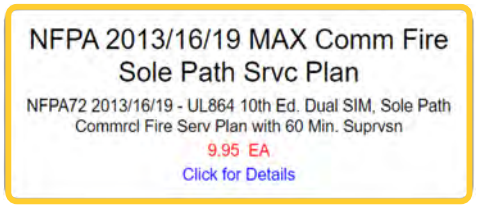
To upgrade communicator to the latest, use the single button OTA "Firmware Download" feature on the NOC.

StarLink Fire MAX2 Service Plan Overview

1	NFPA 2010 MAX Commercial Fire Dual Path Svc Plan NFPA72 2010 - UL864 10th Ed. Dual SIM, Dual Path Commercial Fire Service Plan with 24 Hour Supervisn 6.95 EA Click for Details	SLF-SVC-10-MXI NFPA 2010 Dual Path • Cellular & IP Dual Sim (Verizon & AT&T) • 24 Hr NOC Cellular Supervisory Check-in • 24 Hr NOC IP Supervisory Check-in	**Traditional Dual Path 24-hour service plan (cellular and IP).** The system selects and locks onto the higher quality cellular carrier signal (primary) upon powerup and will reevaluate every 7 days. If secondary signal exhibits higher quality, the system will switch carriers. If the primary carrier fails, the system will immediately switch carriers.	**$6.95**
2	NFPA 2010 MAX Super Dual, Dual Path Svc Plan NFPA72 2010 - UL864 10th Ed. Super Dual, Dual Path, Dual SIM Cellular Fire Svc Pln with 24 Hr Sprvsn 6.95 EA Click for Details	SLF-SVC-10-MXD NFPA 2010 Dual Path • Dual Path Cellular Dual Sim (Verizon & AT&T) **SUPER DUAL™** • Supervised Dual Path, Dual Carrier • 24 Hr NOC Cellular Supervisory Check-in	**Super Dual™, Dual Path service plan (cellular only).** The system utilizes both cellular carriers to provide a UL 864 listed dual path service plan. An IP connection is not required. If either cellular carrier fails, the system will continue operating on the remaining carrier and will report the trouble to central station and locally annunciate the trouble.	**$6.95**
3	NFPA Commercial Fire Svc Plan - Back-up Only NFPA72 UL864 10th Ed. Dual SIM, Commercial Fire Serv Plan, Back up Communications, 24 Hr. Spvsn 6.95 EA Click for Details	SLF-SVC-BU-MX NFPA Sole Path • Cellular Dual Sim (Verizon & AT&T) • 24 Hr NOC Cellular Supervisory Check-in	**Sole Path 24-hour backup service plan (cellular only).** Intended to be used as a backup to existing CS communication. The system selects and locks onto the higher quality cellular carrier signal (primary) upon powerup and will reevaluate every 7 days. If secondary signal exhibits higher quality, the system will switch carriers. If the primary carrier fails, the system will immediately switch carriers.	**$6.95**
4	NFPA 2013/16/19 MAX Comm Fire Dual Path Srvc Plan NFPA72 2013/16/19 - UL864 10th Ed. Dual SIM, Dual Path Commrcl Fire Serv Plan with 6 Hour Suprvsn 9.95 EA Click for Details	SLF-SVC-13-MXI NFPA 2013-2022 Dual Path • Cellular & IP Dual Sim (Verizon & AT&T) • 6 Hr NOC Cellular Supervisory Check-in • 6 Hr IP Supervisory Check-in	**Traditional Dual Path 6-hour service plan (cellular and IP).** The system selects and locks onto the higher quality cellular carrier signal (primary) upon powerup and will reevaluate every 7 days. If secondary signal exhibits higher quality, the system will switch carriers. If the primary carrier fails, the system will immediately switch carriers.	**$9.95**

StarLink Fire MAX2 Service Plan Overview

5



SLF-SVC-13-MX
NFPA 2013-2022
Sole Path • Cellular
Dual Sim (Verizon & AT&T)
• 60 Min Cellular NOC Supervisory Check-in

Sole Path 60-minute service plan (cellular only). **$9.95**
The system selects and locks onto the higher quality cellular carrier signal (primary) upon powerup and will reevaluate every 7 days. If secondary signal exhibits higher quality, the system will switch carriers. If the primary carrier fails, the system will immediately switch carriers.

6

SLF-SVC-13-MXD
NFPA 2013-2022
Dual Path • Dual Path Cellular
Dual Sim (Verizon & AT&T)
SUPER DUAL™
• Supervised Dual Path, Dual Carrier
• 6 Hr NOC Cellular Check-in

Super Dual™, Dual Path service plan (cellular only). **$9.95**
The system utilizes both cellular carriers to provide a UL 864 10th edition listed dual path service plan. An IP connection is not required. If either cellular carrier fails, the system will continue operating on the remaining carrier, will report the trouble to central station and locally annunciate the trouble.

7

SLF-SVC-10-MSI
NFPA 2010
Dual Path • Cellular & IP
Dual Sim (Verizon & AT&T)
• 5 Min NOC Cellular Supervisory Check-in
• 5 Min NOC IP Supervisory Check-in
(NYFD Plan)

Traditional Dual Path 5-minute (NYFD) service plan (cellular and IP). **$16.95**
The system selects and locks onto the higher quality cellular carrier signal (primary) upon powerup and will reevaluate every 7 days. If secondary signal exhibits higher quality, the system will switch carriers. If the primary carrier fails, the system will immediately switch carriers.

8

SLF-SVC-10-MX
NFPA 2010
Sole Path • Cellular
Dual Sim (Verizon & AT&T)
• 5 Min Cellular NOC Supervisory Check-in

Sole Path 5-minute service plan (cellular only). **$16.95**
The system selects and locks onto the higher quality cellular carrier signal (primary) upon powerup and will reevaluate every 7 days. If secondary signal exhibits higher quality, the system will switch carriers. If the primary carrier fails, the system will immediately switch carriers.

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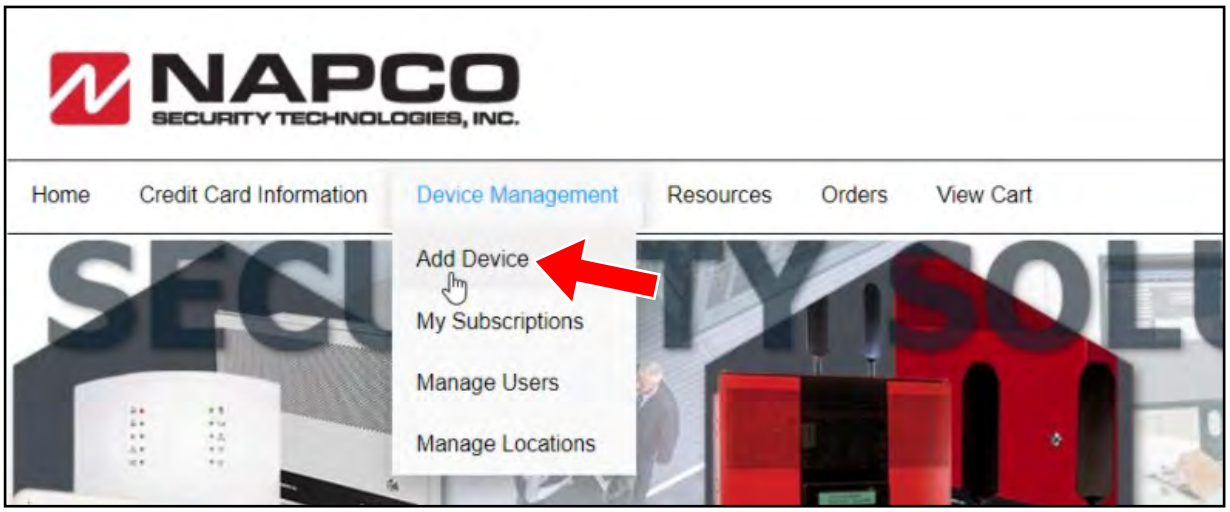
NAPCO Remote Services
ComNet Activation Guide

WI2113E.aLF 6/24

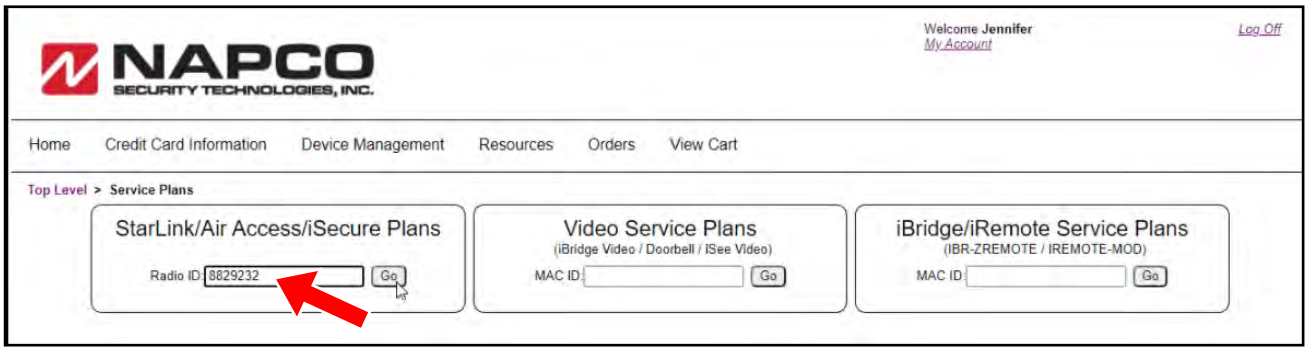
To activate a new Remote Service device, go to www.NapcoComnet.com and log into your dealer account. Proceed as follows:

1. At the top of the web page, select **Device Management > Add Device**.



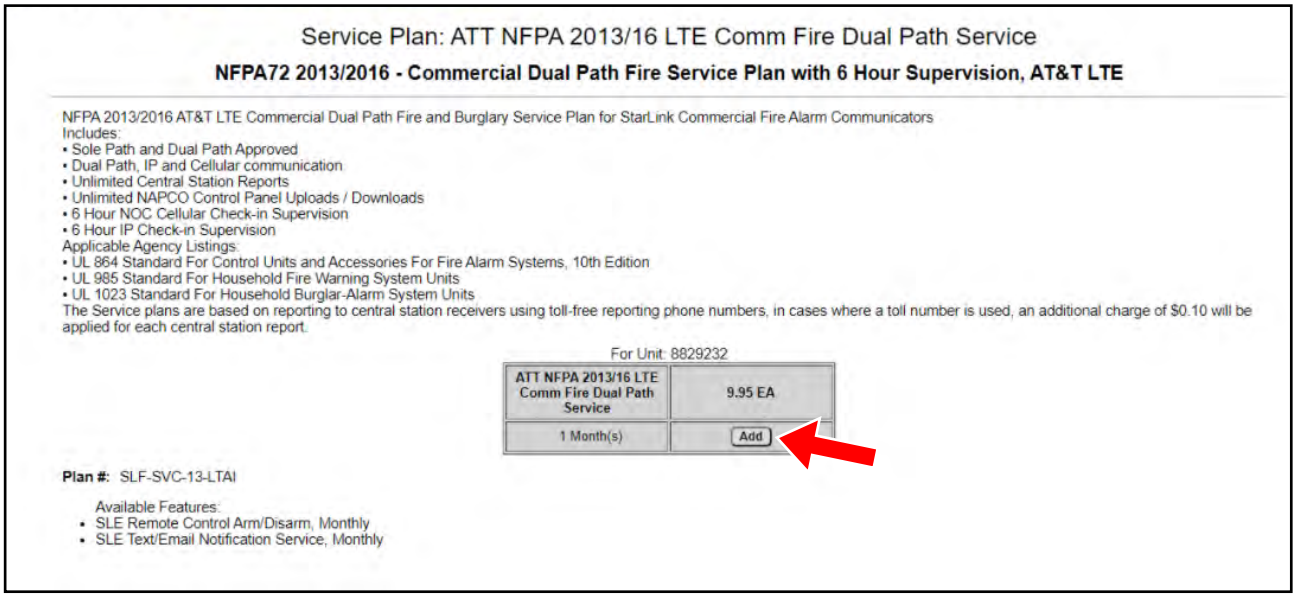
2. Click **Service Plans**.

3. Type the Device ID into the **Radio ID** field for the respective device **Service Plan**, then click **Go**.



4. Click the **Click for Details** text to review the details of the service plan.

5. Click **Add,** to add the service plan to the shopping cart.



6. Click **New** for a new subscriber or **Existing** to add the device to an existing account.

7. Type the new subscriber information, then click **Add Subscriber**.

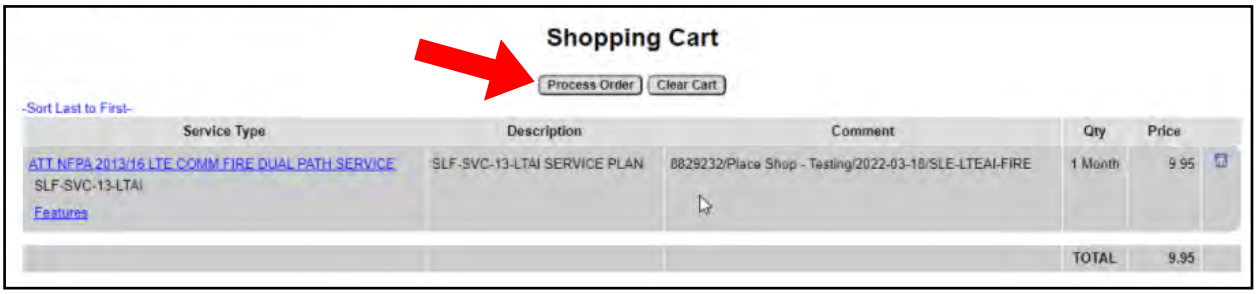
8. Review the subscriber information, then click **Add to Cart**.

9. Click **Close** if you do not want additional features.

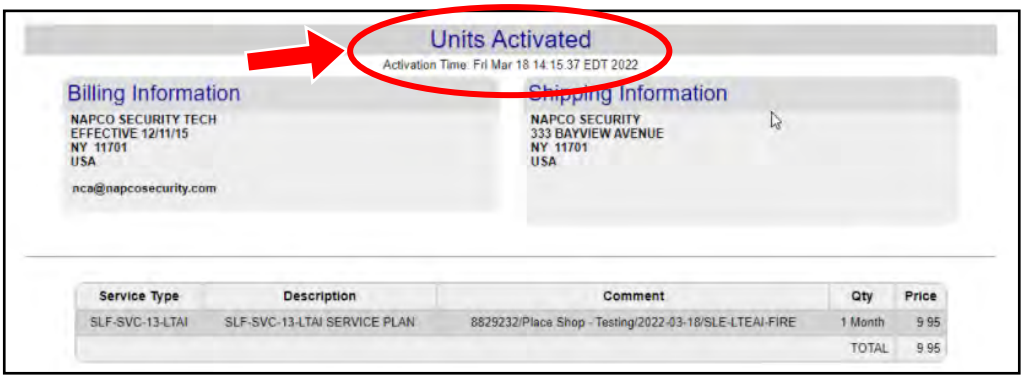
*If the **Process Order** button appears, continue below at step 10.*

*If your Shopping Cart has a **Checkout** button, go to step 12 to pay by credit card.*

10. In the **Shopping Cart**, (see below), click **Process Order**.

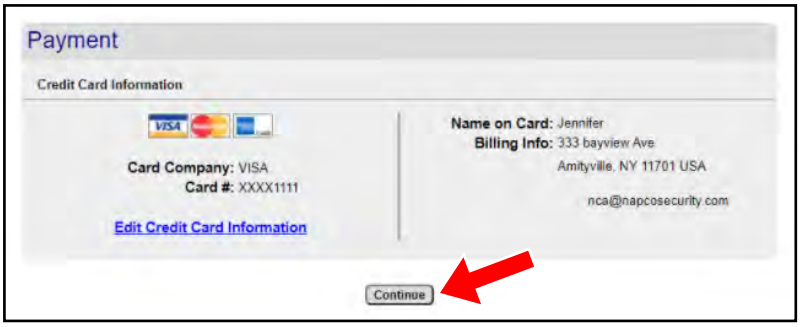


11. To complete the activation process, be sure the **Units Activated** screen appears!

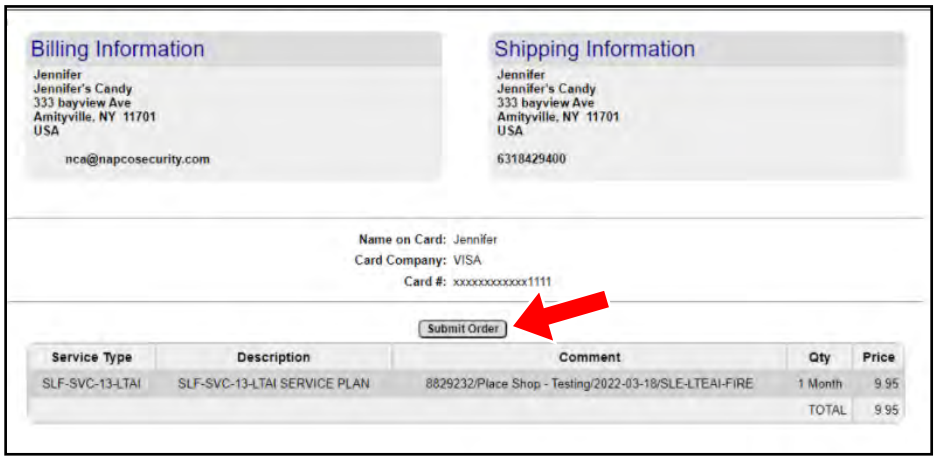


12. If you will pay by credit card, your **Shopping Cart** (see below) will have a **Checkout** button, click **Checkout** to pay by credit card.

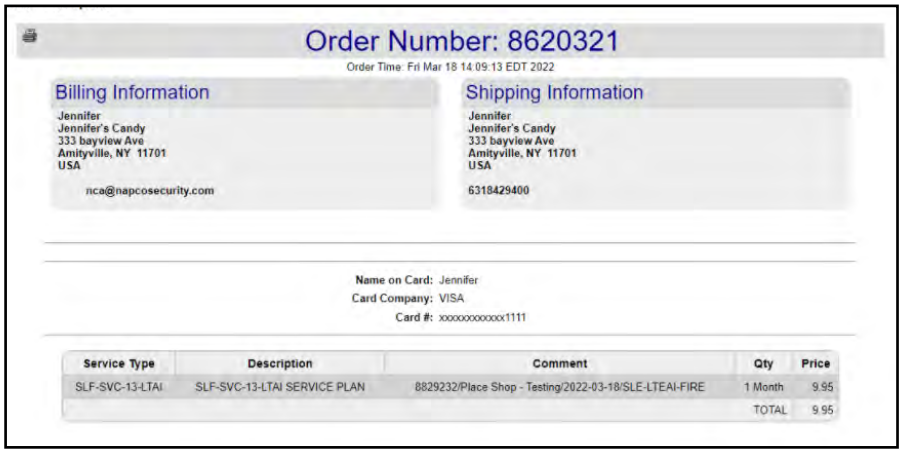
13. Verify your credit card information, then click **Continue**.



14. Review all information, then click **Submit Order**.



15. To complete the activation process, be sure the **Order Number** screen appears!



For NAPCO Limited Warranty, see https://tech.napcosecurity.com/index.php/techlibrary/docdetails/brand_id/1/doc_id/3174

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NAPCO Tech Support

TECH TIP

Date: Friday, April 12, 2024

Subject: Programming an SLE-MAX2 StarLink Communicator for SIA to CID Conversion

Models: StarLink SLE-MAX2-FIRE, SLE-MAX2-CFB and SLE-MAX2-CFB-PS

StarLink SLE-MAX2-series communicators support a SIA to CID conversion feature, where the communicator will automatically convert SIA format reporting codes to CID formatted codes. In addition, SLE-MAX2-series communicators include a default SIA to CID conversion template that can be edited to suit the special formatting requirements of your central station.

This SIA to CID conversion feature can be used when an FACP may only support SIA format or is locked-out or requires special programming to change the reporting format. Note that when this feature is enabled, SIA codes will not report to the central station; the communicator will convert the SIA codes directly to Contact ID. **Note:** Due to the fundamental limitations of SIA reporting codes compared with CID, the converted CID codes may not be the same as if the control panel was reporting CID codes directly. For example, CID can include an Area in the reporting string:

- Alarm: Code 130, Area 03, Zone 26

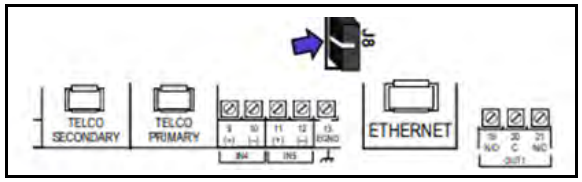
SIA codes do not include Areas; thus the conversion would be:

- Alarm: Code 130, Area 00, Zone 26

Therefore, if the control panel does not include an Area number with the SIA reporting code, the converted CID code will not include the Area number.

Before programming an SLE-MAX2-series StarLink communicator to convert SIA to CID, verify the communicator firmware is version 226.150.30/1.3 or higher, then proceed as follows:

1. Install the **SLE-MF-JMP** jumper into the communicator PC board header marked **J8** with the white line towards the left side of the communicator as shown:



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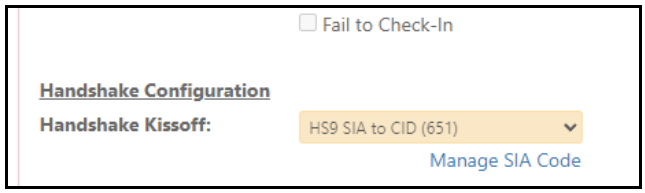
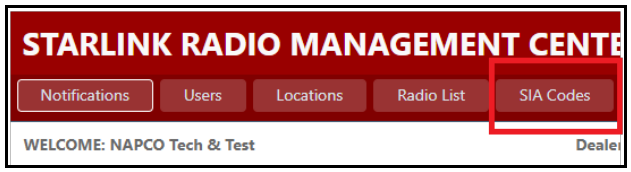
2. Log into the NAPCO NOC website (www.NapcoNOC.com), open the ***Advanced*** tab and set the **Handshake Kissoff** drop-down to **HS9 SIA to CID (651)**.



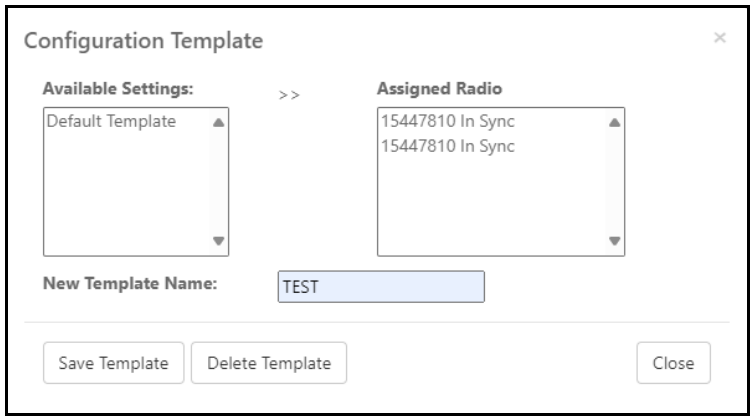
If the default template is used, stop here; no further steps are required. The default template will support most installations; however, you can create a custom template to convert SIA to CID if needed. If a custom template is needed, continue with the following steps.

3. In the NAPCO NOC website (www.NapcoNOC.com), select **SIA Codes**.



4. Select **Manager Template**.

5. Select the default template, type a new name for the template in the **New Template Name** field, select the **Save Template** button, then select **Close**.



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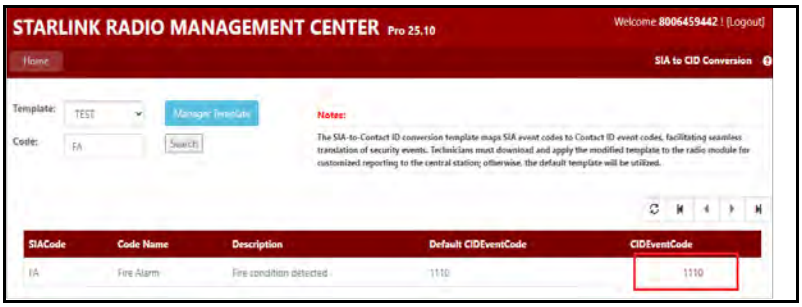
To change a CID code for the selected template, type the SIA code in the **Code** field and select **Search**. When the code appears in the search results, select the code, then select **Edit**.

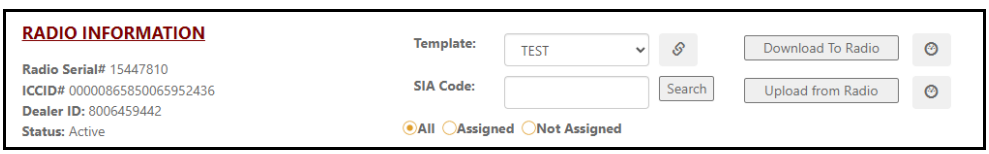


Insert a "**1**" in front of CID alarm codes:

Insert a "**3**" in front of CID restore codes:

Select **Save** to retain your changes. After saving, download the custom template to the communicator by opening the NAPCO NOC ***Advanced*** tab, then select **Manage SIA Code**.

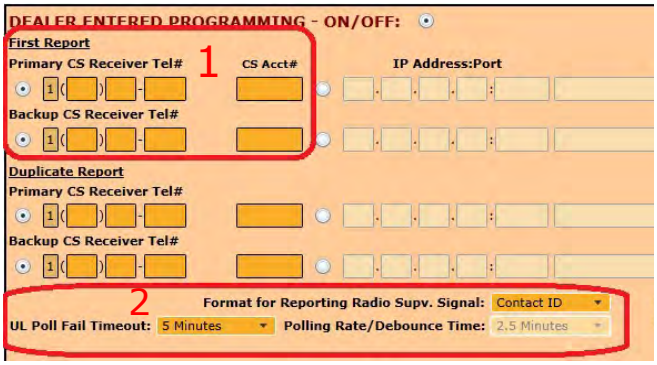
In the **Template** drop-down field, select the custom template name, then select **Download to Radio**.



Installation Quick Start / Checklist for Fire Alarm Control Panel DACT Connect Operation

WI2760LF 6/24

The following summarizes the minimum required NOC programming (http://NapcoNOC.com) and system wiring when connecting a StarLink Fire Communicator to the DACT of an FACP, utilizing dial capture mode reporting. Check the installation and programming instructions for additional wiring and programming options. Be sure all items in the following checklist are performed:

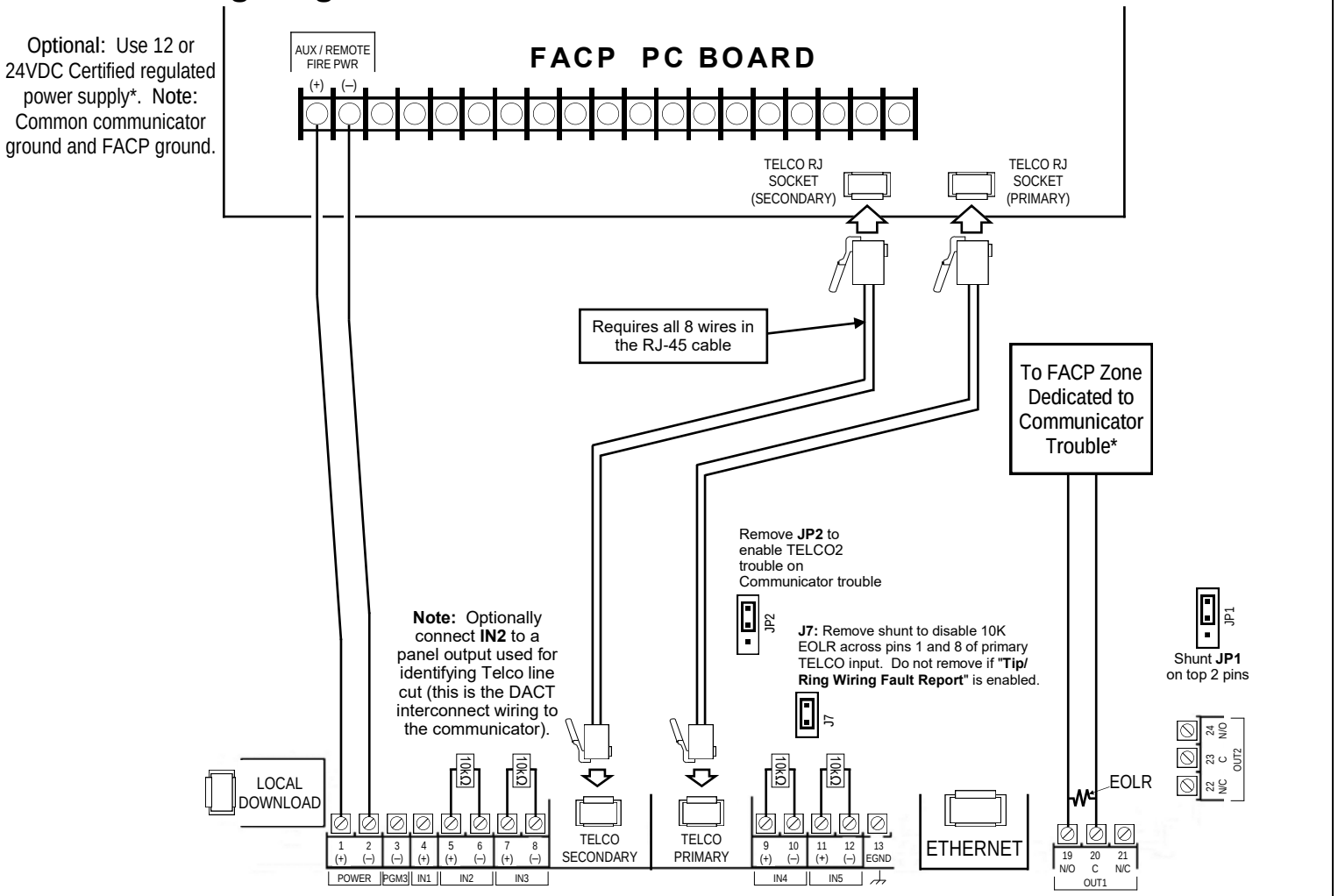


- ☐ **1.** Central Station Receiver Telephone numbers are programmed in the "**Dealer Entered Programming**" section (see image at right):
- ☐ **2.** **UL Poll Fail Timeout** is set (5 min. for NFPA 2010 plan; 60 min. for NFPA 2013 plan or 24hr backup only):
- ☐ **3.** (**OUT1**) is wired to a trouble zone in the FACP. Wire the control panel Listed EOLR across terminals 19 and 20 and ground terminal #8 to a zone or point programmed to monitor communicator troubles --OR--remove jumper **JP2** for automatic supervision.

UL Poll Fail Timeout Settings:

1 NFPA 2010, SLF-SVC-10-MXI Dual Path cellular/IP = 24 hr.
2 NFPA 2010, SLF-SVC-10-MXD Super Dual, Dual Path cellular = 24 hr.
3 NFPA Backup, Sole Path SLF-SVC-BU-MX , Cellular = 24 hr.
4 NFPA 2013-2022, SLF-SVC-13-MXI, Dual Path Cellular & IP = 6 hr.
5 NFPA 2013-2022, SLF-SVC-13-MX, Sole Path, Cellular = 60 min.
6 NFPA 2013-2022 SLF-SVC-13-MXD, Super Dual, Dual Path cellular = 6 hr.
7 NFPA 2010, NYFD, SLF-SVC-10-MSI Dual Path Cellular & IP = 5 min.
8 NFPA 2010, SLF-SVC-10-MX, Sole Path, Cellular = 5 min.

Wiring Diagram for Generic FACPs with TELCO RJ Sockets



StarLink Communicator Terminals (All connections are power limited except battery terminals)

*Not required if **JP2** shunt is removed and FACP monitors TELCO 2.

Note: For NAPCO control panel downloading or remote upgrading of communicator firmware, radio jumper X5_J1 must be removed. Upon activation of the fire trouble relay (open between blue and red harness wires), a fire trouble signal will be transmitted to the central station. For StarLink models SLECDMA-CFB-PS and SLE3/4G-CFB-PS, connect to charger board terminal labeled N/O. If using external relay for radio supervision, relay must be rated for radio input voltage, (12VDC, max current draw=50mA OR 24VDC, max current draw=25mA). A listed low current relay, such as *Space Age Electronics* model SSU-MR-311/C/R is recommended.

NAPCO Tech Support

TECH TIP

Subject: Triggering Radio Inputs from FACP Relays for Dual Path Fire Communicators

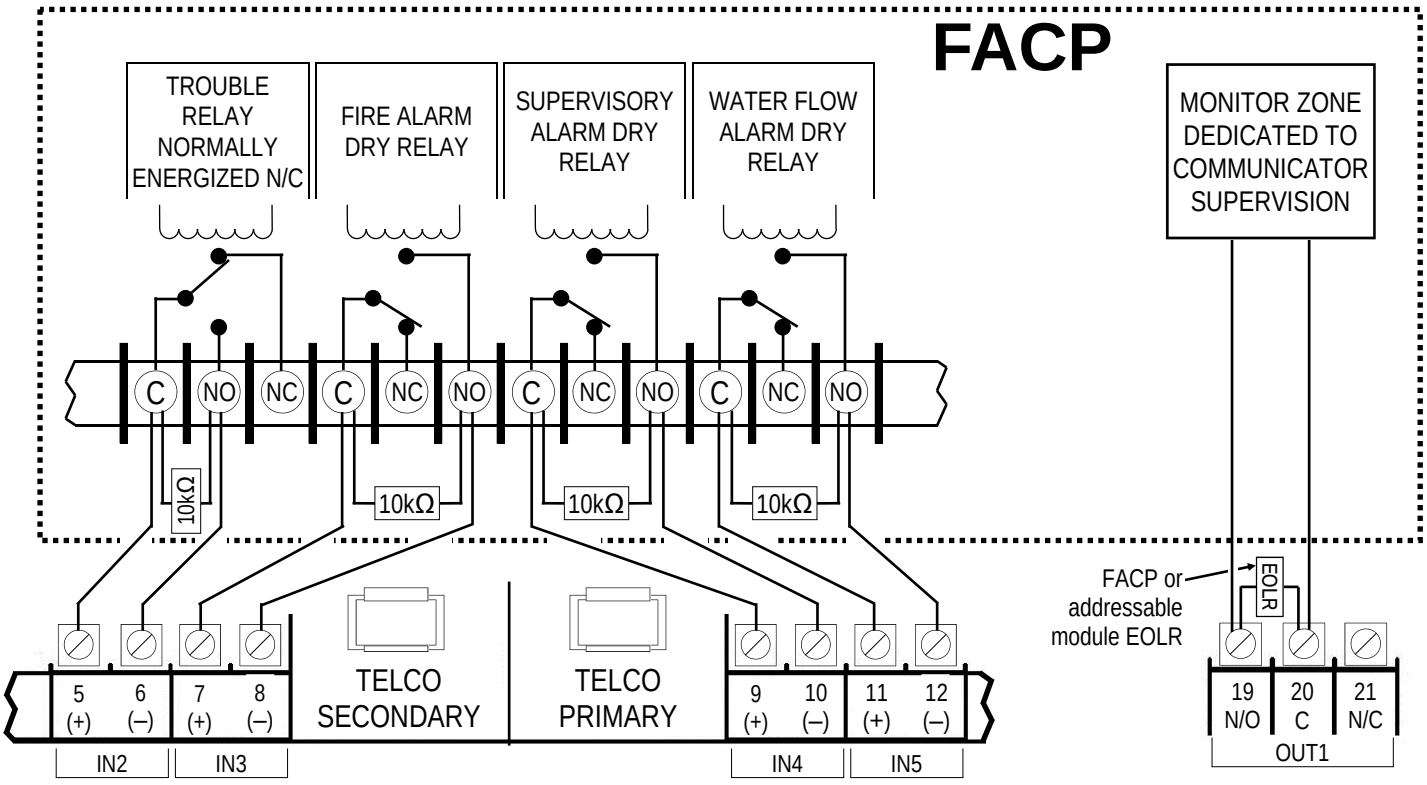
Models: SLE-MAX2-FIRE, SLE-MAX2-CFBPS, SLE-MAX2-CFB

The new StarLink Fire dual path communicator models include the following features:

- Four EOLR zone inputs for connection to FACP relay outputs, providing communication capability to older legacy control panels that may not include a DACT
- Two form "C" relay outputs, eliminating the need for additional listed supervision relays
- Modular style Telco jacks for connection to the FACP DACT

This Tech Tip describes how to connect and configure the (4) zone inputs and supervision relay.

Wire inputs 2-5 to the corresponding relays on the FACP using the supplied 10K EOLRs, as shown below. A short sends an alarm; an open sends a trouble. Wire **OUT1** to a radio trouble zone/point on the FACP, placing the FACP EOLR across the communicator **OUT1** relay **N/O** and **C** terminals. No NOC configuration is required for **OUT1** to function as a communicator supervisory output by default.

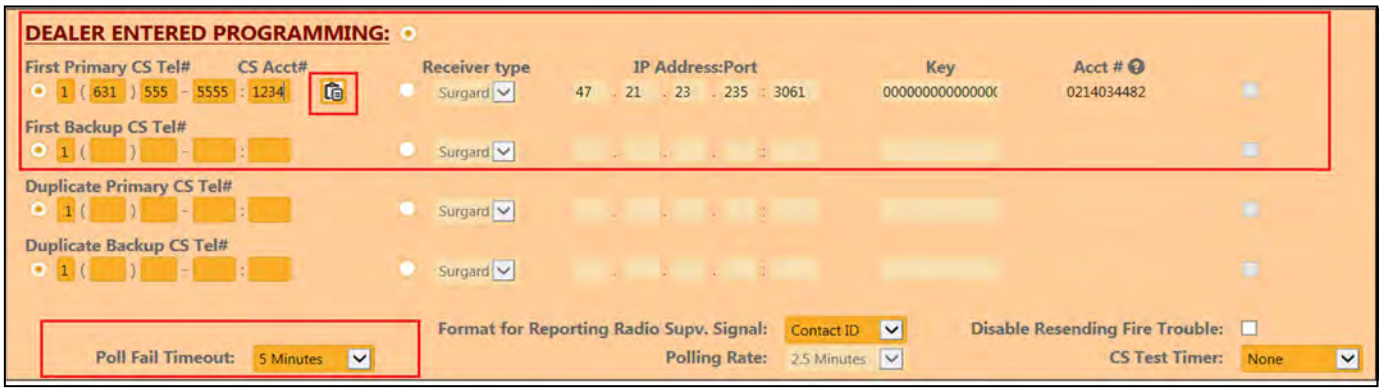


After the communicator is registered, log into the StarLink Radio Management Center (also known as the NAPCO "NOC") at www.NapcoNOC2.com.

(continued)

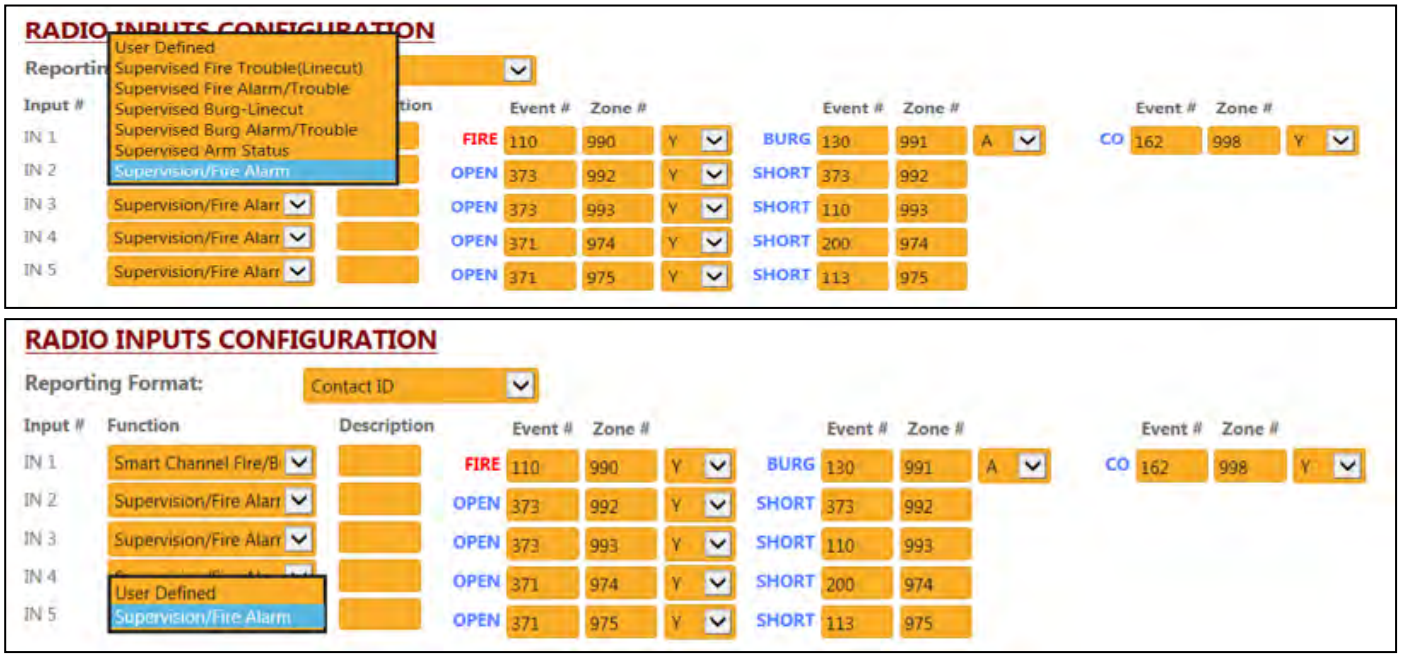
General Tab

1. Click the **Edit** button, then click the radio button located to the right of **DEALER ENTERED PROGRAMMING** to enable.
2. Program the Central Station Primary and Backup telephone and account numbers or IP receiver information.
3. Click the "Copy to Clipboard" icon to enable the inputs to report to the central station.
4. Set the **Poll Fail Timeout** duration to match the selected plan (200 Seconds, 5 Minutes, 60 Minutes, 6 Hours (dual path) or 24 Hours).



Inputs and Outputs Tab

Program inputs 2 through 5 to **Supervision/Fire Alarm**.



Default Input Programming:

- **IN2** - FACP Trouble (CID code 373)
- **IN3** - Fire Alarm (CID code 110)
- **IN4** - Supervisory (CID code 200)
- **IN5** - Water Flow (CID code 113)

Note: This Tech Tip example used the Contact ID reporting defaults indicated above. Reporting codes can be changed in the NOC as needed for other fire reporting applications (e.g. Low pressure, Fire Pump Run/Fail, Carbon Monoxide, etc.). After all changes have been made, click **Save**.

StarLink™ SLE-MAX2-FIRE

Sole/Dual-Path Alarm Communicator Submittal Data Sheet

SLE-MAX2-FIRE
Commercial / Residential Fire / Burglary CAT-M1 alarm capture Communicator. SIM cards are included. Red plastic enclosure. Rated nominal 12/24VDC input.

INTRODUCTION

The **SLE-MAX2-FIRE** *Sole/Dual-Path Alarm Communicator is* specifically designed to interface with FACP (Fire Alarm Control Panels) and comply with UL 864 10th edition. The **SLE-MAX2-FIRE** operates on both the Verizon and AT&T cellular networks and utilizes CAT-M1 technology. This device supports both Sole Path, cellular only; Traditional Dual Path, cellular and IP; and Super Dual™, Supervised Dual Carrier and Dual Path communication methods. Super Dual™, exclusive to NAPCO, is a UL 864 10th edition Certified fire communication service that allows the communicator to utilize two cellular carriers to provide dual path reporting. This is accomplished through the supervision of each carrier at the required NFPA intervals, i.e., 6 Hour supervision for NFPA 2013 through 2022.

For Dual Path cellular/IP reporting, the system can communicate via an on-board Ethernet jack or via Wi-Fi using the optional UL 864 Certified **SLE-WIFI-MODULE**. The communication mode (Sole Path or Dual Path) requires selection of the appropriate service plan at the point of communicator activation. The communicator is equipped with two form "C" dry relays, one for a trouble output and one for an auxiliary output. The unit is also equipped with four EOLR supervised inputs to report a Fire Alarm, a Fire Trouble, a Water Flow Alarm and a Supervisory Alarm, each triggered from the N/O and Common terminals of the associated FACP output relays. This communicator is for use as the primary means of communication with the central station and do not have backup mode capability. This communicator can also be utilized as a Sole Path Cell communicator. No POTS (Telco Line) connection is permitted. For Commercial Burglary installations, under the armed condition, any loss of communication must be treated as a Burglary Alarm at the central station.

For connection to the FACP DACT, the **SLE-MAX2-FIRE** provides two RJ-45 Telco connections to satisfy the FACP telephone requirements. The primary Telco connector can be supervised and can report a trouble signal to the central station upon any open or short on the primary Telco wires that prevents reporting. The secondary telephone line is supervised by the FACP; when a line fault is detected, a signal trouble is reported to the central station through the primary telephone line.

The **SLE-MAX2-FIRE** is compatible with most 12VDC or 24VDC alarm control panels (always adhere to the documentation provided by the control panel manufacturer). Mount to a single-, dual-, or three-gang electrical box and route the wires through the back knock-out(s), or as specified by local codes. **See WI2140 for programming information.**

Summary of Supported Reporting Plans

Sole Path Service Plan (Cellular-only, Verizon & AT&T)

The system selects and locks onto the higher quality cellular carrier signal (primary) upon power up and will reevaluate every 7 days. If the secondary signal exhibits higher quality, the system will switch carriers. If the primary carrier fails, the system will immediately switch carriers.

Traditional Dual Path Service (Cellular, Verizon & AT&T, and IP)

The system selects and locks onto the higher quality cellular carrier signal (primary) upon power up and will reevaluate every 7 days. If the secondary signal exhibits higher quality, the system will switch carriers. If the primary carrier fails, the system will immediately switch carriers. Also requires an IP connection to the subscriber's network via the on-board Ethernet jack. **Note:** The cable modem/router and switch (if any) at the premises requires standby power; therefore a UL 1481, UL 864 or ITE (*Information Technology Equipment*) Certified UPS must be used at the premises to power these devices for 24 hours (unless an engine-driven generator is provided on the premises, then only 4 hours of UPS backup are required).

Super Dual™, Dual Path Service (Cellular-only, Verizon & AT&T)

The system utilizes both cellular carriers to provide a UL 864 Certified dual path service plan. An IP connection is not required. If either cellular carrier fails, the system will continue operating on the remaining carrier and will report the trouble to the central station and will locally annunciate the trouble.

The **SLE-MAX2-FIRE** communicators use proprietary data-capture technology that captures the alarm report from the control panel and transmits the alarm signals to the SLE Control Center (NAPCO NOC); the alarm signals are then forward-

AGENCY LISTINGS

- ETL Listed: All Models Conform to UL Standards: UL 864, UL 2610, UL 985, UL 1023
- New York City Certificate of Approval 2023-TMCOAP-010503-CERT
- CSFM LISTING No.: 7300-0992:0503
- UL Certified to UL 864 10th Edition, UL 2610, UL 985 and UL 1023

ed to ANY central station. The communicator can transmit to any central station capable of receiving SIA Contact ID or 4/2 via DACR technology or the DSC Sur-Gard Model System II or Sur-Gard System V central station receivers, Bosch D6100IPV6 or Bosch D6600 Receiver (with ITS-D6686 Ethernet Adapter) via TCP/IP using standard line security.

The **SLE-MAX2** Series of Communicators are provided with two antennas to reduce the possibility of RF nulls and ensure reliable cellular service. Only one antenna is active at a time, and should the communicator have a loss of adequate signal strength, the communicator will connect to the tower via the other antenna. If neither antenna can connect to the tower within 200 seconds, a trouble output will be activated. If using an external antenna such as from the NAPCO StarLink SLE-ANTEXTXXX Series of Extended Antenna Kits, connect it to the left antenna connector.

StarLink Fire Self-Supervision

NFPA 72 requires that any fire communicator trouble be locally annunciated by the fire panel within 200 seconds of the trouble. The troubles include loss of signal, NOC supervision check-in failure, etc. The StarLink MAX2 Fire communicator models include a "**Self-Supervising Fire Communicator**" feature that allows the communicator to annunciate a communication trouble without the need for wiring to an FACP zone input or any FACP reprogramming. This is accomplished by dropping the emulated phone line voltage to the FACP secondary phone line, causing the FACP to annunciate a communication trouble. To enable Self-Supervision, simply remove Jumper **JP2**. Note that when using Self-Supervision, some FACPs may require the Jumper **J7** shunt to be removed for the Primary Phone line to restore correctly. To also report a communicator trouble to the central station, enable the feature "**Tip/Ring Wiring Fault Report**" in the ***Advanced*** tab in the StarLink NOC.

ADDITIONAL COMPONENTS

In addition to the **SLE-MAX2-FIRE** listed above, the following sub-assemblies are available:

SLE-WIFI-MODULE - Allows your NAPCO StarLink device to connect to the Internet by means of a wireless (Wi-Fi) link, eliminating a wired Ethernet cable connection. **Note:** 7AH battery required when using the **SLE-WIFI-MODULE**. For more information, see WI2191. Not Certified for Commercial or Residential Burglary.

SLE-FIRE-VR - Control Panel Voltage Drop Kit (see WI2580).

SLE-FMBB - StarLink Metal Enclosure for Cable Management.

SLE-DLCBL - Download Cable, 6 feet.

SLE-ANTEXT30 – Antenna kit* with 30 feet of LMR 300 cable.

SLE-ANTEXT50 - Antenna kit* with 50 feet of LMR 300 cable.

SLE-ANTEXT75 - Antenna kit* with 75 feet of LMR 400 cable.

SLE-ANTEXT100 - Antenna kit* with 100 feet of LMR 400 cable.

SLE-ANTEXT04 - Antenna kit * with 4 feet of LMR 300 cable. Ideal for installations that may require a few extras dBs of gain but running the external cable may not be practical.

SPECIFICATIONS

Electrical Ratings for +12V / 24V (powered by the control panel)†

- Input Voltage: 10-24VDC regulated (power-limited output from Certified control panel Aux/Remote Fire Power).

IMPORTANT: Powering the communicator with DC voltage above 27.5VDC could cause damage; if the control panel output voltage is operating between 27.5 - 30.7VDC, the **SLE-FIRE-VR** *Control Panel Voltage Drop Kit* is available to maintain the communicator input voltage below 27.5VDC. **Absolute maximum input voltage with SLE-FIRE-VR installed is 30.7VDC and FWR (Full Wave Rectification voltage) is NOT supported**.

- Input Current:
  10VDC standby: 115mA
  12VDC standby: 101mA
  15VDC standby: 92mA
  24VDC standby: 85mA
  Wi-Fi Module: (Optional) Add 45mA to the above.
  (With peak RF transmission current of 325mA).

Electrical Ratings for the IN 1 Fire Input:

- Input Voltage: 9-25VDC.
- Maximum Input Current: Up to 2mA from FACP NAC circuit

Electrical Ratings for IN 2, IN 3, IN 4, and IN 5:
(Inputs **IN 2, IN 3, IN 4, and IN 5 are** Class B)

- Maximum Loop Voltage: 25VDC input.
- Maximum Loop Current: 1.7mA
- End of Line Resistor (EOLR) Value: 10K

Electrical Ratings for PGM3 Output:

- Open Collector Output: Maximum Voltage 25VDC.
- Maximum PGM Sink Current: 50mA (up to 15VDC), 25mA (15.1VDC - 25VDC)

Physical (W x H x D)

- Plastic Housing: 8 x 5-$^{29}/_{64}$ x 1½" (20.3 x 13.9 x 3.8cm)
- Mounting: Plastic housing includes three keyhole slots for triple gang boxes (see scale template on page 13);
- Antenna Length: 8.25" (21cm)

Environmental

- Operating Temperature: 0°C - 49°C (32°F - 120°F)
- Humidity: Maximum 93% Non-Condensing
- Indoor / dry location use only

†For Commercial Fire installations, a UL Certified Fire Alarm regulated power supply or FACP regulated auxiliary output is required.

*All antenna kits include high quality/low loss LMR 300 or 400 Coax Type N male to SMA male terminated cable, all mounting hardware and StarLink SLE-ANTEXT-ISO Commercial Fire Ground Fault Isolation Plate to ensure that the external antenna will not cause ground fault system troubles. (Any suitable external cellular antenna is permitted by UL). Always follow the manufacturer's installation instructions. **Note:** Antennas are not Certified by UL.

StarLink™

SLE-MAX2-CFB & SLE-MAX2-CFBPS

Sole/Dual-Path Alarm Communicators Submittal Data Sheet

SLE-MAX2-CFB: Commercial / Residential Fire / Burglary CAT-M1 TCP/IP Communicators in red metal housing.

SLE-MAX2-CFBPS: Commercial / Residential Fire / Burglary CAT-M1 TCP/IP Communicators in red metal housing with SLE-ULPS-R power supply and 16.5V / 20VA transformer mounted inside housing.

INTRODUCTION

The **SLE-MAX2-CFB** and **SLE-MAX2-CFBPS** *Sole/Dual-Path Dual SIM Commercial / Residential Fire alarm capture IP communicators* are specifically designed to interface with FACP (Fire Alarm Control Panels) and comply with UL 864 10th edition. The **SLE-MAX2-CFB** and **SLE-MAX2-CFBPS** operate on both the Verizon and AT&T cellular networks and utilize CAT-M1 technology. These devices support both Sole Path, cellular only; Traditional Dual Path, cellular and IP; and Super Dual™, Supervised Dual Carrier / Dual Path communication methods. Super Dual™, exclusive to NAPCO, is a UL 864 10th edition Certified fire communication service that allow the communicators to utilize two cellular carriers to provide dual path reporting. This is accomplished through the supervision of each carrier at the required NFPA intervals, i.e., 6 Hour supervision for NFPA 2013 through 2022.

For dual path cellular/IP reporting, the system can communicate via an on-board Ethernet jack or via Wi-Fi using the optional UL 864 Certified **SLE-WIFI-MODULE**. The communication mode (Sole Path or Dual Path) requires selection of the appropriate service plan at the point of communicator activation. The communicators are equipped with two form "C" dry relays, one for a trouble output and one for an auxiliary output. The units are also equipped with four EOLR supervised inputs to report a Fire Alarm, a Fire Trouble, a Water Flow Alarm and a Supervisory Alarm, each triggered from the N/O and Common terminals of the associated FACP output relays. These communicators are for use as the primary means of communication with the central station and do not have backup mode capability. These Communicators can also be utilized as Sole Path Cell Communicators. No POTS (Telco Line) connection permitted (this communicator model only emulates a telephone line to the control panel and is not equipped with hardware that can monitor a live POTS telephone line). To accommodate the two network SIM cards, several features are provided in the NAPCO NOC Radio Carrier screen (www.NapcoNOC.com). In addition, LEDs and a manual pushbutton, if so equipped, are provided on the radio PCB.

For connection to the FACP DACT, the **SLE-MAX2-CFB** and **SLE-MAX2-CFBPS** provide two RJ-45 Telco connections to satisfy the FACP telephone requirements. The primary Telco connector can be supervised and can report a trouble signal to the central station upon any open or short on the primary Telco wires that prevents reporting. The secondary telephone line is supervised by the FACP; when a line fault is detected, a signal trouble is reported to the central station through the primary telephone line.

The communicators are compatible with most 12VDC or 24VDC alarm control panels (always adhere to the documentation provided by the control panel manufacturer). **See WI2140 for programming information.** The following features are included with models that include a **SLE-ULPS-R** power supply:

- Power limited output to the StarLink PCB 12V input terminals
- Battery connection red and black flying leads
- Monitored battery charging and Active battery test circuits
- StarLink communicator trouble input (from StarLink PC board **PGM1** terminal to detect StarLink communicator trouble)
- Requires a sealed lead acid min 4AH / max 7AH battery for minimum 24-hour standby time (max charge current 200mA)
- Trouble relay output (**C**, **N/O** and **N/C** terminals) to wire to a panel zone dedicated to "Communicator Trouble" (dry contacts). Remove jumper "**J2**" to isolate relay OUT1 common from ground
- Green **AC ON** LED visible from the exterior housing

The housing-mounted transformer (when provided) is mounted inside its own housing compartment with a replaceable UL Certified .5A fast blow primary fuse. 120VAC connections are to be made by a licensed electrician using suitable connectors, in accordance with N.E.C. and local code requirements.

Summary of Supported Reporting Plans

Sole Path Service Plan (Cellular-only, Verizon & AT&T)

The system selects and locks onto the higher quality carrier signal (primary) upon power up and reevaluates every 7 days. If the secondary signal exhibits higher quality, the system switches carriers. If the primary carrier fails, the system immediately switches carriers.

Traditional Dual Path Service (Cellular, Verizon & AT&T, and IP)

The system selects and locks onto the higher quality cellular carrier signal (primary) upon powerup and will reevaluate every 7 days. If secondary signal exhibits higher quality, the system will switch carriers. If the primary carrier fails, the system will immediately switch carriers. Also requires an IP connection to the subscriber's network, via the on-board Ethernet jack. **Note:** The cable modem/router and switch (if any) at the premises requires standby power, therefore a UL 1481, UL 864 or ITE (*Information Technology Equipment*) Certified UPS must be used at the premises to power these devices for 24 hours (unless an engine driven generator is provided on the premises, then only 4 hours of UPS backup are required).

Super Dual™, Dual Path Plan (Cellular-only, Verizon & AT&T)

The system utilizes both cellular carriers to provide a UL 864 Certified dual path service plan. An IP connection is not required. If either cellular carrier fails, the system will continue operating on the

AGENCY LISTINGS

- ETL Listed: All Models Conform to UL Standards: UL 864, UL 2610, UL 985, UL 1023
- New York City Certificate of Approval 2023-TMCOAP-010503-CERT
- CSFM LISTING No.: 7300-0992:0503
- UL Certified to UL 864 10th Edition, UL 2610, UL 985 and UL 1023

remaining carrier and will report the trouble to central station and locally annunciate the trouble.

The communicators use proprietary data-capture technology that captures the alarm report from the control panel in CID, SIA or 4/2 (SIA only evaluated by UL) and transmits the alarm signals to the SLE Control Center. The alarm signals are then forwarded to ANY central station via Contact ID, (SIA is translated to CID by the communicator see WI2140 in the NOC) or 4/2 via DACT from the NOC or to the Napco Virtual IP Central Station Receiver (NCSR), or Sur-Gard System II, Sur-Gard System V, Bosch D6100IPV6 or Bosch D6600 Receiver (with ITS-D6686 Ethernet Adapter) via TCP/IP using standard line security (for Commercial Burglary installations only IP Receivers may be used). The SLE Control Center reports a trouble signal in the event that the network does not receive the expected supervision signal from the wireless communicator.

The StarLink **MAX2** Series of Communicators are provided with two antennas. Only one antenna is active at a time, and should the communicator have a loss of adequate signal strength, the communicator will connect to the tower via the other antenna. If neither antenna can connect to the tower within 200 seconds, a trouble output will be activated. If using an external antenna such as from the NAPCO StarLink **SLE-ANTEXTXXX** Series of Extended Antenna Kits, connect it to the left antenna connector.

StarLink Fire Self-Supervision

NFPA 72 requires that any fire communicator trouble be locally annunciated by the fire panel within 200 seconds of the trouble. The troubles include loss of signal, NOC supervision check-in failure, etc. The StarLink MAX2 Fire communicator models include a "**Self-Supervising Fire Communicator**" feature that allows the communicator to annunciate a communication trouble without the need for wiring to an FACP zone input or any FACP reprogramming. This is accomplished by dropping the emulated phone line voltage to the FACP secondary phone line, causing the FACP to annunciate communication trouble. To enable Self-Supervision, simply remove Jumper **JP2**. Note that when using Self-Supervision, some FACPs may require the Jumper **J7** shunt to be removed for the Primary Phone line to restore correctly. To also report a communicator trouble to the central station, enable the feature "**Tip/Ring Wiring Fault Report**" in the ***Advanced*** tab in the StarLink NOC.

ADDITIONAL COMPONENTS

SLE-ULPS-R - Power Supply. Required for installations where the control panel cannot provide the Auxiliary power required to operate the StarLink communicator. Uses a standard 4AH / 12V minimum (7AH maximum, required with optional Wi-Fi Module) rechargeable battery to provide communicator standby power. Requires connection to either the model NAPCO TRF12/T123 (16.5V / 20VA) external plug-in transformer or the chassis-mounted 16.5VAC / 20VA transformer affixed inside the housing (see wiring diagrams in WI). **Note:** For models without the SLE-ULPS-R, connect the communicator terminals 1 and 2 to the control panel Aux Power terminals (observing polarity).

SLE-WIFI-MODULE - Allows your NAPCO StarLink™ device to connect to the Internet by means of a wireless (Wi-Fi) link, eliminating a wired Ethernet cable connection. **Note:** 7AH battery required when using the **SLE-WIFI-MODULE**. For more information, see WI2191. Not UL Certified for Commercial or Residential Burglary.

SLE-FIRE-VR - Control Panel Voltage Drop Kit (see WI2580).

SLE-FMBB - StarLink Metal Enclosure for Cable Management.

SLE-DLCBL - Download Cable, 6 feet

SLE-ANTEXT30 – Antenna kit* with 30 feet of LMR 300 cable.

SLE-ANTEXT50 - Antenna kit* with 50 feet of LMR 300 cable.

SLE-ANTEXT75 - Antenna kit* with 75 feet of LMR 400 cable.

SLE-ANTEXT100 - Antenna kit* with 100 feet of LMR 400 cable.

SLE-ANTEXT04 - Antenna kit * with 4 feet of LMR 300 cable. Ideal for installations that may require a few extras dBs of gain but running the external cable may not be practical.

GEM-Tamperkit - Tamper switches & screws to protect metal housing.

SPECIFICATIONS

The specifications below apply to all communicator models unless otherwise stated:

Electrical Ratings for 120VAC, 60Hz
For Models with Power Supply (SLE-MAX2-CFBPS)

- Input Voltage: 120VAC nominal
- Input Current: 200mA maximum
- Maximum Charging Current: 200mA

Electrical Ratings for +12V / 24V
For Models without Power Supply (SLE-MAX2-CFB)[†]

- Input Voltage: 10-24VDC regulated (power-limited output from UL Certified control panel Aux/Remote Fire Power).
- Input Current:
  10VDC standby: 115mA
  12VDC standby: 101mA
  15VDC standby: 92mA
  24VDC standby: 85mA

Wi-Fi Module: (Optional) Add 45mA to the above.
(With peak RF transmission current of 325mA).

Electrical Ratings for the IN 1 Fire Input:

- Input Voltage: 9-25VDC.
- Maximum Input Current: Up to 2mA from FACP NAC circuit

Electrical Ratings for IN 2, IN 3, IN 4, and IN 5:
(Inputs **IN 2, IN 3, IN 4, and IN 5 are** Class B)

- Maximum Loop Voltage: 25VDC.
- Maximum Loop Current: 1.7mA
- End of Line Resistor (EOLR) Value: 10K (2 req'd)

Electrical Ratings for PGM3 Output:

- Open Collector Output: Maximum Voltage 3V when active; 25V maximum when not active.
- Maximum PGM Sink Current: 50mA (up to 15VDC), 25mA (15.1VDC - 25VDC)

Physical (W x H x D)

- Metal Housing: 11½ x 9½ x 3½" (29.2 x 24.1 x 8.9cm)
- Mounting: Metal housing includes two keyhole slots for wall mounting (see measurements in WI)
- Antenna Length: 8.25" (21cm)

Environmental

- Operating Temperature: 0°C - 49°C (32°F - 120°F)
- Humidity: Maximum 93% Non-Condensing
- Indoor / dry location use only

[†]For Commercial Fire installations, a UL Certified Fire Alarm regulated power supply or FACP regulated auxiliary output is required.

*All antenna kits include high quality/low loss LMR 300 or 400 Coax Type N male to SMA male terminated cable, all mounting hardware and StarLink SLE-ANTEXT-ISO Commercial Fire Ground Fault Isolation Plate to ensure that the external antenna will not cause ground fault system troubles. (Any suitable external cellular antenna is permitted by UL). Always follow the manufacturer's installation instructions. **Note:** Antennas are not Certified by UL.

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StarLink MAX2-Series

Dual Path Fire Communicators Using Super Dual™ SIM Supervision

AHJ Inspection Guide and Super Dual™ SIM Supervision Test Procedures

WI2752LF 6/24

The StarLink MAX2 series supports Super Dual™ UL 864 10th edition listed service providing two fully supervised cellular reporting paths (AT&T and Verizon), as an alternative to traditional cell/IP dual path reporting, eliminating the need for an IP connection when dual path reporting is required. It also addresses AHJ concerns related to incompliance with NFPA 72 2022 Section 26.6.3.13 for the required 24 hour Secondary Power, which most often cannot be properly verified for IP reporting through the subscriber's network. Models **SLE-MAX2-FIRE**, **SLE-MAX2-CFB** and **SLE-MAX2-CFBPS** are fully compliant with NFPA 2013-2022 editions, capable of locally indicating and communicating signal failures to the central station within 6 hours of an outage of either path.

The following Super Dual testing guide is intended to assist with the AHJ inspection of StarLink MAX2 Fire "Super Dual" communicator installations. All required testing procedures are described, followed by the correct system responses. The testing procedure includes the emulation of the failure of each cellular channel (SIM1 and SIM2), allowing the AHJ to observe the system's ability to switch from one carrier to the other, upon failure of one path. This procedure is applicable to all MAX2 series communicators operating under a Super Dual™ service plan, purchased from NAPCO ComNet (www.NapcoComNet.com).

Normal LED Indications

With the communicator in standby mode, ensure the LEDs display as follows:

LED	Verify this Condition	Passed?
Yellow Operational LED **D4**	Blinks every 10 seconds (indicates normal operation).	☐
Green RF Signal LED **D3**	Blinks at least 2 times (indicates minimally acceptable signal strength).	☐
Red Trouble LED **D5**	OFF (indicates no trouble present).	☐
Trouble Relay Output on SLEULPS-R Trouble LED	OFF (indicates no trouble present).	☐

Signal Loss Test

This test emulates the failure of cellular carrier SIM1 and ensures the communicator indicates a supervisory trouble condition to the FACP and central station upon loss of path supervision within the required time and that the communicator correctly switches carriers, as required.

Press the PCB button to select SIM1 (red LED = Verizon) as the active carrier and remove both antennas.

Verify this Condition	Passed?
Ensure communicator goes into trouble within 200 seconds (i.e., 3 minutes and 20 seconds).	☐
Ensure Red Trouble LED **D5** blinks 5 times.	☐
Ensure Trouble Output **OUT1** relay trips OR if jumper **JP2** is removed to enable self-supervision, verify Telco 2 drops voltage. **Note:** The Telco 2 trouble indication may be delayed depending on the control panel configuration and model in use.	☐
Verify the communicator automatically switches carriers from SIM1 (red LED = Verizon) to SIM2 (blue LED = AT&T).	☐

Reinstall the left antenna, then reinstall the right antenna.

Verify this Condition	Passed?
Wait for the communicator to establish a connection to the SIM2 carrier.	☐
Verify the communicator sends an E788 Z101 (Trouble SIM1) to the central station.	☐

(continued)

Wait a minimum of 3 minutes, then press the PCB button to toggle back to SIM1 (red LED = Verizon).

Verify this Condition	Passed?
Verify the radio re-establishes a connection to the SIM2 carrier (blue LED = AT&T) and sends an R788 Z101 (Trouble Restore SIM1) to the central station.	☐
Ensure Red Trouble LED **D5** stops blinking.	☐
Ensure Trouble Output **OUT1** relay returns to normal OR if jumper **JP2** is removed to enable self-supervision, verify Telco 2 returns to normal voltage. **Note:** Clearing the Telco 2 trouble indication may be delayed depending on the control panel configuration and model in use.	☐

This test emulates the failure of cellular carrier SIM2 and ensures the communicator indicates a supervisory trouble condition to the FACP and central station upon loss of path supervision within the required time and that the communicator correctly switches carriers, as required.

Select SIM2 (blue LED = AT&T) as the active carrier and remove both antennas, then observe the following indications:

Verify this Condition	Passed?
Ensure communicator goes into trouble within 200 seconds (i.e., 3 minutes and 20 seconds).	☐
Ensure Red Trouble LED **D5** blinks 5 times.	☐
Ensure Trouble Output **OUT1** relay trips OR if jumper **JP2** is removed to enable self-supervision, verify Telco 2 drops voltage. **Note:** The Telco 2 trouble indication may be delayed depending on the control panel configuration and model in use.	☐
Verify the communicator automatically switches carriers from SIM2 (blue LED = AT&T) to SIM1 (red LED = Verizon)	☐

Reinstall the left antenna, then reinstall the right antenna.

Verify this Condition	Passed?
Wait for the communicator to establish a connection to the selected carrier.	☐
Verify the communicator sends an E788 Z102 (Trouble SIM2) to the central station.	☐

Wait a minimum of 3 minutes, then press the PCB button to toggle back to SIM2 (blue LED = AT&T).

Verify this Condition	Passed?
Verify the radio re-establishes a connection to the SIM2 carrier (blue LED = AT&T) and sends an R788 Z102 (Trouble Restore SIM2).	☐
Ensure Red Trouble LED **D5** stops blinking.	☐
Ensure Trouble Output **OUT1** relay returns to normal OR if jumper **JP2** is removed to enable self-supervision, verify Telco 2 returns to normal voltage. **Note:** Clearing the Telco 2 trouble indication may be delayed depending on the control panel configuration and model in use.	☐

(continued)

The model **SLE-MAX2-CFBPS** Commercial / Residential Fire / Burglary communicator (in red metal housing) is equipped with an **SLE-ULPS-R** power supply and 16.5V / 20VA transformer mounted inside housing.

With this **SLE-MAX2-CFBPS**, perform the following tests:

AC Failure Test

Remove radio AC power and observe the following **SLEULPS-R** power supply indications:

LED on the SLEULPS-R	Verify this Condition	Passed?
Yellow Trouble LED	Blinks once.	☐
Trouble Relay Output	Activates after 2 hours; check for proper trouble annunciation at FACP.	☐

Verify this Condition	Passed?
If jumper **JP2** is removed to enable self-supervision, verify Telco 2 returns to normal voltage. **Note:** Clearing the Telco 2 trouble indication may be delayed depending on the control panel configuration and model in use.	☐

Restore radio AC power:

LED on the SLEULPS-R	Verify this Condition	Passed?
Yellow Trouble LED	Turns off.	☐
Trouble Relay Output	Restores; check for proper trouble restoral at FACP.	☐

Verify this Condition	Passed?
If jumper **JP2** is removed to enable self-supervision, verify Telco 2 drops voltage. **Note:** Clearing the Telco 2 trouble indication may be delayed depending on the control panel configuration and model in use.	☐

No Battery / Low Battery Test

Disconnect the radio battery and observe the following **SLEULPS-R** power supply indications:

LED on the SLEULPS-R	Verify this Condition	Passed?
Yellow Trouble LED	Blinks twice.	☐
Trouble Relay Output	Activates within 200 seconds; check for proper trouble annunciation at FACP	☐

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StarLink™ SLE-MAX2-CFBPS
Dual Path Fire Communicator, IP with Cell Backup
NFPA 2013 - 2022 Editions
AHJ Inspection Guide

WI2261 6/24

The NAPCO **SLE-MAX2-CFBPS** Series Commercial Fire communicator, fully compliant with NFPA 2013-2022 editions, is approved as a Dual Path fire alarm communicator. The capability of indicating and communicating signal failures to the central station within 6 hours of an outage allow this communicator to replace two existing telephone lines. **Note:** The StarLink **SLE-MAX2-CFBPS** Series communicator may also be configured as a Sole Path Fire communicator, fully compliant with the NFPA 2013-2022 editions.

The following testing guide is intended to assist with the AHJ inspection of this StarLink Fire communicator installation. All required testing procedures are described, followed by the correct system responses. Ensure that in cases where a communicator trouble output is connected to an input on the FACP, the fire control panel properly annunciates the trouble condition.

Normal LED Indications

With the StarLink communicator in standby mode, ensure the LEDs display as follows:

LED	Verify this Condition	Passed?
Yellow Operational LED **DS15**	1 Slow Blink (indicates normal operation).	☐
Yellow Operational LED **D4**	Blinks every 10 seconds (indicates normal operation).	☐
Green IP Network LED **DS14**	1 Blink (Static IP) or 2 Blinks (DHCP).	☐
Green RF Signal LED **D3**	Blinks at least 2 times (indicates minimally acceptable signal strength).	☐
Red IP Trouble LED **DS16**	OFF (indicates no trouble present).	☐
Red Trouble LED **D5**	OFF (indicates no trouble present).	☐
Trouble Relay Output on SLEULPS-R Trouble LED	OFF (indicates no trouble present).	☐

AC Failure Test

Remove radio AC power and observe the following **SLEULPS-R** power supply indications:

LED on SLEULPS-R	Verify this Condition	Passed?
Yellow Trouble LED	Blinks once.	☐
Trouble Relay Output	Activates after 2 hours; check for proper trouble annunciation at FACP.	☐

Restore communicator AC power:

Yellow Trouble LED	Turns off.	☐
Trouble Relay Output	Restores; check for proper trouble restoral at FACP.	☐

No Battery / Low Battery Test

Disconnect the radio battery and observe the following **SLEULPS-R** power supply indications:

LED on SLEULPS-R	Verify this Condition	Passed?
Yellow Trouble LED	Blinks twice.	☐
Trouble Relay Output	Activates within 200 seconds; check for proper trouble annunciation at FACP	☐

(continued)

Reconnect the communicator battery:

Yellow Trouble LED	Turns off.	☐
Trouble Relay Output	Restores; check for proper trouble restoral at FACP.	☐

Signal Loss Test

This test ensures that the StarLink communicator will indicate a supervisory trouble condition to the FACP and central station upon loss of path supervision within the required time.

Remove the primary (left) antenna and observe the following indications:

LED	Verify this Condition	Passed?
Red Trouble LED **D5**	Blinks 5 times.	☐
Trouble Relay Output on SLEULPS-R Trouble LED	Blinks 4 times.	☐
	Supervisory signal **E788 (zone 1)** will be received by the central station within 6 hours of the antenna being removed.	☐

Reconnect the antenna:

Red Trouble LED **D5**	Turns off.	☐
Trouble Relay Output on SLEULPS-R Trouble LED	Turns off.	☐
	Supervisory restore signal **R788 (zone 1)** will be received by the central station within 200 seconds of the antenna being reconnected.	☐

Note: In cases where the StarLink communicator may be located in close proximity to the cell tower, there is a possibility that the communicator may operate properly, even with the antenna removed.

IP Signal Loss Test

This test ensures that the StarLink communicator will indicate a supervisory trouble condition to the FACP and central station upon loss of signal within the required time period.

Remove the Ethernet cable and observe the following indications:

LED	Verify this Condition	Passed?
Red Trouble LED **DS16**	Blinks 1 time every 4 seconds.	☐
Yellow Trouble LED **DS15**	Remains on solid.	☐
Green IP Network LED **DS14**	Turns off.	☐
Trouble Relay Output on SLEULPS-R Trouble LED	Blinks 4 times.	☐
	Supervisory signal **E788 (zone 2)** will be received by the central station within 200 seconds of the Ethernet cable being removed.	☐

(continued)

Reconnect the Ethernet cable:

Red Trouble LED **DS16**	Turns off.	☐
Yellow Trouble LED **DS15**	Slow blink.	☐
Trouble Relay Output on SLEULPS-R Trouble LED	Turns off.	☐
Green IP Network LED **DS14**	1 Blink (Static IP) or 2 Blinks (DHCP)	☐
	Supervisory restore signal **R788 (zone 2)** will be received by the central station within 200 seconds of the Ethernet cable being reconnected.	☐

IP Cable and Antenna Signal Loss Test

Remove both the Ethernet cable and antenna, then observe the following indications:

LED	Verify this Condition	Passed?
Red Trouble LED **DS16**	Blinks 1 time every 4 seconds.	☐
Yellow Trouble LED **DS15** on SLEULPS-R	Remains on solid.	☐
Green IP Network LED **DS14**	Turns off.	☐
Red Trouble LED **D5**	Blinks 5 times.	☐
Trouble Relay Output on SLEULPS-R Trouble LED	Blinks 4 times.	☐
	Supervisory signal **E356** or **YC** will be received by the central station within 6 hours of the Ethernet cable and antenna being removed.	☐

Reconnect both the Ethernet cable and antenna:

Red Trouble LED **DS16**	Turns off.	☐
Yellow Trouble LED **DS15**	Slow blink.	☐
Trouble Relay Output on SLEULPS-R Trouble LED	Turns off.	☐
Green IP Network LED **DS14**	1 Blink (Static IP) or 2 Blinks (DHCP)	☐
Red Trouble LED **D5**	Turns off.	☐
	Supervisory signal **R356** or **YK** will be received by the central station within 6 hours of the Ethernet cable antenna being reconnected.	☐

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StarLink™ SLE-MAX2-FIRE & SLE-MAX2-CFB Dual Path Fire Communicators, IP with Cell Backup NFPA 2013-2022 Editions AHJ Inspection Guide

WI2263 6/24

The NAPCO **SLE-MAX2-FIRE** and **SLE-MAX2-CFB** Series Dual Path Commercial Fire communicators, fully compliant with NFPA 2013-2022 editions, are approved as Dual Path fire alarm communicators. The capability of indicating and communicating signal failures to the central station within 6 hours of an outage allows each unit to replace two existing telephone lines. **Note:** Each StarLink communicator may also be configured as a Sole Path Fire communicator, fully compliant with the NFPA 2013-2022 editions.

The following testing guide is intended to assist with the AHJ inspection of StarLink Fire communicator installations. All required testing procedures are described, followed by the correct system responses. Ensure that in cases where a StarLink communicator trouble output is connected to an input on the FACP, the fire control panel properly annunciates the trouble condition.

Normal LED Indications

With the StarLink communicator unit in standby mode, ensure the LEDs display as follows:

LED	Verify this Condition	Passed?
Yellow Operational LED **DS15**	1 Slow Blink (indicates normal operation).	☐
Yellow Operational LED **D4**	Blinks every 10 seconds (indicates normal operation).	☐
Green IP Network LED **DS14**	1 Blink (Static IP) or 2 Blinks (DHCP).	☐
Green RF Signal LED **D3**	Blinks at least 2 times (indicates minimally acceptable signal strength).	☐
Red IP Trouble LED **DS16**	OFF (indicates no trouble present).	☐
Red Trouble LED **D5**	OFF (indicates no trouble present).	☐

AC Failure Test
No Battery / Low Battery Test

The StarLink communicator models are powered directly from the FACP power supply; communicator AC Failure and Battery Failure tests are not required.

Signal Loss Test

This test ensures that the StarLink communicator will indicate a supervisory trouble condition to the FACP and central station upon loss of path supervision within the required time.

Remove the primary (left) antenna and observe the following indications:

LED	Verify this Condition	Passed?
Red Trouble LED **D5**	Blinks 5 times.	☐
Trouble Relay Output on PGM1 Trouble Output	Activates within 6 hours; check for proper trouble annunciation at FACP	☐
	Supervisory signal **E788 (zone 1)** will be received by the central station within 6 hours of the antenna being removed.	☐

(continued)

Reconnect the antenna:

Red Trouble LED **D5**	Turns off.	☐
Trouble Relay Output on PGM1 Trouble Output	Restores; check for proper trouble restoral at FACP.	☐
	Supervisory restore signal **R788 (zone 1)** will be received by the central station within 6 hours of the antenna being reconnected.	☐

Note: In cases where the StarLink communicator may be located in close proximity to the cell tower, there is a possibility that the StarLink communicator may operate properly, even with the antenna removed.

IP Signal Loss Test

This test ensures that the StarLink communicator will indicate a supervisory trouble condition to the FACP and central station upon loss of signal within the required time period.

Remove the Ethernet cable and observe the following indications:

LED	Verify this Condition	Passed?
Red Trouble LED **DS16**	Blinks 1 time every 4 seconds.	☐
Yellow Trouble LED **DS15**	Remains on solid.	☐
Green IP Network LED **DS14**	Turns off.	☐
Trouble Relay Output on PGM1	Activates within 6 hours; check for proper trouble annunciation at FACP	☐
	Supervisory signal **E788 (zone 2)** will be received by the central station within 200 seconds of the Ethernet cable being removed.	☐

Reconnect the Ethernet cable:

Red Trouble LED **DS16**	Turns off.	☐
Yellow Trouble LED **DS15**	Slow blink.	☐
Trouble Relay Output on PGM1	Restores; check for proper trouble restoral at FACP.	☐
Green IP Network LED **DS14**	1 Blink (Static IP) or 2 Blinks (DHCP)	☐
	Supervisory restore signal **R788 (zone 2)** will be received by the central station within 200 seconds of the Ethernet cable being reconnected.	☐

(continued)

IP Cable and Antenna Signal Loss Test

Remove both the Ethernet cable and antenna, then observe the following indications:

LED	Verify this Condition	Passed?
Red Trouble LED **DS16**	Blinks 1 time every 4 seconds.	☐
Yellow Trouble LED **DS15** on SLEULPS-R	Remains on solid.	☐
Green IP Network LED **DS14**	Turns off.	☐
Red Trouble LED **D5**	Blinks 5 times.	☐
Trouble Relay Output on PGM1	Activates within 6 hours; check for proper trouble annunciation at FACP	☐
	Supervisory signal **E356** or **YC** will be received by the central station within 200 seconds of the Ethernet cable being removed and 6 hours of the antenna being removed.	☐

Reconnect both the Ethernet cable and antenna:

Red Trouble LED **DS16**	Turns off.	☐
Yellow Trouble LED **DS15**	Slow blink.	☐
Trouble Relay Output on PGM1 Trouble Output	Restores; check for proper trouble restoral at FACP.	☐
Green IP Network LED **DS14**	1 Blink (Static IP) or 2 Blinks (DHCP)	☐
Red Trouble LED **D5**	Turns off.	☐
	Supervisory signal **R356** or **YK** will be received by the central station within 6 hours of the Ethernet cable antenna being reconnected.	☐

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(Note: Technical Service is for security professionals only)
Publicly traded on NASDAQ Symbol: NSSC

StarLink™ SLE-MAX2-FIRE & SLE-MAX2-CFB Sole Path Fire Communicators NFPA 2013-2022 Editions AHJ Inspection Guide

WI2178 6/24

The NAPCO **SLE-MAX2-FIRE** and **SLE-MAX2-CFB** Series Commercial Fire radio communicators (includes models listed above), fully compliant with NFPA 2013-2022 editions, are approved as fire alarm communicators. The capability of indicating and communicating signal failures to the central station within 60 minutes of an outage allows these communicators to replace existing telephone lines.

The following testing guide is intended to assist with the AHJ inspection of StarLink Fire communicator installations. All required testing procedures are described, followed by the correct system responses. Ensure that in cases where a communicator trouble output is connected to an input on the FACP, the fire control panel properly annunciates the trouble condition.

Normal LED Indications

With the StarLink communicator in standby mode, ensure the LEDs display as follows:

LED	Verify this Condition	Passed?
Yellow Operational LED **D4**	Blinks every 10 seconds (indicates normal operation).	☐
Green RF Signal LED **D3**	Blinks at least 2 times (indicates minimally acceptable signal strength).	☐
Red Trouble LED **D5**	OFF (indicates no trouble present).	☐

Yellow Trouble LED on the SLEULPS-R	OFF (indicates no trouble present).	☐

AC Failure Test
No Battery / Low Battery Test

Each StarLink communicator model is powered directly from the FACP power supply; radio AC Failure and Battery Failure tests are not required.

Signal Loss Test

This test ensures that the StarLink communicator will indicate a supervisory trouble condition to the FACP and central station upon loss of path supervision within the required time period.

Remove the primary (left) antenna and observe the following indications:

LED	Verify this Condition	Passed?
Red Trouble LED **D5**	Blinks 5 times.	☐
Yellow Trouble LED on SLEULPS-R	Blinks 4 times.	☐
Trouble Relay Output on SLEULPS-R	Activates within 60 minutes; check for proper trouble annunciation at FACP	☐
	Supervisory signal **E356** or **YC** will be received by the central station within 60 minutes of the antenna being removed.	☐

(continued)

Reconnect the antenna:

Red Trouble LED **D5**	Turns off.	☐
Yellow Trouble LED on SLEULPS-R	Turns off.	☐
Trouble Relay Output on SLEULPS-R	Restores; check for proper trouble restoral at FACP.	☐
	Supervisory restore signal **R356** or **YK** will be received by the central station within 60 minutes of the antenna being reconnected.	☐

Note: In cases where the radio may be located in close proximity to the cell tower, there is a possibility that the StarLink communicator may operate properly, even with the antenna removed.

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StarLink™ SLE-MAX2-CFBPS
Sole Path Fire Communicator
NFPA 2013-2022 Editions
AHJ Inspection Guide

WI2176 6/24

The NAPCO StarLink **SLE-MAX2-CFBPS** Series Commercial Fire communicator, fully compliant with NFPA 2013-2022 editions, is approved as a fire alarm communicator. The capability of indicating and communicating signal failures to the central station within 60 minutes of an outage allows the communicator to replace existing telephone lines.

The following testing guide is intended to assist with the AHJ inspection of Fire communicator installations. All required testing procedures are described, followed by the correct system responses. Ensure that in cases where a communicator trouble output is connected to an input on the FACP, the fire control panel properly annunciates the trouble condition.

Normal LED Indications

With the StarLink communicator in standby mode, ensure the LEDs display as follows:

LED	Verify this Condition	Passed?
Yellow Operational LED **D4**	Blinks every 10 seconds (indicates normal operation).	☐
Green RF Signal LED **D3**	Blinks at least 2 times (indicates minimally acceptable signal strength).	☐
Red Trouble LED **D5**	OFF (indicates no trouble present).	☐

Yellow Trouble LED on the SLEULPS-R	OFF (indicates no trouble present).	☐

AC Failure Test

Remove radio AC power and observe the following **SLEULPS-R** power supply indications:

LED on the SLEULPS-R	Verify this Condition	Passed?
Yellow Trouble LED	Blinks once.	☐
Trouble Relay Output	Activates after 2 hours; check for proper trouble annunciation at FACP.	☐

Restore radio AC power:

Yellow Trouble LED	Turns off.	☐
Trouble Relay Output	Restores; check for proper trouble restoral at FACP.	☐

No Battery / Low Battery Test

Disconnect the radio battery and observe the following **SLEULPS-R** power supply indications:

LED on the SLEULPS-R	Verify this Condition	Passed?
Yellow Trouble LED	Blinks twice.	☐
Trouble Relay Output	Activates within 200 seconds; check for proper trouble annunciation at FACP	☐

Reconnect the radio battery:

Yellow Trouble LED	Turns off.	☐
Trouble Relay Output	Restores; check for proper trouble restoral at FACP.	☐

(continued)

Signal Loss Test

This test ensures that the StarLink communicator will indicate a supervisory trouble condition to the FACP and central station upon loss of path supervision within the required time period.

Remove the primary (left) antenna and observe the following indications:

LED	Verify this Condition	Passed?
Red Trouble LED **D5**	Blinks 5 times.	☐
Yellow Trouble LED on SLEULPS-R	Blinks 4 times.	☐
Trouble Relay Output on SLEULPS-R	Activates within 60 minutes; check for proper trouble annunciation at FACP	☐
	Supervisory signal **E356** or **YC** will be received by the central station within 60 minutes of the antenna being removed.	☐

Reconnect the antenna:

Red Trouble LED **D5**	Turns off.	☐
Yellow Trouble LED on SLEULPS-R	Turns off.	☐
Trouble Relay Output on SLEULPS-R	Restores; check for proper trouble restoral at FACP.	☐
	Supervisory restore signal **R356** or **YK** will be received by the central station within 60 minutes of the antenna being reconnected.	☐

Note: In cases where the radio may be located in close proximity to the cell tower, there is a possibility that the communicator may operate properly, even with the antenna removed.

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StarLink Remote Antenna Kits
For StarLink SLE Fire Series UL Listed Communicators
Installation Instructions

WI2230ELF 11/20

The **StarLink *Remote Antenna Kits*** are designed to increase LTE cellular transmission signal strength by providing a weatherproof exterior antenna option for the StarLink SLE Fire Series UL Listed communicators. The kits include a dual wide band, 4-9dBi omnidirectional indoor / outdoor antenna that provides improved signal performance in weak cellular signal areas. The antenna is foam filled for vibration stabilization and long lasting performance in extreme conditions. Each antenna includes an L-bracket with stainless steel nuts and U bolts for pole mounting (up to 2" diameter poles). Also included in the kit is the **SLE-ANTEXT-ISO** non-conductive mounting plate that is used in commercial fire applications to ground-fault isolate the antenna (see reverse). The kits include stainless steel coated cable clamps and low loss, interconnecting coaxial cables of differing length that connect the antenna to the standard SMA female threaded connector included with all StarLink communicator models.

Technical Specifications

Radiation Pattern.....Omni-Directional
Gain.....4 - 9dBi
Bandwidth.....VSWR: <1.5: 1 = 695 - 3000 MHZ in all 3G & 4G Bands
.....VSWR: <2.0: 1 = 695 - 3000 MHZ
Impedance.....50 Ω
Max. Input Power.....50 watts
Installation.....Included L-bracket with U-bolts for up to 2" diameter pole; SLE-ANTEXT-ISO ground fault isolation plate; stainless steel coated cable clamps, stainless steel #10 screws and washers
Dimensions.....8⅞" (225 mm) Length x 2⅜" (60 mm) od
Exterior Finish.....White, UV stable
Weight.....10 oz.
RF Connector.....Type N Female
PIM.....-155dBc
Polarization.....Vertical
Wind Rating.....> 110 MPH
Warranty.....36 months
Environments.....Indoor / outdoor use

SLE-ANT
(Antenna only, white UV-stable finish)

Included Hardware


Stainless Steel Coated Cable Clamps


1" x #10 Stainless Steel Screws
Phillips Pan Head, Type A


#10 Stainless Steel Washers


(1) SMA Female to TNC Male Adapter
For use with competitive communicators


(4) Stainless Steel ½" x #8 Screws
Phillips Pan Head, Hi-Low


(4) Stainless Steel #8 Washers

Features

- Compact design
- UV stable polyurethane finish
- Vibration stabilized foam filled
- Excellent 700 MHZ LTE performance
- Universal applications

Ordering Information

- **SLE-ANT** - Antenna only, white UV-stable finish
- **SLE-ANTEXT30** – 30' Remote Antenna Kit, Includes **SLE-ANT** Antenna, stainless steel coated cable clamps, stainless steel #10 screws and washers, 30' LMR 300 Coax Type N male to SMA male terminated cable. Also includes one (1) SMA female to TNC male adapter for use with competitive communicators.
- **SLE-ANTEXT50** - Same as above*, but includes 50' LMR 300 Coax Type N male to SMA male terminated cable
- **SLE-ANTEXT75** - Same as above*, but includes 75' LMR 400 Coax Type N male to SMA male terminated cable
- **SLE-ANTEXT100** - Same as above*, but includes 100' LMR 400 Coax Type N male to SMA male terminated cable
- **SLE-ANTEXT04** - Same as above*, but includes 4' LMR 300 Coax Type N male to SMA male terminated cable. Ideal for installations that may require a few extras dBs of gain but running the external cable may not be practical.

*All kits include one (1) SMA female to TNC male adapter

Installing the StarLink Remote Antenna

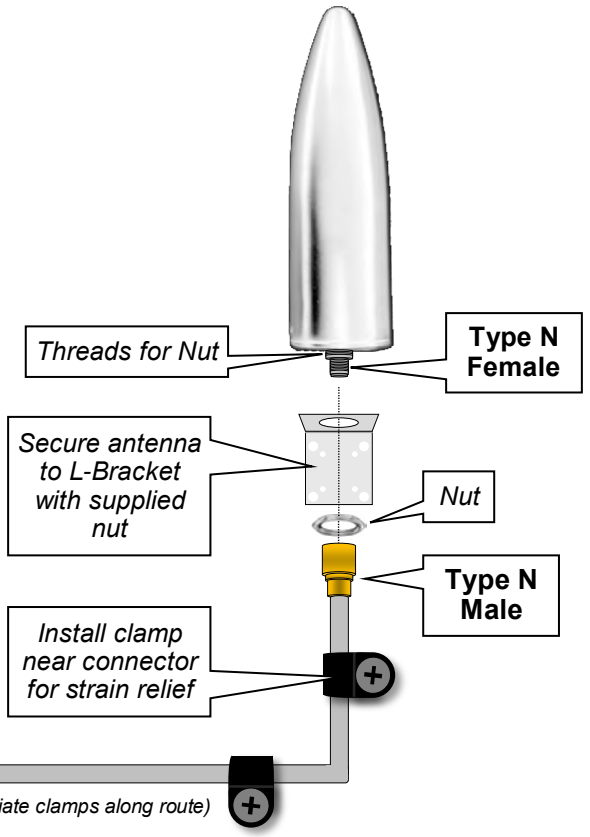
Attach the antenna L-bracket to an interior or exterior wall of the building. If necessary, the bracket may be mounted to a pole up to 2" in diameter. If installing on a commercial fire communicator, the included **SLE-ANTEXT-ISO** ground fault isolation plate should be used (see below).

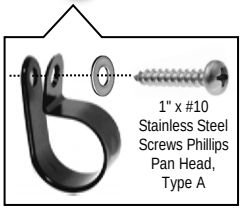
To achieve optimum performance, the antenna must be placed at the highest possible elevation.

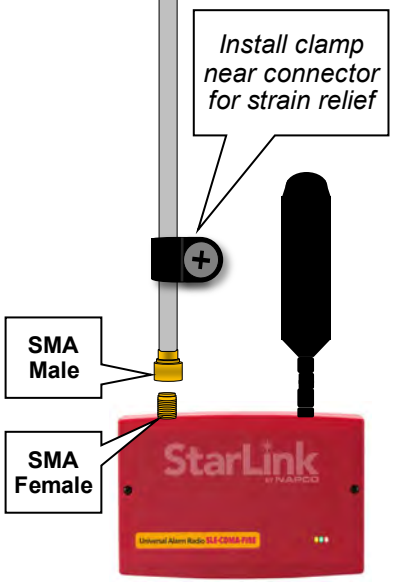
Run the coaxial cable between the communicator and the antenna, securing it with the provided stainless steel coated clamps and stainless steel screws and washers. *It is important that a cable clamp be placed near the antenna connector to provide strain relief for the antenna connector, as shown below*.

Connect the coaxial cable to the left antenna connector of the StarLink LTE communicator, as shown below. The right hand antenna can be left in place.

IMPORTANT: DO **NOT** ALTER OR ADD COAXIAL CABLE! DO **NOT** PLACE ANTENNA WITHIN FOUR (4) FEET OF OTHER LARGE METAL OBJECTS.







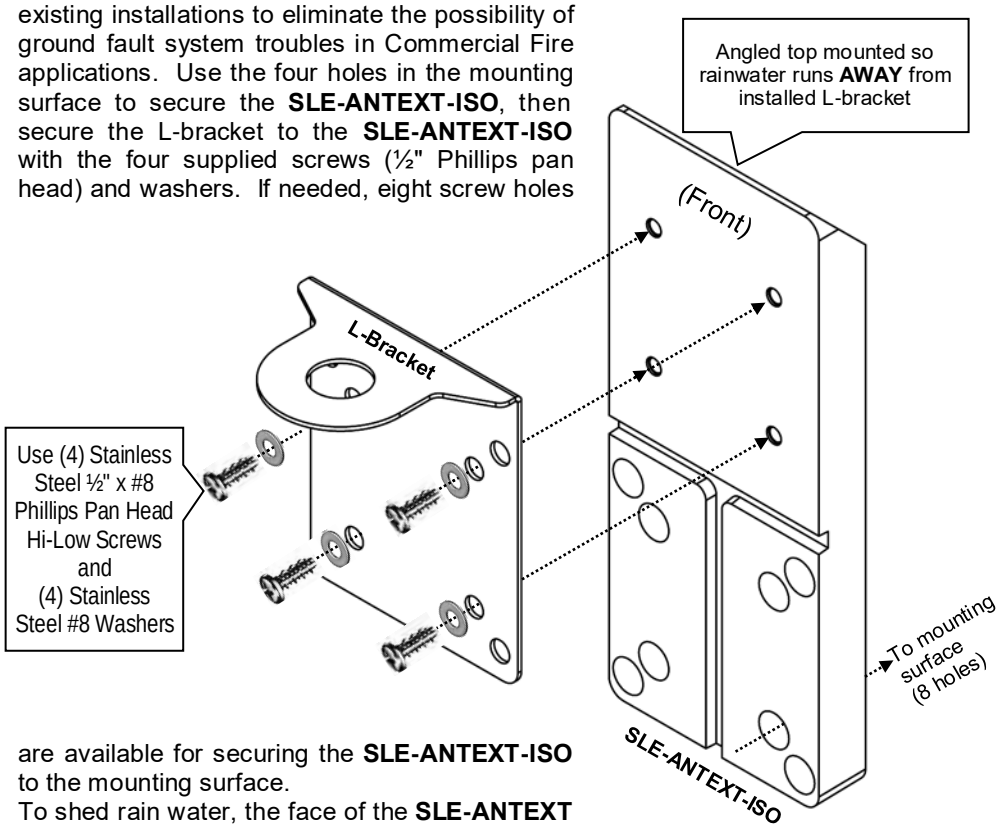
For use on LTE Communicators

Connect extended antenna to the left (SMA female) connector (the right LTE antenna supplied with the communicator can be left in place).

SLE-ANTEXT-ISO *Ground Fault Isolation Plate & L-Bracket*

The **SLE-ANTEXT-ISO** can be used for new or existing installations to eliminate the possibility of ground fault system troubles in Commercial Fire applications. Use the four holes in the mounting surface to secure the **SLE-ANTEXT-ISO**, then secure the L-bracket to the **SLE-ANTEXT-ISO** with the four supplied screws (½" Phillips pan head) and washers. If needed, eight screw holes are available for securing the **SLE-ANTEXT-ISO** to the mounting surface.

To shed rain water, the face of the **SLE-ANTEXT-ISO** includes grooves, and its angled top should always be mounted so that rainwater runs AWAY from the installed L-bracket, as shown.



FDNY
BUREAU OF FIRE PREVENTION
9 Metro Tech Center, 3rd Floor
Brooklyn ,NY,11201

To: Frank Lemma

From : New York City Fire Department

Date Jan 23, 2024

Record ID: 2023-TMCOAP-010503-CERT

Premises Address: Citywide

BIN

Application Type: Certificate of Approval

Result: Certificate of Approval

Expiates on January 23, 2027

By order of Fire Commissioner, and pursuant to Section FC 112 of the New York City New Fire Code, the following equipment or system is accepted for use provided the conditions as outlined below are in full compliance.

Manufacturer: Napco Security Technologies Inc.

Trade Name: Star Link

Product: SLE Commercial Fire Radios

Model Number(s): (Dual Path Radios) - SLE-MAXAI-FIRE, SLE-MAXAI-CFBPS, SLE-MAXAI-CFB: SLE-MAXVI-FIRE, SLE-MAXVI-CFBPS, SLE-MAXVI-CFB.
(Dual Path, Dual Sim Radios) - SLE-MAX2-FIRE, SLE-MAX2-CFBPS, SLE-MAX2-CFB.
(Fire Alarm Equipment Accessory) - SLE-FIRE-VR.

Pertinent Code Section(s): Section FC 901 of the New York City Fire Code

Prescribed Tests: UL 864 10th Edition, NFPA 72

Laboratories: Underwriters Laboratories, Inc. (UL)

Report(s): UL Certification Certificate Number S2576 Report Reference S2576 -20150410 Date 2023-March-24
ETL Certification Number 104519361NYM-001 dated Oct. 3, 2023.

Description:
The StarLink™ MAX2 Series Sole/Dual-Path Dual SIM

Commercial / Residential Fire alarm capture IP communicators are fully supervised, wireless digital two way subscriber units. The SLE-MAX2-CFB and SLEMAX2-CFBPS communicators are equipped with two network carrier SIM cards (for Verizon and AT&T) and are configured to automatically use the carrier with the strongest signal. Both models utilize CAT-M1 technology and support both Sole Path and Dual Path communication. Sole Path communication is cellular only and Dual Path communication is cellular and IP, which requires connection to the local network using the on-board Ethernet jack or via Wi-Fi using the optional UL 864 Certified SLE-WIFI-MODULE (Not for Burglary Use). The communication mode (Sole Path or Dual Path) requires selection of the appropriate service plan at the point of communicator activation. All models are compatible with most 12/24VDC alarm control panels (always adhere to the documentation provided by the control panel manufacturer). These communicators are for use as the primary means of communication with the central station and does not have backup mode capability. No POTS (Telco Line) connection permitted (this communicator model only emulates a telephone line to the control panel and is not equipped with hardware that can monitor a live POTS telephone line). These Communicators can also be utilized as Sole Path Cell Communicators. To accommodate the two network SIM cards, several feature settings are provided in the NAPCO NOC Radio Carrier screen (www.NapcoNOC.com). In addition, LEDs and a manual pushbutton, if so equipped, are provided on the radio PCB (see page 4 and 10-11 for complete details).

In addition to the models listed above, the following sub-assemblies are available:

SLE-ULPS-R - Power Supply. Required for installations where the control panel cannot provide the Auxiliary power required to operate the StarLink communicator. Uses a standard 4AH / 12V minimum (7AH maximum, required with optional Wi-Fi Module) rechargeable battery to provide communicator standby power. Requires connection to either the model NAPCO TRF12/T123 (16.5V / 20VA) external plug-in transformer or the chassis mounted 16.5VAC / 20VA transformer affixed inside the housing (see wiring diagrams further in this manual). Note: For models without the SLEULPS-R, connect the communicator terminals 1 and 2 to the control panel Aux Power terminals (observing polarity).

SLE-WIFI-MODULE - Allows your NAPCO StarLink™ device to connect to the Internet by means of a

wireless (Wi-Fi) link, eliminating a wired Ethernet.
cable connection. Note: 7AH battery required
when using the SLE-WIFI-MODULE. For more information,
see WI2191. Not UL Certified for Commercial
or Residential Burglary.
SLE-FIRE-VR - Control Panel Voltage Drop Kit (see
WI2580).
SLE-DLCBL - Download Cable, 6 feet
SLE-ANTEXT30 – Antenna kit* with 30 feet of LMR 300
cable.
SLE-ANTEXT50 - Antenna kit* with 50 feet of LMR 300
cable.
SLE-ANTEXT75 - Antenna kit* with 75 feet of LMR 400
cable.
SLE-ANTEXT100 - Antenna kit* with 100 feet of LMR
400 cable.
SLE-ANTEXT04 - Antenna kit * with 4 feet of LMR 300
cable. Ideal for installations that may require a few
extras dBs of gain but running the external cable may
not be practical.

Conditions of Approval:

1. All uses, configurations, arrangements and functions, applications and installations shall comply with the provisions of New York City Construction Codes, specifically Building Code Chapter 9 & 1RCNY §3616-04. Further, the installation shall be in accordance with applicable provisions of New York City Fire Code, New York City Electrical Code, manufacturer's installation requirements, and UL Standard 864.

2. When used with a central office control communicator or a transmitter, the installation and operation of the equipment and devices shall comply with 3RCNY §901-01. It shall have the capability of transmitting separate and distinct signals to indicate manual pull station alarm, automatic detection alarm, sprinkler waterflow alarm, supervisory signal indications, and trouble indications.

3. The installation of Fire Alarm Control Unit must provide for fail-safe operation. This feature must assure that control of doors, locks, ventilation fans, and elevator recall will not be rendered inoperable in the event of a fire or power failure.

4. When the communicator is in Primary mode (both Internet and Cellular communications) both primary and secondary channels of communication shall be required and shall meet the conditions of 4.1 – 4.7. Network communication shall be used as primary channel of communication with central station and cellular communication shall be used as the secondary channel of communication.
4.1. Each communication channel shall be monitored for integrity at intervals not exceeding 24 hours.
4.2. Failure any channel of communication shall be annunciated at the protected premises within 5 minutes of failure.
4.3. When any channel of communication has failed, a trouble signal shall be sent to central station within 5 minutes of failure by the remained active channel.
4.4. Reliability of the signal shall be achieved by any of the following:
4.4.1. Signal repetition — multiple transmissions repeating the same signal.
4.4.2. Parity check — a mathematically check sum algorithm of a digital message that verifies correlation between transmitted and received message.
4.4.3. An equivalent means that provides a certainty of 99.99 percent that the received message is identical to the transmitted message.
4.5. The maximum duration between the initiation of an alarm signal at the protected premises, transmission of the signal, and subsequent display and recording of the alarm signal at the central station shall not exceed 90 seconds.
4.6. A spare Central Station Receiver shall be provided at the central station and shall be able to be switched into the place of a failed

unit within 30 seconds after detection of failure.
4.7. All applicable requirements of Federal Communications Commission (FCC) shall be complied with.

5. When the installation of remote antenna is required the following shall be completed:
5.1. The antenna transmission line between the transmitter and the antenna shall be installed in rigid metal, intermediate metal conduit, or electrical metallic tubing in accordance with NFPA 70, National Electrical Code.
5.2. Interconnections between elements of transmitting equipment, including any antennas, shall be supervised either to cause an indication of failure at the protected premises or to transmit a trouble signal to the supervising station.

6. All wiring used for the building network communications shall be plenum rated cable with minimum temperature rating of 150 degree Celsius and shall be installed in a raceway per requirements of NYC 2011 Electrical Code, Article 760.

7. The connection of security/burglar devices and equipment to the fire alarm control unit is prohibited. A sign must be provided to indicate the same.

8. All installations are subject to inspection, test, and approval from Fire Alarm Inspection Unit (FAIU).

9. Any change in central station communication service provider shall be reported to FAIU and is subject to re-inspection, test, and approval.

10. Only enclosures painted red in color shall be used.

11. Underwriters Laboratories (UL) listing requirements and limitations shall be complied with.

12. Certificate of Approval number shall be plainly and permanently stamped or otherwise fixed upon each product by the applicant.

13. The Fire Department's conditions of approval shall be enumerated in the installation manuals and brochures that will be provided to all New York City buyers and users.

14. Fire Department Certificate of Approval does not constitute an endorsement or recommendation of your product by the Fire Department, but is a certification that your product is acceptable as of the date of issuance.

15. The Fire Department reserves the right to withdraw this approval at any time in the event there is a reasonable doubt that the product does not operate or perform as required by code, the conditions of this resolution or as represented in your application.

16. As the manufacturer of this product, you should be aware that any end user who fails to comply with the condition as outlined in the approval would be subject to enforcement action, which may include fines and imprisonment.

17. This Certificate of Approval does not grant the right to use any trademark associated with the New York City Fire Department (the letters FDNY, the FDNY Shield design, the FDNY Maltese Cross design, and the seal of the City of New York). The unauthorized use of trademarks in connection with the sale of commercial goods or services violates federal and state laws.

18. Products marked to indicate the Certificate of Approval number might refer to the "NYC Fire Department" or "NYC Fire Dept" (e.g., "NYC Fire Dept Certificate of Approval 2023-TMCOAP-010503-CERT).

Any change in company name or ownership, product name, design or model number of any product included on this certificate must be immediately reported to this Department in writing.

When responding to this Department regarding this subject matter, kindly refer to 2023-TMCOAP-010503-CERT and to Igor Chouchereba attention, 9 MetroTech Center #1S-65-K, phone (718) 999-1997.

Very truly yours,

Igor Chouchereba
Supervisor of Electrical Installation, II
Technology Management

By Order of,
Chief of Fire Prevention

CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION
OFFICE OF THE STATE FIRE MARSHAL
FIRE ENGINEERING & INVESTIGATIONS DIVISION
BUILDING MATERIALS LISTING PROGRAM

LISTING SERVICE

LISTING No.:	7300-0992:0503
CATEGORY:	7300 - FIRE ALARM CONTROL UNIT ACCESSORIES/MISC. DEVICES
LISTEE:	Napco 333 Bayview Avene, Amityville, NY, 11701 Contact: Lemma, Frank 16318429400 Email: flemma@napcosecurity.com
DESIGN:	Models SLE-MAXVI-CFBPS, SLE-MAXVI-CFB, SLE-MAXVI-FIRE, SLE-MAXAI-CFBPS, SLE-MAXAI-CFB, SLE-MAXAI-FIRE, *SLE-MAX2-CFBPS, *SLE-MAX2-CFB and *SLE-MAX2-FIRE Dual Path Communicators. The communication mode requires selection of the appropriate service plan at the point of communicator activation. Model numbers may be followed by an alpha/numeric suffix for marketing purposes. Products are intended for commercial/residential fire applications. All models can function as a backup to existing telephone lines, or as a primary communicator when telephone lines are absent and when connected directly to a Listed control panel's Telco or DACT or output terminals. Intended for indoor and dry locations only. Refer to listee's data sheet for additional detailed product description and operational considerations.
RATING:	Models SLE-MAXVI-CFBPS, SLE-MAXAI-CFBPS, and *SLE-MAX2-CFBPS: 120 VAC Models SLE-MAXVI-FIRE, SLE-MAXVI-CFB, SLE-MAXAI-FIRE, SLE-MAXAI-CFB, *SLE-MAX2-CFB and *SLE-MAX2-FIRE: 10-24 VDC
INSTALLATION:	In accordance with listee's printed installation instructions, applicable codes and ordinances, and in a manner acceptable to the authority having jurisdiction.
MARKING:	Listee's name, model number, electrical rating, and UL label.
APPROVAL:	Listed as dual path communicators for use with separately listed compatible fire alarm control units. Refer to listee's Installation Instruction Manual for details.

CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION
OFFICE OF THE STATE FIRE MARSHAL
FIRE ENGINEERING & INVESTIGATIONS DIVISION
BUILDING MATERIALS LISTING PROGRAM

LISTING SERVICE

NOTES:	Burglary and other non-fire functions were not examined.

04-17-24 MH

*Revised

This listing is based upon technical data submitted by the applicant. OSFM Fire Engineering staff has reviewed the test results and/or other data but does not make an independent verification of any claims. This listing is not an endorsement or recommendation of the item listed. This listing should not be used to verify correct operational requirements or installation criteria. Refer to listee's data sheet, installation instructions and/or other suitable information sources.

Date Issued: 04/18/2024

Listing Expires: 06/30/2024

Authorized By: **David Castillo**, Program Coordinator
Fire Engineering & Investigations Division

2024-03-27
Napco Security Technologies Inc
333 BAYVIEW AVE
AMITYVILLE, NY, 11701, US

Notice of Completion (NoC) and authorization to apply the Mark

Your reference:	PRFL093-00	
Our reference:	File S2576 Vol 18 Sec 1, Volume 18	Order: 15175301 Project: 4791197316
Project scope:	S2576 Vol 18 Sec 1: Dual Path/Dual Carrier/Dual Supervision with SIA Protocol Dial Capture; SLE-MAX2-FIRE, SLE-MAX2-CFB and SLE-MAX2-CFBPS	

We appreciate that you have a choice of certification providers and thank you for choosing UL Solutions**.**
We have completed the investigation under the above project and confirmed compliance of your product(s) with Mark requirements.

This letter temporarily supplements the UL Follow-Up Services Procedure and serves as authorization to apply the Mark at the factory location(s) identified on the Authorization Page of UL Solutions File S2576 Vol 18 Sec 1, Volume 18. You are required to send a copy of this letter to all manufacturing locations authorized under UL Solutions File S2576 Vol 18 Sec 1, Volume 18.

The Follow-Up Services Procedure covering your product(s) will typically be provided by UL Solutions within 10 business days. Any information and documentation provided to you involving the Mark services are provided on behalf of or any authorized licensee. The UL Solutions certification directory is updated with active certifications shortly after projects are reviewed and completed. Please visit https://productiq.ulprospector.com/ to search for the certification.

Products that bear the Mark must be identical to those submitted to UL for evaluation and certification and must comply with the Follow-Up Services Procedure covering your product(s). Additional requirements related to the responsibilities of the Applicant and Manufacturer can be found under **Customer Requirements documents** at www.ul.com/fus.

A UL Solutions certification is a valuable marketing tool meaning your product or company has successfully met stringent requirements. We encourage you to use your Mark and certification in your marketing activities. We are happy to provide guidance on how best to promote your UL certification. Our Certification Achievement Kit demonstrates marketing and promotional concepts to help you best represent your UL certification.

UL Solutions is committed to providing you with an exceptional customer experience. You may receive an email from ULSurvey@feedback.ul.com inviting you to provide feedback. Your survey rankings and comments regarding the experience are important to us. We are always seeking ways to improve in any areas we can, and your feedback and comments are vital to this process.

If you have any questions, please contact me or any of our customer service representatives at www.ul.com/contact-us.

Example/Exhibit-ULID-000842 (DCS:00-OP-E0860) Issue #: 3.0

Sincerely,

Allen Weber
Staff Engineering Associate
UL Solutions
Allen.G.Weber@ul.com

Certificate of Compliance

Certificate Number:

S2576

Report Reference:

S2576-20150410

Issue Date:

2024-02-23

Issued to:

Napco Security Technologies Inc
333 BAYVIEW AVE
AMITYVILLE NY, 11701 United States

This certificate confirms that representative samples of:

CONTROL UNIT ACCESSORIES, SYSTEM; PROPRIETARY ALARM UNITS

See Addendum Page for Product Designation(s).

Have been evaluated by UL in accordance with the Standard(s) indicated on this Certificate.

UL 985, Household Fire Warning System Units
UL 1023, Household Burglar-Alarm System Units
UL 2610, Commercial Premises Security Alarm Units and Systems
UL 864, Control Units and Accessories for Fire Alarm Systems

Additional Information:
See UL Product iQ® at https://iq.ulprospector.com for additional information.

This Certificate of Compliance indicates that representative samples of the product described in the certification report have met the requirements for UL certification. It does not provide authorization to apply the UL Mark. Only the Authorization Page that references the Follow-Up Services Procedure for ongoing surveillance provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Fire Alarm and Security Equipment:

Communicators, Models SLE3/4G-CB, SLE3/4G-CB-TF, SLE3/4G-CFB, SLE3/4G-CFB-PS, SLE-CDMA, SLE-CDMA-8D, SLE-CDMA-FIRE, SLE-GSM-3/4G, SLE-GSM-8D-3/4G, SLE-GSM-FIRE, SLECDMA-CB, SLECDMA-CB-TF, SLECDMA-CFB, SLECDMA-CFB-PS. Model numbers may be followed by an alpha/numeric suffix for marketing purposes.

Dual Path Communicators, Models -
SLECDMAI-CFB-PS, SLE3/4GI-CFB-PS, SLECDMAI-CB-TF, SLE3/4GI-CB-TF
SLECDMAI-CFB, SLE3/4GI-CFB, SLECDMAI-CB, SLE3/4GI-CB
SLE-GSMI-3/4G, SLE-CDMAI, SLE-GSMI-FIRE, SLE-CDMAI-FIRE
Model numbers may be followed by an alpha/numeric suffix for marketing purposes.

Fire Alarm and Security Equipment

Communicators, Models SLE-LTEV-FIRE, SLE-LTEV-8D, SLE-LTEV, SLE-LTEV-CFB-PS, SLE-LTEV-CB-TF, SLE-LTEV-CFB, and SLE-LTEV-CB . Model numbers may be followed by an alpha/numeric suffix for marketing purposes.

Communicators, Models SLE-LTEA-FIRE, SLE-LTEA-8D, SLE-LTEA, SLE-LTEA-CFB-PS, SLE-LTEA-CB-TF, SLE-LTEA-CFB, and SLE-LTEA-CB. Model numbers may be followed by an alpha/numeric suffix for marketing purposes.

Dual Path Communicators, Models SLE-LTEVI-CFBPS, SLE-LTEVI-CFB, SLE-LTEVI-FIRE, SLE-MAXVI-CFBPS, SLE-MAXVI-CFB, SLE-MAXVI-FIRE. Model numbers may be followed by an alpha/numeric suffix for marketing purposes.

Dual Path Communicators, Models SLE-LTEAI-CFBPS, SLE-LTEAI-CFB, SLE-LTEAI-FIRE, SLE-MAXAI-CFBPS, SLE-MAXAI-CFB, SLE-MAXAI-FIRE. Model numbers may be followed by an alpha/numeric suffix for marketing purposes.

Dual Path Communicators, Models SLE-FNI-CFB-PS, SLE-FNI-CFB, SLE-FNI-FIRE. Model numbers may be followed by an alpha/numeric suffix for marketing purposes.

Fire Alarm and Security Subassemblies:

Model SLE-ULPS-R power supply/charger.
Model SLE-WiFi-Module

Fire Alarm Subassemblies:

Models 9SLECDMAIPSLD, 9SLEGSMDPPSLD, 9LTE24PSLD, 9SLELTEVIPSLD, 9LTEA24PSLD, 9SLEDPLTEA2PSLD and 9SLELTECMQPSLD.

Model SLE-FIRE-VR – In-line Diode.

Fire Alarm and Security Equipment:

Dual Path Communicators, Models SLE-LTEV-CB-C, SLE-LTEV-CBTF-C, SLE-LTEV-C and SLE-LTEV-Z. Models SLE-MAXV-CBTF-C, SLE-MAXV-C, SLE-MAXV-Z,SLE-MAXA-CBTF-C, SLE-MAXA-C and SLE-MAXA-Z, SLE-MAXV, SLE-MAXV-CB-TF, SLE-MAXV-CB, SLE-MAXA, SLE-MAXA-CB-TF, SLE-MAXA-CB. Model numbers may be followed by an alpha/numeric suffix for marketing purposes.

SLE-ZWave Mod

EOL10K end of line resistor.

Fire Alarm and Security Equipment:

Sole / Dual Path Communicators, Models SLE-MAX2-CFBPS, SLE-MAX2-CFB, SLE-MAX2-FIRE. Model numbers may be followed by an alpha/numeric suffix for marketing purposes.

Fire Alarm Subassemblies:

Model 9SLEDPRDMX2PSLD

Certificate of Compliance

Certificate Number:

UL-US-L2576-55170-01405102-1

Report Reference:

S2576-20150410

Issue Date:

2024-02-23

Issued to:

Napco Security Technologies Inc
333 BAYVIEW AVE AMITYVILLE, NY 11701
United States

This certificate confirms that representative samples of:

UTOU - Control Units and Accessories, Household System Type

See Addendum Page for Product Designation(s).

Have been evaluated by UL in accordance with the Standard(s) indicated on this Certificate.

UL 985, Edition 6, Issue Date 2015-05-15, Revision Date 2022-10-07

Additional Information:
See UL Product iQ® at https://iq.ulprospector.com for additional information.

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Look for the UL Certification Mark on the product.

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Model	Product Description
EOL10K	Control unit accessories, end of line resistor
StarLink, SLE-CDMA	Communicator
StarLink, SLE-CDMA-8D	Communicator
StarLink, SLE-CDMA-FIRE	Communicator
StarLink, SLE-FNI-CFB, SLE-LTEVI-CFB	Communicator
StarLink, SLE-FNI-CFB-PS, SLE-LTEVI-CFBPS	Communicator
StarLink, SLE-FNI-FIRE, SLE-LTEVI-FIRE	Communicator
StarLink, SLE-GSM-3/4G	Communicator
StarLink, SLE-GSM-8D-3/4G	Communicator
StarLink, SLE-GSM-FIRE	Communicator
StarLink, SLE-LTEA	Communicator
StarLink, SLE-LTEA-8D	Communicator
StarLink, SLE-LTEA-CB	Communicator
StarLink, SLE-LTEA-CB-TF	Communicator
StarLink, SLE-LTEA-CFB	Communicator
StarLink, SLE-LTEA-CFB-PS	Communicator
StarLink, SLE-LTEA-FIRE	Communicator
StarLink, SLE-LTEAI-CFB	Communicator
StarLink, SLE-LTEAI-CFBPS	Communicator
StarLink, SLE-LTEAI-FIRE	Communicator
StarLink, SLE-LTEV	Communicator
StarLink, SLE-LTEV-8D	Communicator
StarLink, SLE-LTEV-CB	Communicator
StarLink, SLE-LTEV-CB-C, SLE-LTEV-CBTF-C, SLE-LTEV-C, SLE-LTEV-Z	Communicator
StarLink, SLE-LTEV-CB-TF	Communicator
StarLink, SLE-LTEV-CFB	Communicator
StarLink, SLE-LTEV-CFB-PS	Communicator
StarLink, SLE-LTEV-FIRE	Communicator
StarLink, SLE-MAX2-CFB	Communicator
StarLink, SLE-MAX2-CFBPS	Communicator
StarLink, SLE-MAX2-FIRE	Communicator
SLE-MAXA	Communicator
SLE-MAXA-C	Communicator
SLE-MAXA-CB	Communicator
SLE-MAXA-CB-CF	Communicator

SLE-MAXA-CBTF-C	Communicator
SLE-MAXA-Z	Communicator
SLE-MAXAI-CFB	Communicator
SLE-MAXAI-CFBPS	Communicator
SLE-MAXAI-FIRE	Communicator
SLE-MAXV	Communicator
SLE-MAXV-C	Communicator
SLE-MAXV-CB	Communicator
SLE-MAXV-CB-TF	Communicator
SLE-MAXV-CBTF-C	Communicator
SLE-MAXV-Z	Communicator
SLE-MAXVI-CFB	Communicator
SLE-MAXVI-CFBPS	Communicator
SLE-MAXVI-FIRE	Communicator
SLE-ULPS-R power supply module	Subassembly
SLE-WiFi Module	Communicator sub-assembly
SLE-ZWAVE-MOD	Communicator sub-assembly
StarLink, SLE3/4G-CB	Communicator
StarLink, SLE3/4G-CB-TF	Communicator
StarLink, SLE3/4G-CFB	Communicator
StarLink, SLE3/4G-CFB-PS	Communicator
StarLink, SLE3/4GI-CFB-PS, SLE3/4GI-CB-TF, SLE3/4GI-CFB, SLE3/4GI-CB, SLEGSMI-3/4G, SLE-GSMI-FIRE	Communicator
StarLink, SLECDMA-CB	Communicator
StarLink, SLECDMA-CB-TF	Communicator
StarLink, SLECDMA-CFB	Communicator
StarLink, SLECDMA-CFB-PS	Communicator
StarLink, SLECDMAI-CFB-PS, SLECDMAI-CB-TF, SLECDMAI-CFB, SLECDMAI-CB, SLE-CDMAI, SLE-CDMAI-FIRE	Communicator

Certificate of Compliance

Certificate Number:

UL-US-L2576-3267181-01405102-1

Report Reference:

S2576-20150410

Issue Date:

2024-02-23

Issued to:

Napco Security Technologies Inc
333 BAYVIEW AVE AMITYVILLE, NY 11701
United States

This certificate confirms that representative samples of:

NBSX - Household Burglar Alarm System Units

See Addendum Page for Product Designation(s).

Have been evaluated by UL in accordance with the Standard(s) indicated on this Certificate.

UL 1023, 7th Ed, Issue Date: 2017-9-1, Revision Date: 2021-5-20

Additional Information:
See UL Product iQ® at https://iq.ulprospector.com for additional information.

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Look for the UL Certification Mark on the product.

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Model	Product Description
SLE-CDMA	Communicators
SLE-CDMA-8D	Communicators
SLE-CDMA-FIRE	Communicators
SLE-CDMAI	Communicators
SLE-CDMAI-FIRE	Communicators
SLE-FNI-CFB	Communicators
SLE-FNI-CFB-PS	Communicators
SLE-FNI-FIRE	Communicators
SLE-GSM-3/4G	Communicators
SLE-GSM-8D-3/4G	Communicators
SLE-GSM-FIRE	Communicators
SLE-GSMI-3/4G	Communicators
SLE-GSMI-FIRE	Communicators
SLE-LTEA	Communicators
SLE-LTEA-8D	Communicators
SLE-LTEA-CB	Communicators
SLE-LTEA-CB-TF	Communicators
SLE-LTEA-CFB	Communicators
SLE-LTEA-CFB-PS	Communicators
SLE-LTEA-FIRE	Communicators
SLE-LTEAI-CFB	Communicators
SLE-LTEAI-CFBPS	Communicators
SLE-LTEAI-FIRE	Communicators
SLE-LTEV	Communicators
SLE-LTEV-8D	Communicators
SLE-LTEV-CB	Communicators
SLE-LTEV-CB-TF	Communicators
SLE-LTEV-CFB	Communicators
SLE-LTEV-CFB-PS	Communicators
SLE-LTEV-FIRE	Communicators
SLE-LTEVI-CFB	Communicators
SLE-LTEVI-CFBPS	Communicators
SLE-LTEVI-FIRE	Communicators
StarLink, SLE-MAX2-CFB	Communicator
StarLink, SLE-MAX2-CFBPS	Communicator
StarLink, SLE-MAX2-FIRE	Communicator

SLE-MAXA	Communicators
SLE-MAXA-CB	Communicators
SLE-MAXA-CB-TF	Communicators
SLE-MAXA-Z	Communicators
SLE-MAXAI-CFB	Communicators
SLE-MAXAI-CFBPS	Communicators
SLE-MAXAI-FIRE	Communicators
SLE-MAXV	Communicators
SLE-MAXV-CB	Communicators
SLE-MAXV-CB-TF	Communicators
SLE-MAXVI-CFB	Communicators
SLE-MAXVI-CFBPS	Communicators
SLE-MAXVI-FIRE	Communicators
SLE-ULPS-R power supply module	Communicator subassemblies
SLE-WiFi-Module	Communicator subassemblies
SLE3/4G-CB	Communicators
SLE3/4G-CB-TF	Communicators
SLE3/4G-CFB	Communicators
SLE3/4G-CFB-PS	Communicators
SLE3/4GI-CB	Communicators
SLE3/4GI-CB-TF	Communicators
SLE3/4GI-CFB	Communicators
SLE3/4GI-CFB-PS	Communicators
SLECDMA-CB	Communicators
SLECDMA-CB-TF	Communicators
SLECDMA-CFB	Communicators
SLECDMA-CFB-PS	Communicators
SLECDMAI-CB	Communicators
SLECDMAI-CB-TF	Communicators
SLECDMAI-CFB	Communicators
SLECDMAI-CFB-PS	Communicators

Certificate of Compliance

Certificate Number:

UL-US-2406951-0

Report Reference:

S2576-20150410

Issue Date:

2024-02-23

Issued to:

Napco Security Technologies Inc
333 BAYVIEW AVE AMITYVILLE, NY 11701
United States

This certificate confirms that representative samples of:

AMQE - Commercial Premises Security Alarm Units and Systems

See Addendum Page for Product Designation(s).

Have been evaluated by UL in accordance with the Standard(s) indicated on this Certificate.

UL 2610, Edition: 2, Issue Date: 2021-4-7, Revision Date: 2023-1-31

Additional Information:
See UL Product iQ® at https://iq.ulprospector.com for additional information.

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Look for the UL Certification Mark on the product.

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Model	Product Description
StarLink, SLE-MAX2-CFB	Communicator
StarLink, SLE-MAX2-CFBPS	Communicator
StarLink, SLE-MAX2-FIRE	Communicator


NAPCO
StarLink

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www.unitedfiresystems.com