

7100 SERIES FIRE ALARM CONTROL

INSTALLATION/OPERATING MANUAL



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IMPORTANT INFORMATION

This manual is designed for use by factory trained installers and operators of the Fire Control Instruments, Inc. (FCI) 7100 Series Fire Alarm Control. All illustrations, functional descriptions, operating and installation procedures, and other relevant information are contained in this manual.

The contents of this manual are important, and the manual must be kept with the fire alarm control panel at all times. If building ownership is changed, this manual, including any testing and maintenance information, must be passed along to the new owner(s).

The fire alarm control panel is part of a system. Manuals and instructions for other devices forming part of the system should be kept together. Purchasers who install this system for use by others must leave the instructions with the user. A copy of these instructions is included with each product and is available from the manufacturer.

This equipment is Listed by various listing agencies for use in fire alarm systems. Use only components which are compatible with the FCI system. The installation **MUST** be in accordance with the instructions in this manual.

THEREFORE:

- DO NOT deviate from the procedures described in this manual.
- DO NOT assume any details not shown in the instructions.
- DO NOT modify any electrical or mechanical features.
- DO comply with all codes and standards set forth by the authority having jurisdiction.


The term "Authority Having Jurisdiction" has become a standard term in the fire alarm industry. An acceptable definition of "Authority Having Jurisdiction" is:

Fire alarm systems installed in the USA fall under the jurisdiction of some authority. In some areas this may be a local fire department; in other areas it may be a building inspector, insurance firm, etc. Different authorities may have their own local requirements for the way the fire alarm system is installed and used. Most local authorities base their requirements on the NFPA codes, but there may be important differences. You must install this system in the way in which the authority having jurisdiction requires. If you do not know which authority has jurisdiction in your area, contact your local fire department or building inspector for guidance.

It is important that you tell users to be aware of any requirements defined by the authority having jurisdiction.

The installation **MUST** be in accordance with the following standards:

- National Fire Alarm Code (NFPA 72)
- National Electrical Code (NFPA 70)
- Life Safety Code (NFPA 101)

 **WARNING:** Touching components which are improperly installed, applied or operated could be hazardous and possibly fatal. Short circuits could cause arcing that could result in molten metal injuries. Therefore, only qualified technicians familiar with electrical hazards should perform checkout procedures. Safety glasses should be worn, and test equipment used for voltage measurements should be designed for this purpose and be in good working order.

ENVIRONMENTAL CONSIDERATIONS:

It is important that this equipment be operated within its specifications:

Recommended operating temperature range:	60 to 80° F (15 to 27° C)
Absolute maximum operating temperature range:	32 to 120° F (0 to 49° C)
Operating humidity:	not to exceed 85%, non-condensing at 90° F (32° C)

Operating this equipment within the recommended temperature range will extend the useful life of the system standby batteries.

INSTALLATION CONSIDERATIONS:

Check that you have all the equipment you need to make the installation. Follow the field wiring diagrams and installation notes in this manual.

Install the equipment in a clean, dry environment (minimal dust). Avoid installing equipment where vibrations will occur.

Remove all electronic assemblies prior to drilling, filing, reaming, or punching the enclosure. When possible, make all cable entries from the sides, being careful to separate the power limited conductors from the non-power limited conductors. Before making modifications, verify that they will not interfere with battery, transformer and printed circuit board location.

Do not over-tighten screw terminals. Over-tightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

Disconnect all sources of power before servicing, removing, or inserting any circuit boards. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized.

WIRING CONSIDERATIONS:

This fire alarm control panel contains power-limited circuits. You cannot connect external sources of power to these circuits without invalidating their approval.

Verify that wire sizes are adequate for all initiating device and notification appliance circuits. Most devices cannot tolerate more than a 10% drop from the specified device voltage.

The installer must make sure that the wiring and devices installed in the system meet the current National Electrical Code, NFPA 70, and all applicable state and local building code requirements.

Use the conductor size and type required by local codes. (see NFPA 70, Article 760). Wiring resistance must not be more than that shown on the field wiring diagrams.

To reduce errors and help in servicing the system, all conductors should be tagged or otherwise coded and logged at installation to identify circuit assignment and polarity. If the conductors are logged with a code, keep the log that explains the code with the manual, so that it is available to other people working on the panel.

Like all solid state electronic devices, this system may operate erratically or be damaged when subjected to lightning induced transients. Although no system is completely immune to lightning transients and interference, proper grounding will reduce susceptibility. We do not recommend the use of overhead or outside aerial wiring due to the increased susceptibility to nearby lightning strikes. Consult with the FCI Technical Support Department if any problems are anticipated or encountered.

To prevent the spread of fire, use proper patching materials to areas where system wiring passes through fire-rated walls or floors.

OTHER CONSIDERATIONS:

The equipment was tested according to EC directive 89/336/EEC for Class A equipment and was verified to the limits and methods of EN 55022.

NOTE: System Re-acceptance Test: To ensure proper system operation, this product must be tested in accordance with NFPA 1996, Chapter 7. Re-acceptance testing is required after any modification, repair or adjustment to system hardware or wiring.

All components, circuits, or system operations 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.

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 this control panel.



CAUTION

To keep your fire alarm system in excellent working order, ongoing maintenance is required per the manufacturer's recommendations and UL and NFPA Standards. At a minimum, the requirements of Chapter 7 of NFPA 72, The National Fire Alarm Code, shall be followed. A preventive maintenance agreement should be arranged through the manufacturer's local representative. Though smoke detectors are designed for long life, they may fail at any time. Any smoke detector, fire alarm system or any component of that system which fails shall be repaired or replaced immediately.

FCC 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 device pursuant to Subpart B of Part 15 of FCC Rules, which is designed to provide reasonable protection against such interference when 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 own expense.

If these instructions are not clear, or if additional information or clarification is needed, please consult your local authorized Fire Control Instruments, Inc. distributor.

Because of design changes and product improvements, the information in this manual is subject to change without notice. FCI reserves the right to change hardware and/or software design, which may subsequently affect the contents of this manual. FCI assumes no responsibility for any errors that may appear in this manual.

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Limitations of Fire Alarm Systems

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

- Particles of combustion or "smoke" from a developing fire may not reach the sensing chambers of the smoke detector because:
 - Barriers such as closed or partially closed doors, walls, or chimneys may inhibit flow.
 - Smoke particles may become "cold" and stratify, and may not reach the ceiling or upper walls where detectors are located.
 - Smoke particles may be blown away from detectors by air outlets
 - Smoke particles may be drawn into air returns before reaching the detector.

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

- The amount of "smoke" present may be insufficient to alarm smoke detectors. Smoke detectors are designed to alarm at various levels of smoke density. If such density levels are not created by a developing fire at the location of detectors, the detectors will not go into alarm.
- Smoke detectors, even when working properly, have sensing limitations. Detectors that have photoelectronic sensing chambers tend to detect smoldering fires earlier than flaming fires, which have little visible smoke. Detectors that have ionizing-type sensing chambers tend to detect fast flaming fires earlier than smoldering fires. Because fires develop in different ways and are often unpredictable in their growth, neither type of detector is necessarily best and a given type of detector may not provide adequate warning of a fire.
- Smoke detectors are subject to unwanted or nuisance alarms. For example, a smoke detector located in or near a kitchen may go into nuisance alarm during normal operation of kitchen appliances. In addition, dusty or steamy environments may cause a smoke detector to alarm unnecessarily. If the location of a smoke detector causes an abundance of unwanted or nuisance alarms, **do not disconnect the smoke detector; call a professional to analyze the situation and recommend a solution.**

- Smoke detectors cannot be expected to provide adequate warning of fires caused by arson, children playing with matches (especially within bedrooms), smoking in bed, violent explosions (caused by escaping gas, improper storage of flammable materials, etc.).
- Heat detectors do not sense particles of combustion and are designed to alarm only when heat on their sensors increase at a predetermined rate or reaches a predetermined level. **Heat detectors are designed to protect property, not life.**
- Warning devices (including horns, sirens, and bells) may not alert people or awaken sleepers who are located on the other side of closed or partially open doors. A warning device that activates on a different floor or level of a dwelling or structure is less likely to awaken or alert people. Even persons who are awake may not notice the warning if the alarm is muffled by noise from a stereo, radio, air conditioner or other appliance, or by passing traffic. Audible warning devices may not alert the hearing-impaired (strobes or other devices should be provided to warn these people). Any warning device may fail to alert people with a disability, deep sleepers, people who have recently used alcohol or drugs, or people on medication or sleeping pills.

Please note that:

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

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

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

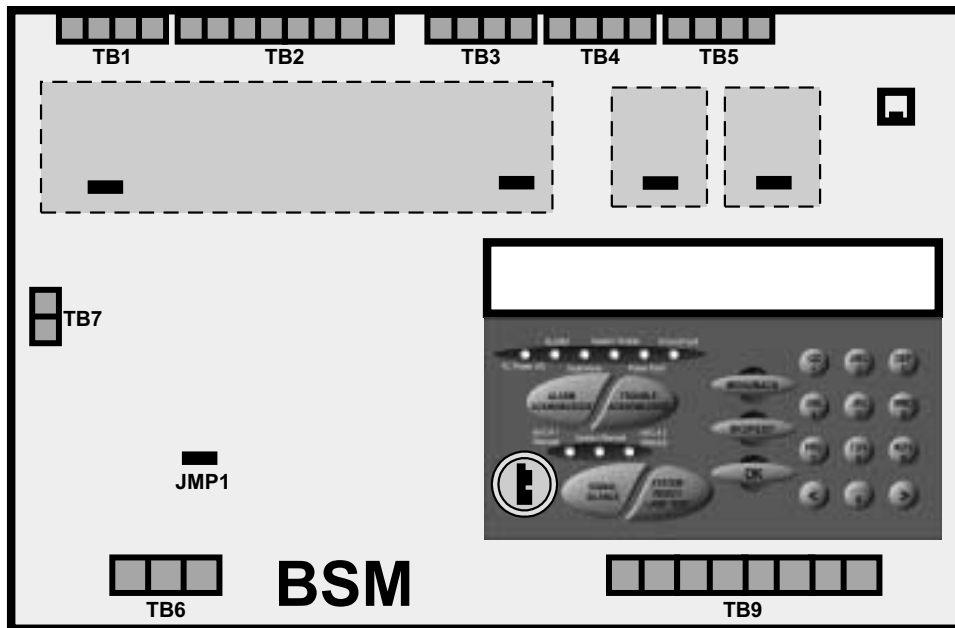
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1.0 System Overview

1.1 Description

The FCI 7100 is a multiprocessor-based analog/addressable fire alarm control panel, designed for commercial, industrial and institutional fire alarm applications. It is available with one or two signaling line circuits.

The 7100 Series Fire Alarm Control is Listed by Underwriters Laboratories Standard UL 864. It is suitable for the following signaling services:

- Automatic Fire Detector alarm
- Manual Fire Alarm
- Waterflow Alarm
- Supervisory
- Automatic smoke alarm, non-coded and master coded operation
- Releasing Device service

The 7100 Series complies with the requirements of the following National Fire Protection Association (NFPA) Standards:

- NFPA 13 - Installation of Sprinkler Systems
- NFPA 16 - Deluge Foam-Water Sprinkler Systems
- NFPA 16A - Installation of Closed Head Foam-water Sprinkler Systems
- NFPA 72 - National Fire Alarm Code:
 - Central Station Fire Alarm Systems
 - Local Fire Alarm Systems
 - Auxiliary Fire Alarm Systems
 - Remote Station Fire Alarm Systems
 - Proprietary Fire Alarm Systems

1.2 Features

1.2.1 Standard Features

- Two (2) Class B, Style 4 Signaling Line Circuits - Model 7100-2/D (One circuit in Model 7100-1/D)
- Two (2) Class B, Style Y Notification Appliance Circuits
- Alarm and Trouble dry contacts
- Accommodates 99 FCI Approved, UL Listed compatible analog sensors per SLC
- Accommodates 98 FCI Approved, UL Listed compatible addressable monitor/control devices per SLC
- 80-character alphanumeric LCD display
- 500 event history buffer (non-volatile)
- Power limited
- Resettable/Non-resettable 1.0 amp. @ 24 VDC power output
- Alarm verification
- Walk test
- Multi-level alarm processing
- Positive alarm Sequence (PAS) operation
- NAC coding
- Trouble reminder
- Integral RS-232 port
- Key Switch - keyed alike with the door lock and renders the key pad inoperative until activated.

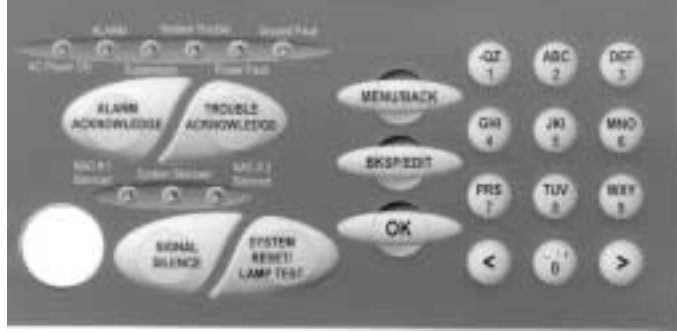
1.2.2 Optional Features

- Class A Module (CAOM) with Disconnect Switches for NACs and SLCs
- Digital Alarm Communicator (DACT) (Model 7100-D)
- RS-232 Printer Transient Module (PTRM), Supervised
- Municipal Circuit Option Module (MCOM)
- Releasing service with AOM-2/AOM-2S module

1.3 Control and Indicators

1.3.1 Switch Controls

- Alarm Acknowledge
- Trouble Acknowledge
- Signal Silence
- System Reset/Lamp test
- Programming buttons
 - Menu/Back
 - Back Space/Edit
 - OK
- 12 button keypad



1.3.2 LED Indicators

- | | | | |
|------------------|----------|-------------------|----------|
| • AC Power On | (green) | • Ground Fault | (yellow) |
| • Alarm | (red) | • NAC 1 Silenced | (yellow) |
| • Supervisory | (yellow) | • NAC 2 Silenced | (yellow) |
| • System Trouble | (yellow) | • System Silenced | (yellow) |
| • Power Fault | (yellow) | | |

1.3.3 Audible Sounder

An Alarm/Trouble sounder is located on the Basic System Module (BSM)

1.4 Optional Modules

The following optional modules and features are available:

1.4.1 Digital Communicator (DACT)

The Model 7100-D provides an integral digital communicator (DACT), fully programmable from the keypad, which is compatible with Digital Alarm Receivers (DACRs) that can receive the following formats:

- SIA DC8
- SIA DCS20
- Ademco Contact ID
- 3+1 1400 Hz
- 3+1 2300 Hz
- 4+2 1400 Hz
- 4+2 2300 Hz

1.4.2 Class A Option Module (CAOM)

All 7100 Models are supplied with Class B Notification Appliance Circuits and Class B Signaling Line Circuits. For Class A operation, the addition of a CAOM Module is required. This module operates with all 7100 Models and enables the signaling line circuits to operate as Class A, Style 6 or 7 and notification appliance circuits to operate as Class A, Style Z. It supplies the additional terminals for these circuits.

1.4.3 Municipal Circuit Option Module (MCOM)

The MCOM Module can trip a Local Energy City Master Box, operate in reverse polarity mode for leased line connection, or energize a solenoid for releasing service.

1.4.4 Printer Transient Module (PTRM)

The serial output on the BSM is via an existing RS-232 RJ-11 connector, J3. This can be used to communicate to the control with a laptop computer while at the panel. The PTRM module is intended for systems where a permanent connection is required. This type of connection requires that the RS-232 port have sufficient transient protection to comply with the applicable codes for wiring leaving the confines of the control box, as well as the proper isolation of the signal to prevent damage or interference caused by connection to certain EDP devices. Connections are limited to the same room. The PTRM supplies supervision and transient protection as well as the necessary isolation.

1.5 Specifications

Power Supply

Supervisory current 1.0 amp. (max.) (24 VDC nominal)
Alarm current 3.335 amp. (max.) (24 VDC nominal)

Notification Appliance Circuits (TB1)

Two (2) regulated power outputs
Power limited
Supervised
Non-coded
Max. alarm load 1.5 amp. /circuit
For use with any Listed appliance with operating voltage range 17-26 VDC
Use U.L. Listed End of Line Resistor EOL-N (47K), P/N 4700-0512

Trouble Dry Contacts (TB2)

Form "C"
Rated 2 amp. @ 30 VDC

Alarm Dry Contacts (TB2)

Form "C"
Rated 2 amp. @ 30 VDC

Transfer Relay Control (TB2)

To transmit loss of AC power or brown out to FCI Model DRBC-1 charger.
Power limited
Unsupervised

Signaling Line Circuits (TB3)

One (1) or two (2) Class "B", Style 4 circuits
24 VDC nominal
Power Limited
Supervised
40 ohm max. line resistance
0.5 uf max. capacitance
Capacity of 99 analog sensors and 98 addressable devices per circuit

Earth Ground Connection (TB4)



NOTICE: Terminal TB4 must be connected to an earth ground connection per Article 760 of the National Electric Code. Failure to make a proper earth ground connection to a metallic cold water pipe or driven ground rod to this terminal will result in loss of lightning protection, reduce the tolerance of the system to transients, and will adversely affect the operation of the system. Panel neutral or conduit ground is not acceptable; minimum wire size is 14 AWG.

AC Input (TB6)

120/240 VAC, 50/60 Hz, 2 amp. @ 120 VAC, 1 amp. @ 240 VAC
Non-power limited

24 VDC power, system (TB4)

- Unregulated
- Resettable and non-resettable
- 1.0 amp. max. each circuit, 1.0 amp. max. combined
- Unsupervised

Battery Connection (TB7)

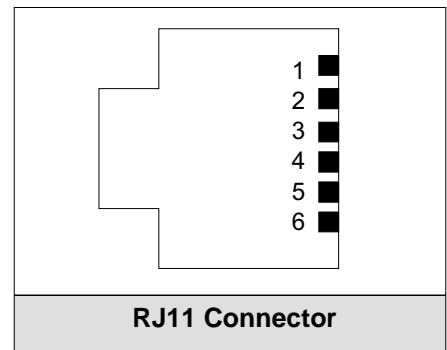
- Supervised
- 24 VDC nominal
- Max. battery size 31 AH
- Non-power limited
- 0.6 A max. battery charge current

The RS-232 port, consists of an RJ11 connector which provides a standard serial port for connection to a Listed output device for supplementary type service. Typical examples of such devices include any UL Listed EDP device (remote printer or video terminal), any UL Listed Signaling Device (such as the Keltron VS4095/5 printer), or any UL Listed Signal System Unit (such as the Model BBM Buffered Data Broadcast unit TL160A-R2).

- Ratings:
- 15 VDC (max.)
 - .05 amp. (max.) current
 - 9600 baud
 - 8 bits, 1 stop bit, no parity.

Connections to the RJ11 serial connector are as follows:

Terminal	Description
2	RXD
3, 4	GND
5	TXD
6	Supervision

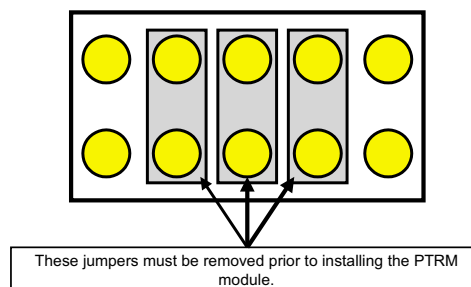


Available cables for RS-232 connection are:

Part No.	Model	Description
6100-0077	RJ11-DB9PC	RJ11 to 9-pin DB9 (Connector only - PC Laptop)
6100-0074	RJ11-DB25	RJ11 to 25-pin (DB25) (connector only-printer)
6100-0075	RJ11C-6	RJ11 to RJ11 cable, 6-inches
6100-0076	RJ11C-20	RJ11 to RJ11 cable, 20 feet

NOTE: The BSM is shipped with jumpers installed on the middle three pairs of pins on J2. These jumpers must be removed when the PTRM is installed.

BSM J2



2.0 Installation

2.1 General

The 7100 is shipped unassembled. The shipping carton contains an installation drawing, backbox, Basic System Module (BSM), power transformer and door.

1) Refer to the System Assembly Drawing, P/N 9000-0457.

2) The BSM module consists of a main operating board with pluggable terminal strips, an 80-character LCD display and programming keypad. Install this module immediately unless any option modules are to be used in the system. The optional modules are supplied separately, and should be installed on the BSM before it is mounted in the backbox. Before installing the BSM into the system backbox, refer to the installation instruction sheets shipped with each module for the proper installation procedures.

3) Install the transformer into the backbox.

4) Install the door after the BSM is in place. Note that the door can only be installed (or removed) when it is opened at least 90° from the backbox.

3.0 Basic System Module (BSM)

Table 1 Field Wiring Connections

Designation	Description	Comments
TB1-1		NAC Circuit 1 (+) Class B, Style Y
TB1-2		NAC Circuit 1 (-) Class B, Style Y
TB1-3		NAC Circuit 2 (+) Class B, Style Y
TB1-4		NAC Circuit 2 (-) Class B, Style Y
TB2-1	TRBL	Trouble contacts, N/O, 2 amp @ 30 VDC (resistive)
TB2-2	TRBL	Trouble contacts, Common
TB2-3	TRBL	Trouble contacts N/C
TB2-4	ALM	Alarm contacts, N/O, 2 amp. @ 30 VDC (resistive)
TB2-5	ALM	Alarm contacts, Common
TB2-6	ALM	Alarm contacts, N/C
TB2-7		Transfer control
TB2-8		Not used
TB3-1		Signaling Line Circuit 1 (+) Class B, Style 4
TB3-2		Signaling Line Circuit 1 (-) Class B, Style 4
TB3-3		Signaling Line Circuit 2 (+) Class B, Style 4 (7100-2, -2D only)
TB3-4		Signaling Line Circuit 2 (-) Class B, Style 4 (7100-2, -2D only)
TB4-1		Resettable Power, 24 VDC 1.0 amp.
TB4-2		Non-resettable Power, 24 VDC 1.0 amp.
TB4-3		System Common
TB4-4		Earth Ground
TB5-1	COM B	To LCD-7100 TB1-2
TB5-2	COM A	To LCD-7100 TB1-1
TB5-3, -4		Not used
TB6-1	AC "Hot"	120 VAC "Hot", 50/60 Hz 2 amp., 240 VAC "Hot", 50/60 Hz 1 amp.
TB6-2	Ground	Ground
TB6-3	AC Neutral	120 VAC Neutral, 240 VAC "Hot"
TB7-1	Batt+	Battery terminal (+)
TB7-2	Batt -	Battery terminal (-)
TB9-1	DACT	Line 1 Tip In (non-power limited) From street
TB9-2	DACT	Line 1 Ring In (non-power limited) From street
TB9-3	DACT	Line 1 Tip Out (non-power limited) To phone
TB9-4	DACT	Line 1 Ring Out (non-power limited) To phone
TB9-5	DACT	Line 2 Tip In (non-power limited) From street
TB9-6	DACT	Line 2 Ring In (non-power limited) From street
TB9-7	DACT	Line 2 Tip Out (non-power limited) To phone
TB9-8	DACT	Line 2 Ring Out (non-power limited) To phone

Table 1a - LEDs, Jumpers

Designation	Description	Comments
LEDs		
LED25	Yellow	Line 1 Trouble
LED26	Yellow	Line 2 Trouble
Jumpers		
W1		Not used
W2		OUT to disable battery
W3		IN - No Local Phone Line 1
W4		IN - No Local Phone Line 2
J6		Connection to keypad
JMP1		Cut for 240 VAC input operation

3.1 Power

3.1.1 AC Input

Connection of the 120/240 VAC, 50/60 Hz power source must be made per the requirements of the National Electrical Code, NFPA 70, Article 760, the applicable NFPA requirements, and/or the Authority Having Jurisdiction.

Guidelines to follow are:

- Connections must be to a dedicated branch circuit
- Connections must be mechanically protected
- All means of disconnecting the circuit must be clearly marked: "FIRE ALARM CIRCUIT CONTROL".
- Accessible only to authorized personnel.
- For 240 VAC operation, no conductor shall have a potential greater than 150 V to ground.

See Table 1 for AC input and battery connections.

IMPORTANT: Always apply AC power first, then connect the batteries.

3.1.2 Battery Connections

TB7-1 is positive. See Table 1.

TB7-2 is negative. See Table 1.

Observe polarity

See Table 2 for Battery Calculations

3.1.3 Auxiliary Power Output, Resettable/non-resettable

TB4-1 Resettable, 24 VDC, max. 1.0 amp. Suitable for use with projected beam smoke detectors SPB-24, 770 Series, or DH Series duct detectors.

TB4-2 Non-resettable, 24 VDC, max. 1.0 amp. Suitable for use with the FM Series door holders.

NOTE: Total output is 1.0 amp max. combined.

TB4-3 Common negative

TB4-4 Not used

3.1.4 Earth Ground Connection

TB4-4 Earth Ground

3.2 Relay Connections

System Trouble Contacts

TB2-1 Normally Open

TB2-2 Common

TB2-3 Normally Closed

Transfers on any trouble condition and/or supervisory alarm.

System Alarm Contacts

TB2-4 Normally Open

TB2-5 Common

TB2-6 Normally Closed

Transfers upon any system alarm except supervisory.

Table 2 Battery Standby Chart

Qty	Module	Description	Supv. Current	Alarm Current	Total Supv. Current	Total Alarm Current
	BSM-1	Basic System Module, 1 SLC	0.056 A	0.076 A		
	BSM-2	Basic System Module, 2 SLC	0.065 A	0.085 A		
	BSM-1D	Basic System Module, 1 SLC w/DACT	0.075 A	0.095 A		
	BSM-2D	Basic System Module, 2 SLC w/DACT	0.085 A	0.105 A		
	PTRM	Printer Transient Module	0.020 A	0.020 A		
	CAOM	Class A Option Module	0.001 A	0.001 A		
	MCOM	Municipal Circuit Option Module	0.001 A	0.001 A		
	LCD-7100	Optional Remote Serial Annunc.	0.050 A	0.075 A		
	LDM-7100	LED Driver Module	0.035 A	0.200 A*		
	INI-7100	Intelligent Network Interface Mod.	0.040 A	0.040 A		
		Addressable modules				
		Smoke and heat sensors				
		Notification Appliances				
		Aux. Power Devices				
		Misc. devices				

TOTALS

- A Total Supv. Current
- B Enter number of standby hours required**
- C Multiply Line A times hours in Line B—enter
- D Total alarm current from above
- E Enter alarm sounding period in hours. (5 minutes = .084 hr.)
- F Multiply Line D times Line E —enter
- G Total of Lines C & F—enter
- H Multiply Line G by 1.2 — enter (Total ampere/hours required***)

NOTE:

* With all LEDs and optional buzzer energized.

** 24 hrs for NFPA 72 protected premises or Central Station signaling, 60 hrs for Auxiliary or Remote Supervising Station Fire alarm Systems. 90 hrs Factory Mutual standby requirement for deluge/preaction systems with 15 minute alarm period.

***Use next size battery with capacity greater than required. (Use only FCI Model B-1.9R, B-6R, B-7R, B-17R, or B-31R batteries)

See Page 43 for additional DRBC-1 connections when battery standby requirement exceeds 31 AH. For Releasing Device Service, 31 AH batteries are required.

3.3 Notification Appliance Circuits

The 7100 provides two (2) 24 VDC Class B, Style Y notification appliance circuits. Class A, Style Z operation is accomplished by adding the Class A Option (CAOM) Module.

For use with any UL Listed notification appliance having a nominal operating voltage of 24 VDC.

Wiring Instructions

NAC 1 - TB1-1 (+), TB1-2 (-)

NAC 2 - TB1-3 (+), TB1-4 (-)

(Polarity markings indicate the polarity of the circuit in alarm condition).

Use U.L. Listed End of Line Resistor EOL-N (47K), P/N 4700-0512

Circuit Ratings

24 VDC regulated

Max. alarm load 1.5 amp./circuit

Supervised

Power limited

NOTE: The CAOM module is furnished with End of Line resistor installed.

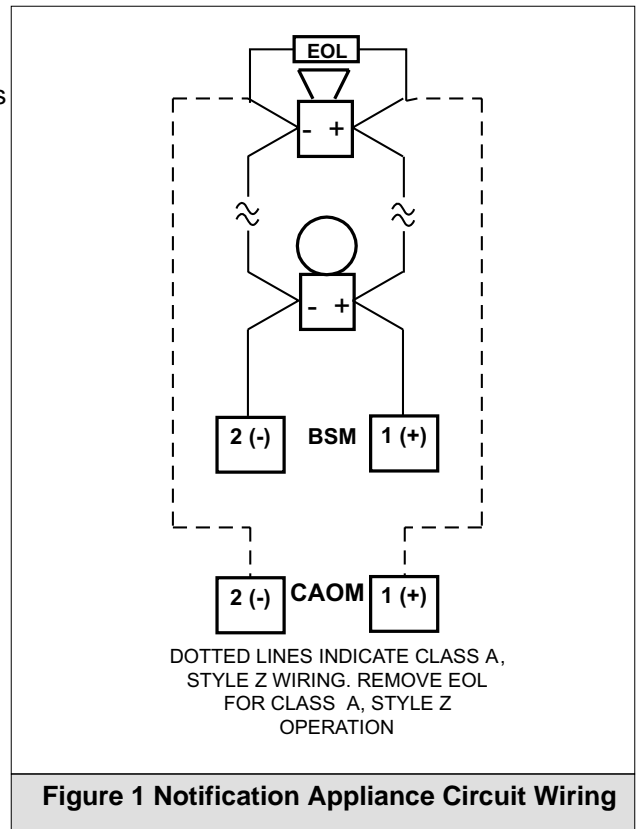


Figure 1 Notification Appliance Circuit Wiring

3.4 Signaling Line Circuits

The 7100 provides one (1) or two (2) 24 VDC Class B, Style 4 signaling line circuits. Class A, Style 6 or 7 operation is accomplished by adding the Class A Option (CAOM) Module. See Figure 2 for Style 4 or 6 wiring, and Figure 3 for Style 7 wiring.

Wiring Instructions

SLC 1 - TB3-1 (+), TB3-2 (-)

SLC 2 - TB3-3 (+), TB3-4 (-) (7100-2 only)

(Polarity markings indicate the polarity that should be maintained throughout the circuit. Polarity must be observed on all devices connected to the circuit).

Circuit Ratings

24 VDC (nominal)

Current: 0.090 amp max. (supervisory)

0.097 amp max. (alarm)

0.750 amp max. (short circuit)

40 ohms max. line resistance

0.5 uf max. line capacitance

18 AWG minimum, straight lay or twisted pair

Power Limited

Supervised

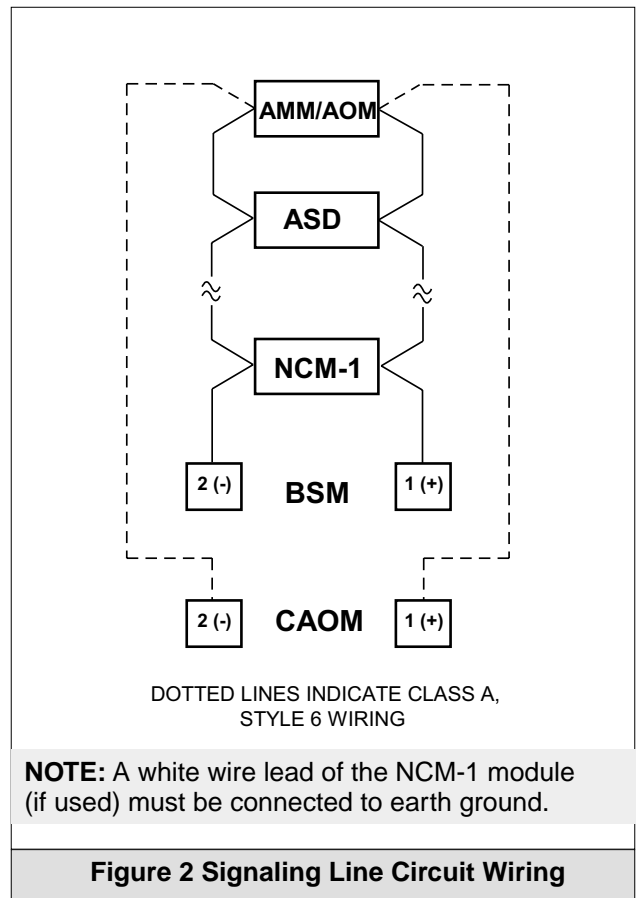
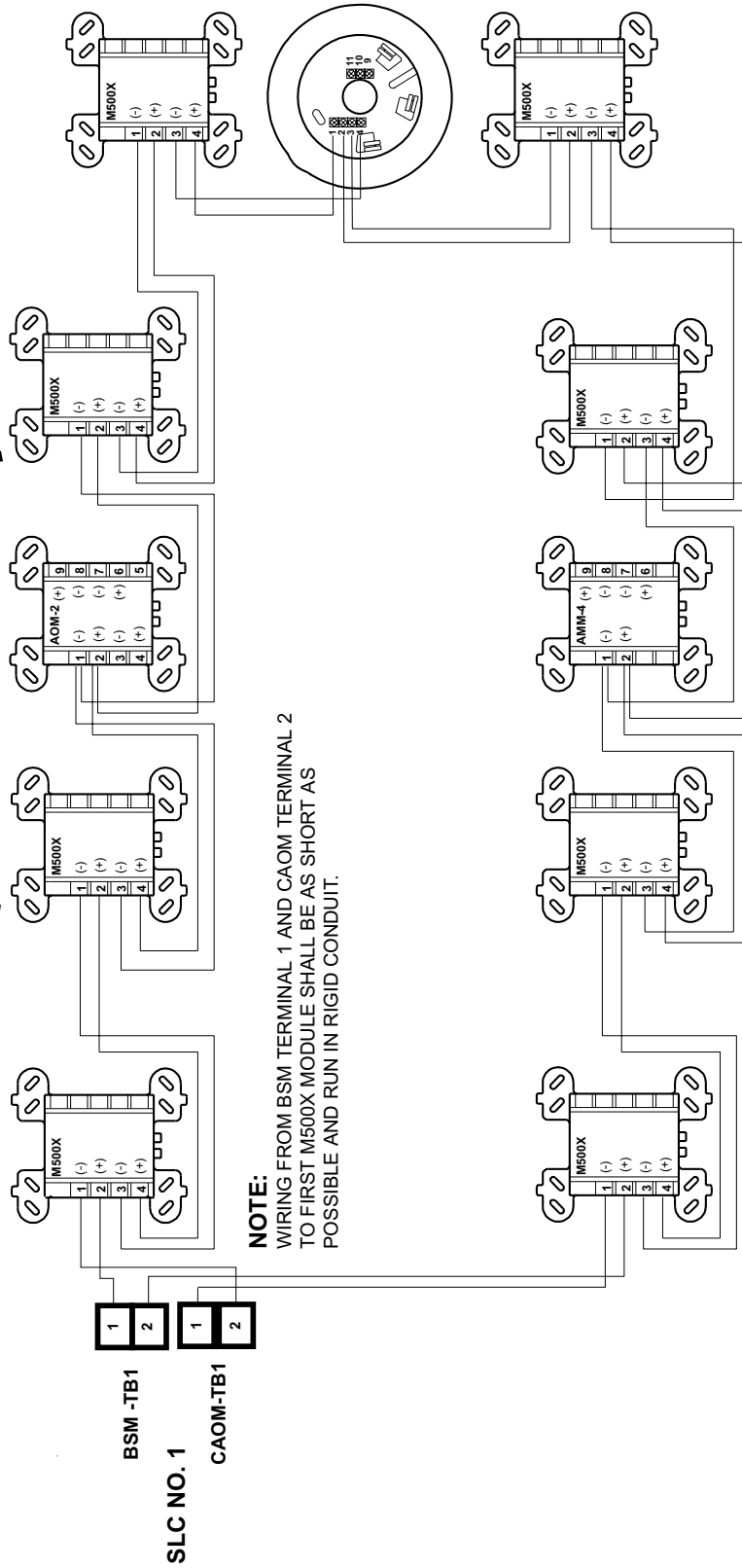


Figure 2 Signaling Line Circuit Wiring

USE TWO (2) CLOSE-NIPPLED ISOLATOR
MODULES PER CONFIGURABLE FIELD DEVICE



NOTE:
WIRING FROM BSM TERMINAL 1 AND CAOM TERMINAL 2
TO FIRST M500X MODULE SHALL BE AS SHORT AS
POSSIBLE AND RUN IN RIGID CONDUIT.

NOTE:
WIRING FROM BSM TERMINAL 2 AND CAOM TERMINAL 1
TO LAST M500X MODULE SHALL BE AS SHORT AS
POSSIBLE AND RUN IN RIGID CONDUIT.

Figure 3

NOTICE:

USE ONLY THE LISTED AND APPROVED METHODS AND DEVICES REFERENCED IN THIS MANUAL TO ACTUATE A FIRE EXTINGUISHING SYSTEM. REFER TO THE INSTALLATION MANUAL FOR THE PROPER USE OF THE SYSTEM IN A PARTICULAR APPLICATION. EXTINGUISHING AGENTS THAT SUPPRESS FIRES BY OXYGEN DILUTION SUCH AS CARBON DIOXIDE AND VARIOUS INERT GASES SHALL BE PROVIDED WITH LISTED, APPROVED, MECHANICALLY OPERATED TIME DELAYS AND STOP VALVES TO CONTROL THE DISCHARGE TO A PROTECTED AREA.

WIRING FROM THE POWER SUPPLY TO THE AOM MODULE NOT TO EXCEED 2 OHMS. POWER FOR ACTUATING RELEASE SOLENOIDS MUST BE OBTAINED FROM THE NON-RESETTABLE POWER TERMINALS OF THE SPSU-V, BSM-2, THE FCI FC-72 PS-6 OR APS-6, OR ANY 24 VDC REGULATED POWER SUPPLY LISTED FOR FIRE SIGNALING SYSTEMS PER UL864 AND/OR 1481 AND FACTORY MUTUAL SYSTEM APPROVED.

CONNECTIONS TO THE SOLENOID WIRE LEADS AND SUPERVISORY RESISTOR/DIODE COMBINATION MUST BE VIA LISTED TERMINAL BLOCKS IN A STANDARD LISTED ELECTRICAL BOX CLOSE-NIPPLED TO THE SOLENOID.

MAX. 20 FT. 18AWG (MIN.)
IN RIGID CONDUIT
SUPERVISED
NON POWER-LIMITED

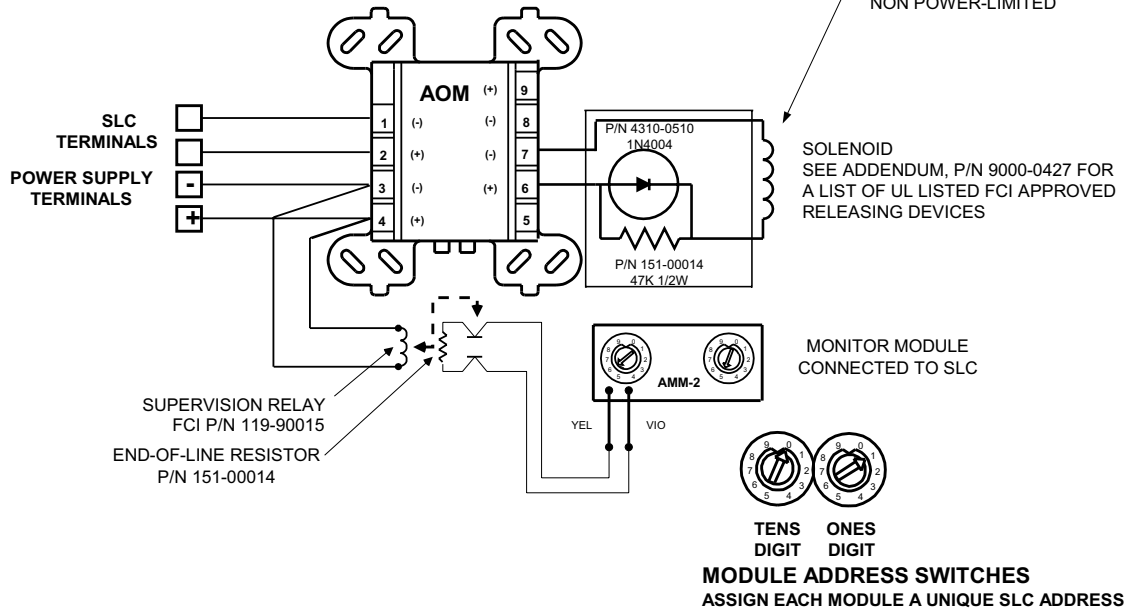


Figure 3a Typical Releasing Circuit Wiring

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3.5 Analog Sensors

The 7100 accommodates only FCI approved, U.L. Listed, Factory Mutual Approved analog sensors and bases. See FCI Publication, P/N 9000-0427 for a list of approved sensors and bases. Each signaling line circuit can accommodate 99 sensor address points, using Address numbers 01 to 99.

3.5.1 Address Switches

Addresses are set via the rotary switches on each sensor or module. Setting the address is accomplished by turning each of the two (2) rotary switches until they point to the numbers indicating the proper address (e.g., SW1 @ #2 and SW2 @ #5 would indicate address #25).

3.5.2 Drift Compensation

The 7100 contains a program which performs continuous testing of analog sensors, including sensitivity tests. This program will compensate all analog sensors for age and environmental conditions. Should a problem occur in a sensor, a "Failed Test", "Dirty" or "Very Dirty" indication for the specific device will appear on the system display and be recorded in the Event Log and the Serial Port.

3.6 Addressable Modules

The 7100 accommodates only FCI approved, U.L. Listed, Factory Mutual Approved addressable monitor and/or control modules. See FCI Publication, P/N 9000-0427 for a list of approved modules. Each SLC can accommodate 98 addressable module points, using Addresses 101 through 198.

In the event of common mode noise problems, a Noise Control Module (NCM-1) may be installed. See Figure 2. The white wire lead must be connected to earth ground.

3.6.1 Address Switches

These addresses are set via the rotary switches on each module. Setting the address is accomplished by turning each of the two (2) rotary switches until they point to the numbers indicating the proper address (e.g., SW1 @ #5 and SW2 @ #7 would indicate address # 157). Note that the "100" digit is pre-set in all addressable modules.

IMPORTANT: In systems incorporating the Positive Alarm Sequence (PAS) in conjunction with addressable modules, (AMM-2, -4, -4S), only one (1) initiating device may be connected to each module (address).
EXAMPLE: Connect only one manual station per AMM-2 module.

3.7, 3.8 Deleted.

3.9 Optional Modules

3.9.1 Class A Option Module (CAOM)

The CAOM provides Class A signaling for the notification appliance circuits and Class A, Style 6 signaling for the signaling line circuits. It also provides a disconnect switch for each signaling line circuit and a common disconnect switch for both notification appliance circuits. See Table 3 for wiring connections.

3.9.2 Municipal Circuit Option Module (MCOM)

The MCOM provides output for a Local Energy City Master Box, reverse polarity output for leased line connection, or releasing solenoid output. See Table 3 for wiring connections and FCI Publication, P/N 9000-0427 for a list of approved solenoids.

Ratings:	Master box (NPL)	Polarity Reversal (PL)	Releasing Service (NPL)
Nominal voltage	24 VDC	24 VDC	24 VDC
Supervisory current	.0018 amp.	.012 amp.	.0005 amp.
Alarm current	.510 amp. (max.)	.012 amp.	.700 amp.
Line resistance	35 ohms (max.)		2 ohms (max.)
Trip coil resistance	14.5 ohms (max.)		

3.9.3 Printer Transient Module (PTRM)

The PTRM provides sufficient transient protection to the RS-232 output to comply with the applicable codes for wiring leaving the confines of the control box, as well as the proper isolation of the signal to prevent damage or interference caused by connection to certain EDP devices.

Table 3 Optional Module Wiring Connections

CAOM Module		
Designation	Description	Comments
TB1-1	NAC1	NAC Circuit 1, Class A return (+)
TB1-2	NAC1	NAC Circuit 1, Class A return (-)
TB1-3	NAC2	NAC Circuit 2, Class A return (+)
TB1-4	NAC2	NAC Circuit 2, Class A return (-)
TB2-1	SLC1	SLC Circuit 1, Class A return (+)
TB2-2	SLC1	SLC Circuit 1, Class A return (-)
TB2-3	SLC2	SLC Circuit 2, Class A return (+) (7100-2, -2D only)
TB2-4	SLC2	SLC Circuit 2, Class A return (-) (7100-2, -2D only)
MCOM Module		
TB1-1		Municipal Output (+)
TB1-2		Municipal Output (-)
Jumpers		
W1	MCOM	UP for Polarity Reversal operation DOWN for city master box/releasing operation
W2	MCOM	UP for Polarity Reversal operation DOWN for city master box/releasing operation
PTRM Module Jumper		
W1	PTRM	OUT for supervision of PTRM Module IN for no supervision
<p>NOTE: The BSM is shipped with jumpers installed on the middle three pairs of pins on J2. These jumpers must be removed when the PTRM is installed.</p>		

3.10 Digital Communicator Operation (7100-D Model)

The 7100-D digital communicator model features numerous formats for communication to a central station. The 7100-D provides the following functions:

- Line seizure - takes control of the phone lines, disconnecting any premises phones using the same lines.
- Off/On-Hook - perform on and off-hook status to phone lines
- Listen for dial tone - 440 Hz tone typical in most networks
- Dialing the Central Station phone number - programmable
- Discern proper Central Station "ACK" and "Kiss-off" tone
- Transmit data to the Central Station
- Verify that data has been accepted by the Central Station
- Hang-up and release phone lines
- Communicate in a variety of formats

3.11 Central Station Reporting

UL Listed receivers compatible with the 7100 are listed in Table 4 below:

Table 4		
Manufacturer	Receiver Model	Formats
Silent Knight	Model 9000†	SIA-8 SIA-20 SK4/2 3/1 14 3/1 23
Silent Knight	Model 9800/9500	SIA-8 SIA-20 SK4/2 3/1 14 3/1 23 Contact ID
Ademco	Model 685	3/1 14 3/1-23
Sur-Gard (Ver. 1.64 or higher)	SG-MLR2-DG	SIA-8 SIA-20 SK4/2 3/1 14 3/1 23 Contact ID
Osborne Hoffman	Quickalert	SIA-8 SIA-20

† If you are using the Model 9000 and the message “HELP” appears on the printer after attempting to download, the 9000 software must be upgraded.

The Model 9000 must have the Model 9307 software package, Revision 900501 or later, to print the PROGRAMMING PASS and PROGRAMMING FAIL messages.

3.14 Digital Communicator

Before connecting the 7100-D to the public switched telephone network the installation of two (2) lines is necessary. The following information is provided if required by the local telephone company:

Manufacturer:

Fire Control Instruments, Inc.
16 Southwest Park
Westwood, MA 02090
Product Model Number: 7100-D
FCC Registration Number: 6KWUSA-34215-AL-T
Ringer Equivalence: 0.5B

3.15 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.
- This equipment is designed to be connected to the telephone network or premises wiring via terminal blocks.

3.16 FCC Required Information

This equipment complies with Part 68 of the FCC Rules. The Ringer Equivalence Number (REN) is listed in Section 3.13, while the FCC Registration Number is listed in 3.14. These numbers must be provided to the telephone company, if requested.

3.17 Repairs

The 7100-D Digital Communicator does not contain any user-serviceable parts. The unit must be returned to the factory for repair through an authorized FCI distributor.

3.18 Optional Accessories

3.18.1 LCD-7100 Serial Remote Annunciator

The LCD-7100 Serial Remote Annunciator provides an 80-character display and function keys for “Alarm Acknowledge”, “Trouble Acknowledge”, “Signal Silence”, “System Reset/Lamp Test” and “System Drill Test”. The 80-character display shows all pertinent information except for menus.

Keypad functions are enabled only when the keylock is turned to the “Unlocked” position, with the exception of the “Trouble Acknowledge” switch which silences the local audible trouble sounder.

LEDs provided are “Alarm”, “Supervisory”, “System Trouble”, “Power Fault”, “System Silenced”, “NAC #1 Silenced” and “NAC #2 Silenced”.

The LCD-7100 is flush or surface mounted on a standard four-gang electrical box.

The 7100 Series control can accommodate up to five (5) remote LCD-7100 annunciators which may be located up to 4,000 feet away from the main control panel. See Table 6 below for resistance limitations of the connecting circuit.

Table 6					
No. of LCD-7100 units	1	2	3	4	5
Max resistance of 24 VDC power circuit (ohms) to most distant LCD	70	38	24	17	4

3.18.2 LDM-7100 LED Driver Module

Each LDM-7100 LED Driver Module provides 7100 Control Panel output for 33 remote LEDs. Three (3) LDM-7100 modules may be mounted in a single annunciator for a maximum total of 99 points per annunciator.

The annunciator may be located up to 4,000 feet from the panel and up to four (4) additional annunciators can be connected, configured identically with the first. See Table 7 for resistance limitations for the connecting circuit.

Note, that if more than four LDM-7100 modules are installed, an external Regulated and Power-Limited power supply Listed for use with fire protective signaling units is required.

The module is intended for mounting inside the enclosure of a UL Listed remote annunciator. It may be mounted by means of mounting screws or stacked using a metal hex standoff kit. Wire routing and installation methods are to be in accordance with the annunciator installation instructions.

Table 7							
Qty. of LDM-7100 modules	1	2	3	4	5	to	15
Max resistance of 24 VDC power circuit (ohms) to most distant LDM	40	20	14	10	See above.		

3.18.3 INI-7100 Intelligent Network Interface Module

The INI-7100 Intelligent Network Interface Module enables the connection of up to 64 FCI 7100 Series fire alarm control panels into a network. Two versions of the INI-7100 are available: The INI-7100-UTP and INI-7100-FO.

The INI-7100-UTP uses a terminal block to interconnect the panels via unshielded twisted pair over a distance of up to 3,000 feet.

The INI-7100-FO will likewise connect up to 64 panels over a distance of 3,000 feet via either unshielded twisted pair wire or fiberoptic cable. The INI-7100-FO is equipped with both terminal block and type ST connectors that will support standard fiberoptic cable up to 200 microns (multimode). However, the transmitter circuitry is optimized for 62.5/125 microns.

NOTE: Maximum attenuation for the entire fiberoptic line is 10 dB.

The network allows multiple 7100 Series controls to be monitored and controlled from any panel or remote display. It permits remote annunciation and or monitoring to be located anywhere on the network, thereby allowing the individual 7100 controls to be configured into a massive parallel distributed fire alarm system.

4.0 Programming/Operation Instructions

4.1 LED Indicators

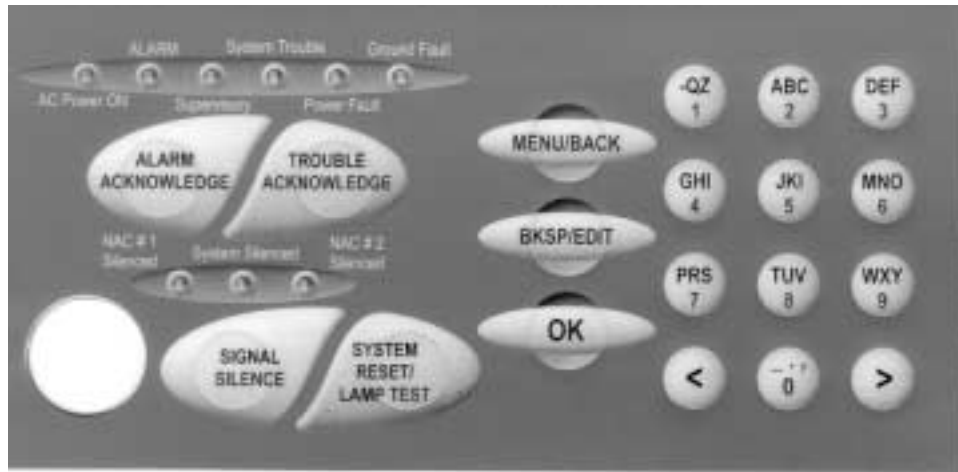


Table 6

Designation	Description	Comments
AC Power On	(green)	Lights to indicate presence of 120/240 VAC input.
Alarm	(red)	Lights when system is in alarm, flashes until alarm is acknowledged
Supervisory	(yellow)	Lights when supervisory condition exists, flashes until trouble acknowledge is performed
System Trouble	(yellow)	Lights to indicate trouble condition, flashes until trouble is acknowledged.
Power Fault	(yellow)	Lights during a LOW or NO Battery condition
Ground Fault	(yellow)	Lights to indicate a ground on a field conductor
NAC 1 Silenced	(yellow)	Lights to indicate that NAC Circuit has been silenced via the Signal Silence Switch (if programmed as silenceable)
NAC 2 Silenced	(yellow)	Lights to indicate that NAC Circuit has been silenced via the Signal Silence Switch (if programmed as silenceable)
System Silenced	(yellow)	Lights when a System Silence has been performed.

4.2 Switches

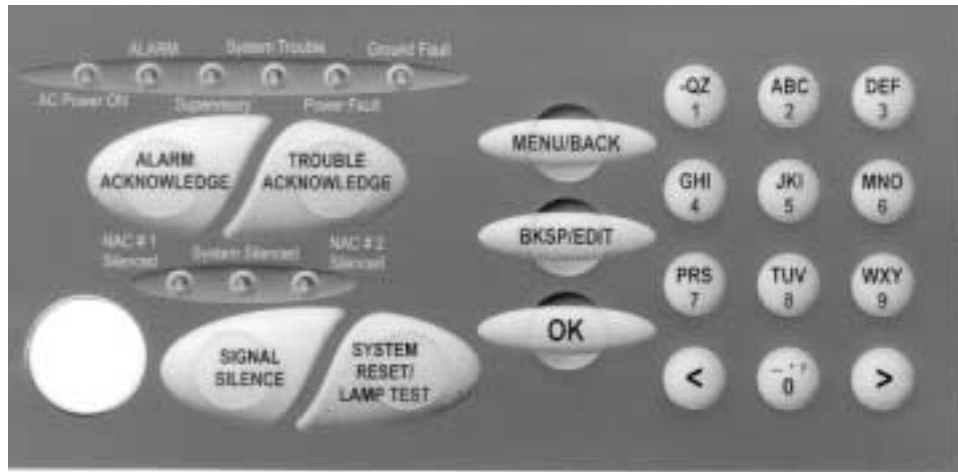


Table 7

Designation	Comments
Alarm Acknowledge	Silences the panel audible sounder. This must be pressed once for each Alarm condition present in the system.
Trouble Acknowledge	Silences the panel audible sounder. This must be pressed once for each Trouble or Supervisory condition present in the system.
Signal Silence	Press once and any outputs programmed as silenceable will be deactivated. (All applicable silence LEDs will light). A second activation will re-activate the previously silenced outputs. This switch only functions if an Alarm or Supervisory condition exists in the system.
Lamp Test/Reset	Press momentarily and all LEDs (including all elements in the display) will light momentarily. Press and hold to reset the system.
Menu/Back	Used in programming. The display will prompt the operator as to which function applies. "Menu" is pressed to initially put the 7100 into programming mode. The "Back" function will step the operator out of the programming mode one element at a time.
BKSP/Edit	Used in programming. The display will prompt the operator as to which function applies.
OK	Accepts any changes made in the programming field.
Alphanumeric Keys	These 12 keys allow the user to choose a specific point address by using the numbers for point sensitivity reading, disabling an address, etc. Press each key the number of times necessary to display the correct character on the display. Example: Pressing the "2" key Once will display the letter "A" Twice will display the letter "B" Three times will display the letter "C" Four times will display the number "2"
PK-625 Key Switch	This key switch is keyed alike with the door lock, and must be operated in order to activate the key pad.

5.0 System Programming

System programming can be performed either by front panel programming as shown below or via portable computer and the FCI Field Configuration Program. See the FCP Software Training Guide, P/N 9000-0456.

5.1 MAIN Menu selections

CONFIG. where automatic configuration of the system is accomplished, as well as all of the system global programming, input to output group programming and NAC coding.

WALK/DRILL allows the user to select Audible or Silent Walk Test as well as activating and de-activating the System Drill function.

I/O allows the user to activate (turn on) or de-activate (turn off) any output in the system.

CLOCK selection supplies the options for programming the system time, date, day/night weekend and holidays.

LOG options for manipulating the Event Log are display, print, clear (buffer) and selecting to print only the sensitivity report.

INFO gives the user basic system information such as the current firmware version, the last configuration date as well as the last menu designation used during the last system configuration update.

5.1.1 Addresses/Default settings after Autoconfiguration

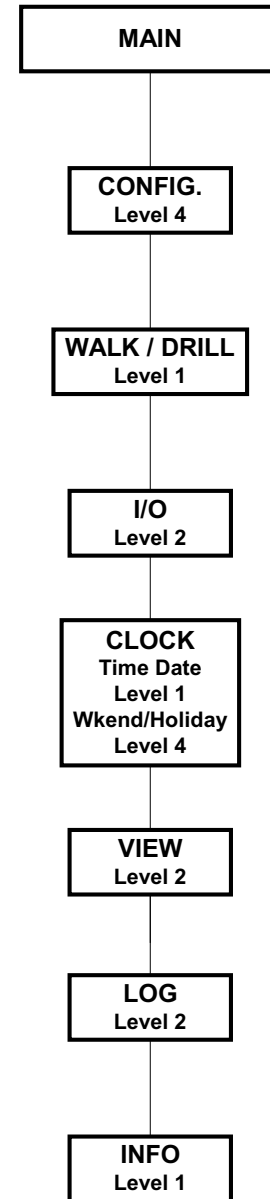
Sensors occupy Addresses 01-99 on the signaling line circuits. Sensors are ion, photoelectronic, or thermal. They are latching and non-verified when autoconfigured. Monitor/Control modules occupy Addresses 101-198. The type of device assigned to a monitor module during autoconfiguration depends on the address as shown below:

Address	Device
100-149	Manual station
150-159	Supervisory switch
160-169	Waterflow switch
170	Silence switch
171	Reset switch
172	Fire Drill switch
173	Alarm/Acknowledge switch
174	Trouble/Supv. Acknowledge switch
175	Tornado switch
176-179	Tamper switch
180-184	Control panel
185-189	Remote zone
190-198	Normally open contacts

AOM modules are silenceable and activate on general alarm (day or night).

AOM modules modified by breaking off tabs are non-silenceable and activate on general alarm (day or night).

7100 MENU STRUCTURE



<p>Main Any selection</p> <p>(Only opens if adequate access has not already been obtained)</p>	<p>[GAIN] Type password for level 3: [ACCESS] 000000</p> <p>keypad: enters password (shows as "XXX..." on display) OK: if password is valid for desired level (or higher), opens access, logs the event, and continues to next menu. If not, returns to Main menu</p>
<p>Main Config Password</p>	<p>[CHANGE] Level 1, User 1 111111 [PASSWORD] select key in password</p> <p>keypad: enters new password for specified level and user <>: scrolls through levels and users. If current access level is lower than selection, password is shown as XXXXXX, otherwise as digits.</p>
<p>Main Config Inputs Type Edit</p> <p>(If BKSP/EDIT is pressed, and editing is possible.)</p>	<p>[DEFINE] AMM Type 43 (Alarm) [TYPE] 1: select response</p> <p><>: scrolls through available response categories: Alarm, Manual Station, Supervisory, Tamper, or Waterflow. Note that Alarm, Manual Station and Waterflow all produce alarm response, except Manual Station may use PAS (depending on the global PAS settings) and Waterflow disables silencing. OK: accepts the response selection and opens the Edit Device Type menu.</p>
<p>Main Config Inputs Type Define Type</p> <p>(After response category is accepted)</p>	<p>[EDIT] Spark De(__ Alpha, repeat [TYPE LBL] move, EDIT flip case, OK</p> <p>Initially, label comes up all underscores. Keypad: enters text via telephone codes. Scrolls through the numeral's associated lower case letters, plus the numeral itself. Ex: press "2" key once for 'a', again for 'b', again for 'c', and again for '2'. Another press scrolls back to 'a'. To change to/from upper case, press "BKSP/EDIT". or scrolls to previous or next letter. "BACK" exits to the Add Type menu without making change. OK accepts new label and exits to the Select Input Type menu.</p>
<p>Main Config Inputs (or Outputs) Select Location Edit</p> <p>_____ or _____</p> <p>Main Config System ID Edit</p>	<p>[EDIT 1ST] (_____ Alpha key, repeat [LOC WORD] move, EDIT flip case, OK</p> <p>Keypad: enters text (see Edit Device Type menu). OK: accepts new text for selected address.</p>
<p>Various (If OK is pressed when illegal value has been entered.)</p>	<p>Error! Entry is not valid. Press BACK, then change value or press BACK again.</p>

5.2 CONFIG. Menu Selections

AUTO is the selection used to either initialize the system or update it.

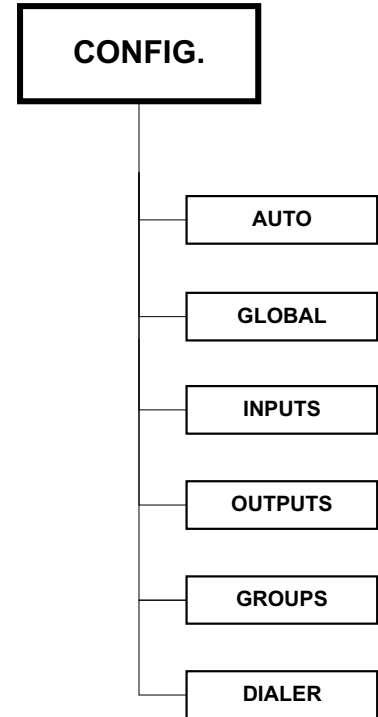
GLOBAL is the key feature to the simplicity of programming. Most system as well as individual SLC device programming can be accomplished here.

INPUTS allow the user to insert point-to-point address information to sensors and monitor points individually for device type, location, input group(s), and to modify any of the global programming.

OUTPUTS gives the same programming capabilities supplied to the inputs.

GROUPS supply the option to allow either Alarm or Supervisory devices access to the system general output list for each type (General Alarm or General Supervisory outputs).

DIALER Configuration gives the user the ability to turn the DACT on, program primary and secondary phone numbers and accounts, the format that the receiver requires, as well as the event types that are or are not transmitted.



NOTE:

The DACT account programming options for Alarm, Test, Trouble and Supervisory events are defaulted to "MUST" in the Reporting Options section. In order to use this panel for remote signaling purposes all events must be transmitted off-premises.

If one account is used, it is required that the Reporting Option for each event (Alarm, Test, Trouble, Supervisory) be set to "MUST". If two accounts are used, it is required that the reporting option for each event be set to "MUST" between the two accounts.

Reporting options for each event (Alarm, Test, Trouble, Supervisory) are as follows:

OFF - Event will not be reported to the account.

CAN - Event can be reported to this account.

MUST - Event must be reported. The DACT will continue to attempt to report this condition until all attempts have been made. If the DACT cannot report the event, the event will remain in system memory and will be retransmitted with a subsequent event.

7100 Series Menu System	
Menu Tree	Display and Selections
Main	[MAIN] 1:Config 2:Walk/Drill 3:I/O 4:Clock 5:View 6:Log 7:Info
	1: Opens System Config Menu (PW-L4 required)
	2: Opens Walk Test / Drill Menu (PW-L1 required)
	3: Opens I/O Control Menu (PW-L2 required)
	4: Opens Set Clock Menu (PW-L1 required)
	5: Opens System Config Menu for viewing only (PW-L3 required)
	6: Opens Event Log Menu (PW-L1 required)
	Note: View option is identical to the Config option, allowing access to all the configuration menus, but prevents changing of any settings. The limiting factor between View and Config is the password level used.
Main Config	[SYSTEM] 1:Auto 2:Global 3:Inputs [CONFIG] 4:Outputs 5:Groups 6:Passwords
	1: Opens Autoconfig Menu
	2: Opens Global Config Settings Menu
	3: Opens Select Input Device Menu
	4: Opens Select Output Device Menu
	5: Opens Select Group Menu
	6: Opens Change Password Menu
Main Config Auto	[AUTO-] 1:Clear, then... 2:Update SLCs [CONFIG]
	1: Clears system configuration, then reads SLCs.
	2: Reads SLC, finds changes. New devices get default config, missing devices are marked off-line. No change to globals or groups. (via confirm screen)
Main Config Global	[GLOBAL] 1:I/O Devices 2:NACs 3:Codes [CONFIG] 4:SystemID 5:Dialer 6:Misc.
	1: Opens Device Defaults menu
	2: Opens NAC Settings menu
	3: Opens Coded Pattern Setup menu
	4: Opens System ID menu
	5: Opens Dialer Settings menu
	6, 7: Opens Misc. Globals menus

NOTES:

1. In general, "BACK" exits the current menu and returns it to the previous menu without changing any settings. "OK" accepts any changes that have been made and returns to the previous menu, except in special cases where it continues to the next menu in a group. (See Menu 35).

2. The Set/View Configuration functions use the same menus, but behave differently depending on the main menu selection and password given. If the "Config" option is selected and a valid Level 4 password is entered, the menus are fully operational. If the "Views" option is selected, or if the password is not valid for Level 4, then the menus may be examined but no changes can be made.

Main Config Global Device defaults	[SET] 1:Verification 2:Sensitivity [DEFAULTS] 3:PAS 4:Multilevel
	1: Opens Set Default Verify Options menu.
	2: Opens Set Default Sensitivity Menu.
	3: Opens Set PAS Parameters menu. 4: Opens Set Multilevel Parameters menu.
Main Global ConfigDevice defaults Default Verification	[DFLT] 1:Dflt Ion,Photo Verify (None) [VERIFY] 2:Dflt Manual Sta Verify (None)
	1: Scrolls through None, Smoke, PAS. 2: Toggles between None and PAS.
Main Config Global Device defaults Default Sensitivity	[DFLT] DAY 1:Photo (Low) 2:Ion (Low) [SENS] NIT 3:Photo (Med.) 4:Ion (Med.)
	1: Scrolls through selections for photo sensor daytime sensitivity.
	2: As above for Ion.
	3: As above for photo night time sensitivity. 4: As above for Ion.
Main Config Global Device defaults PAS Parameters	[PAS] 1:Night Bypass (ON) [OPTION] T1 (15sec) T2 (180sec)
	1: Toggles Night Bypass ON/OFF. T1 and T2 parameters are fixed in firmware; they are shown for reference only.
Main Config Global Device defaults Multilevel Params	[MULTI] 1:Alert Threshold (35%) [LEVEL] 2:Action Threshold (65%)
	1: Scrolls through Alert Threshold options (20, 35, 50, 65%) 2: Scrolls through Action Threshold options (35, 50, 65, 80%)
	OK: accepts settings as shown (if valid)
Main Config Global NACs	[NAC] 1:Delay Times [OPTIONS] 2:Coding & Silencing
	1: Opens Set NAC Delays menu. 2: Opens Set NAC Coding menu.
Main Config Global NACs Delay Times	[NAC] 1:Silence Inhibit (None) [DELY] 2:Cutoff (None)
	1: Scrolls through Silence Inhibit Delay options (None, 1 min, 3 min, 5 min) 2: Scrolls through Signal Cutoff Delay options (None, 5 min, 10 min, 15 min)
Main Config Global NACs Coding	[NAC] NAC 1 1:(Coded) 3:(Silenceable) [MISC] NAC 2 2:(Steady) 4:(Nonsilencbl)
	1: Toggles NAC 1 between Coded and Steady.
	2: Toggles NAC 2 between Coded and Steady.
	3: Toggles NAC 1 between Silenceable and Non-silenceable. 4: Toggles NAC 2 between Silenceable and Non-silenceable.

Table 8 Sensor Sensitivity Settings		
	Photo	Ion
Low	2.0	1.3
L/M	1.75	1.2
Med.	1.5	1.0
M/H	1.25	0.88
High	1.0	0.77

Main Config Global Codes	[CODED] 1:Set Day Alarm (MT60) Config [PATTS] to select condition <>: selects response condition from: Day Alarm, Night Alarm, Action, Supervisory, Tornado. 1: Scrolls through coded pattern selections: MT60, MT120, Temporal, CA Code, Coded 4s.
Main Config Global System ID or Main Config Inputs (or Outputs) Select Location	[L,AAA] FLR1 Lobby Config [LOCTN] 7,9 chng 1st ^ chng 2nd Enter label using keypad and shift key. Press button until desired letter appears. Use BKSP/EDIT to capitalize. Use arrow keys <> to shift message from left to right or vice versa. NOTE: if this menu is opened from the Global Config Menu, System ID selection (Menu 5 option 4), SYSTM ID is displayed; otherwise L,AAA LOCTN as shown above. 1: Toggles Multiple Trouble Acknowledge ON/OFF 2: Toggles Alarm/Trouble Reminder ON/OFF 3: Scrolls Walk Test Timeout (30m, 60m, 90m) 4: Toggles RS232 Supervision Message ON/OFF
Main Config Global Misc. [6]	[MISC] 1:MultiAck(ON) 2:Reminder(ON) Config [OPTS] 3:WT Timeout(30m) 4:SupvMsg(ON)
Main Config Global Misc. [7]	[LCD] Number of Remote Displays (1) [Annunc]

NOTE:

Some menus may appear in different contexts, but with slightly different behavior. For example, the “Select Device” menu is used in both the Config Inputs and Config Outputs sections to determine which device is to be affected. The process of selection is the same, but when the selection is complete, the result (that is, which menu opens next) differs.

Main Config Inputs or Outputs _____ or _____ Main I/O Control or Ena/Dis	[SELECT] Loop,Address: 1,001 [DEVICE] Key in or use <,>
	# keys: enters loop & address (restriction: Address 200) < >: Scrolls up or down to next available device.
	OK: Accepts address, opens Configure Input Device Menu, Configure Output Device Menu, Control Output Menu, or Enable/Disable Device Menu, as appropriate.
Main Config Inputs Select	[CONFIG] 1:Type 2:Group 3:Verify 4:Sens [L,AAA] 5:Location 6:View 7:Copy L,AAA
	1: Opens Set Input Type Menu.
	2: Opens Assign Input To Group Menu.
	3: Opens Set Verify/PAS Function Menu (sensors only).
	4: Opens Set Sensitivity Menu (Ion, Photo devices only).
	5: Opens Set SLC Device Location Menu.
	6: Displays all settings for current device. 7: Copies all settings of the specified device (last input modified).
Main Config Inputs Select Type	[L,AAA] Ion Duct Det 01 (Alarm) [TYPE] ^ Key in Input Type # or use <,>
	<>: scroll through types which match this physical device. # keys: enter type number (no restrictions; see type table) Shows type and associated Response. BKSP/EDIT: If selected device type is editable, or if it is not editable but there is room to create a new user- editable type, opens Add Type menu (Menu 35). ^ indicates that editing is possible.
Inputs Select Group	[L,AAA] Group 007 (00=no group) [GROUP] Key in Group# or use <,>
	No restrictions on group assignment
Inputs Select Verify	[L,AAA] 1: Verification (Default)
	Options are: Default, None, Smoke Verify (Ion/Photo only), PAS
Inputs Select Sens	[L,AAA] 1:Day Sensitivity (Default) [SENS] 2:Night Sensitivity (Default)
	1: Scrolls through Day Sensitivity options. 2: Scrolls through Night Sensitivity options.
	Options vary by type, may include: Default, 1.00%, ... 2.00%
Inputs Select View	[L,AAA] Ion Duct Det FLR2 Storeroom Alarm Grp23 Vfy:Default 1.75%
	Shows: Loop and Address, Device Type, Location Lbel, Device Response, and I/O Group. Shows Verify/PAS settings and day sensitivity setting if applicable (if device is set for default sensitivity, shows default day sensitivity). No changes can be made.

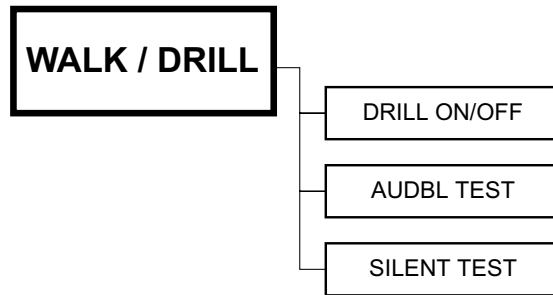
Main Config Outputs Select	[CONFIG] 1:Type 2:General Resp 3:Groups [L,AAA] 5:Location 6:View 7:Copy L,AAA
	1: Opens Set Output Type Menu.
	2: Opens Assign Output To Group(s) Menu.
	3,4: Unused.
	5: Opens Set SLC Device Location Menu.
	6: Displays all settings for this device.
	7: Copies settings of the specified device (last output modified).
Main Config Outputs Select Type	[L,AAA] 34 Silenceable Signal AOM Key in Output Type# or use <,>
	<>: scroll through types which match this physical device # keys: enter type number (no restrictions: see type table) Output device types cannot be edited. If the new type is an input device, "OK" key returns to the System Config menu, otherwise to Output Config.
Select General Response	[L,AAA] Activates for Day Alarm (YES) [GNL RSP] select condition 1:YES/NO
	1: toggles specified general group membership YES/NO.
Select I/O Group	[L,AAA] Group 1: 36 (00 = none) [GROUPS] Key in group # <,> change
	<>: scrolls through list of general groups.
	Number keys: set group number.
Select View	[L,1AA] Slncbl NAC Main Lobby ALd ALn ACT SPV TOR WKT TBL 02 00 00
	<>: select which of the three possible groups to set.
	Shows: Loop and Address, Type, Location, General responses, Group membership. General responses show above abbreviations
Main Config Groups	[SELECT] Group number: 03 [GROUP] Key in group# or use <,>
	if the output is activated in that condition, or — if not. # keys: enters group number.
	<>: Scrolls up or down to next group.
Main Config Groups Select General Response	[GROUP] Activates General Alarm (NO) [03] Activates Genrl Supervisory (YES)
	OK: Accepts group number, opens Configure Group Menu.
	1: Toggles General Alarm response on/off (applies to alarms initiated by Alarm, Manual, Waterflow, and Tornado devices, for both Day and Night general alarm).
	2: Toggles General Supervisory response on/off (applies to off- normals initiated by Supervisory and Tamper devices).
	If a group contains inputs of several types (an unusual case), the appropriate general flag is applied for each new alarm/off-normal.

Main Config DACT (opens only if DACT is installed)	[CONFIG] 0:Options 1:Line1 2:Line2 [DACT] 3:Account1 4:Account 2
	0: Opens DACT Options menu.
	1: Opens Phone Line Options menu for Line 1.
	2: Opens Phone Line Options menu for Line 2.
	3: Opens Account Options menu for Account 1. 4: Opens Account Options menu for Account 2.
Main Config DACT Account Options	[ACCTn] 1:Format 2:Reporting [OPTS] 3:AccountID 4:CIC & Phone#
	1: Opens Communications Format menu Account n.
	2: Opens Reporting Options menu for Account n.
	3: Opens Account ID menu for Account n. 4: Opens Account CIC / Phone Number menu for Account n.
Main Config DACT Account Options Reporting Options	[ACCTn] 1:Alarms (Must) 2:Test (Can) [REPR] 3:Trbl (Can) 3:Spvsry (Off)
	1: Selects reporting option for Alarms [Off, Can, Must].
	2: Selects reporting option for Test [Off, Can, Must].
	3: Selects reporting option for Troubles [Off, Can, Must]. 4: Selects reporting option for Supervisory [Off, Can, Must].
Main Config DACT Account Options Account ID Number	[ACCTn] 000000 [ID #] Type all 6 digits (leading 0s)
	# keys: enters account ID number for account n.
	BKSP, <, > not operational.
	Note: all 6 digits must be entered, with leading zeros if necessary.
Main Config DACT Account Options CIC Number - and - Phone Number	[ACCTn] CIC:SSSSSSSS #:SSSSSSSSSSSSSSSS [CIC, #] Type digits, BKSP/EDIT,
	# keys: enters CIC (dialing prefix) or phone number for account n.
	<, >: moves backward or forward through numbers.
	BKSP: Scrolls through special characters S (no digit), *, #, comma (2 sec. Pause), and @ (dial Tone Select) without advancing cursor. When desired character appears, press ">" to advance. Note: Cursor is on first digit of phone # when menu opens.
Main Config DACT Line Options	[LINE n] 1:Dialing Mode (0) [OPTS] 2:Line Monitor (ON)
	1: Scrolls through Dialing Mode options for Line n [0...4]. 0=USA Tone or rotary (40/60), 1=USA Rotary only, 2=Tone only, 3=Tone or European Rotary (33/67), 4=European Rotary only.
	2: Toggles Line Monitoring ON/OFF for Line n. Note: periodic line test is enabled when either line's Line Monitor setting is 1.
Main Config DACT Account Options Comm Format	[ACCTn] 1:Format (0) [FORMT]
	1: Scrolls through communication format options for Account n [0...6] 0=SIA DCS 8, 1=SIA DCS 20, 2=Ademco Contact ID, 3=4/2 1400 HZ, 4=3/1 1400 HZ, 5=3/1 2300 HZ, 6=4/1 2300 HZ
Main Config DACT Account Options Comm Format	[DACT] 1:DACT (OFF) :FirstTest 00:00 Config [OPTS] 2:ACDelay (10) 3:Tests/day (1)
	1: Toggles DACT operation ON/OFF.
	2: Toggles AC Fault reporting delay (0, 10, 20 hours).
	3: Scrolls through number of line tests per day [1...4]. <, >: Scrolls First Line Test Time setting (15-minute steps).

5.3 WALK / DRILL Menu Selection

Drill ON/OFF Is a simple ON or OFF selection. ON will activate the NACs, while OFF will deactivate them.

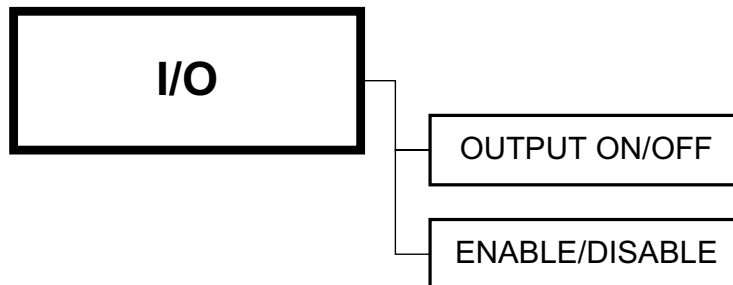
Audible Test Is a simple ON or OFF selection for an audible walk test. The NACs will sound twice for a trouble, 3 times for a supervisory signal and 4 times for an alarm.



5.4 I/O Menu Selection

Output ON/OFF forces the toggling on or off of a specified output. These outputs can include NAC 1, NAC 2, Muni. Ckt. (if present) and any Addressable Control Point.

Enable/Disable allows the user to take any addressable device on either SLC and disconnect it through software. While disabled, a point will report a trouble until it is enabled, but will not cause or respond to an alarm.



Main Walk/Drill	[Walk/] 1:Drill (OFF) 2:Audbl Test (OFF) [DRILL] 3:Silent Test (OFF)
	1: Toggles Fire Drill ON/OFF.
	2: Toggles Audible Walk Test ON/OFF.
	3: Toggles Silent Walk Test ON/OFF.
Main I/O	[I/O] 1: Output On/Off [CTRL] 2: Enable/Disable Device
	1: Opens Select Device to Control menu.
	2: Opens Select Device to Enable menu.
	Note: These are the same menus as used in the Configure section, or similar, except after selection they proceed to the following menus.
Main I/O Select Output On/Off	[CNTRL] NAC 1 (AUTO) [L,AAA] 1:On/Auto
	1: Toggles selected output ON/AUTO. Output selections include NAC1, NAC2, and Muni Circuit (if present). These appear at the bottom of the output device scroll list, and can be entered by keypad as addresses 0001, 0002, and 0003. (Note that AOMs start at address 1101.) If the selected device is an AOM, its location is shown, otherwise NAC 1, NAC 2, or Municipal Circuit. Status LEDs and relays are not considered to be programmable outputs.
Main I/O Select Enable/Disable	[ENA/DIS] Municipal Circuit (ENABLED) [L,AAA] 1:Enable/Disable
	1: Toggles selected device ENABLED/DISABLED.

5.5 CLOCK Menu Selection

Time is set in 24 hour notation. It is set with hours then minutes “HHMM”.

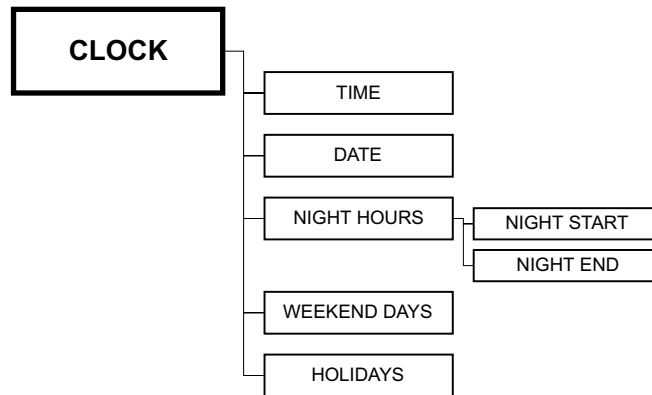
Date is set as month, date and year “MMDDYY”.

Night Hours sets the Day/Night programming. If no time is set here the system will always remain in the Day mode.

Night Start will initiate the Night/Weekend programming which is generally used to make certain sensors more sensitive to particles of combustion than during the day. This must be programmed in 24 hour notation (HHMM).

Night End will conclude the Night/Weekend programming. Weekend Days is where the user programs the days of the week that the premises are unoccupied (the same as Night).

Holidays is where the the user programs the days of the year that the premises are unoccupied (the same



Main Clock	[SET] 1:Time 2:Date 3:Night [CLOCK] 4:Weekend 5:Holidays
	1: Opens Set Time menu.
	2: Opens Set Date menu.
	3: Opens Set Night Hours menu.
	4: Opens Set Weekend Days menu.
5: Opens Set Holiday Schedule menu.	
Main Clock Time	[SET] 13:44 (1:44 PM) [TIME] Type HHMM (24-hour notation)
	keypad: enter time.
Main Clock Date	[SET] 07/16/98 (Thu July 16, 1998) [DATE] Type MMDDYY
	keypad: enter date.
Main Clock Night Hours	[SET] Start 17 End 07 (5:00P7:00A) [NIGHT] Type SSEE (24-hour notation)
	keypad: enter night start and end hours.
Main Clock Weekend Days	[SET] Saturday (YES) [WKEND] select day 1:Yes/No
	1: Toggles weekend mode YES/NO for day shown.
	<>: scrolls through days of the week.
	If YES, system will operate in Night mode during the entire day.
Main Clock Holidays	[SET] 12/25 Type MMDD 0000=delete [HOLIDY] another holiday
	If NO, system will operate in Night mode during night hours only. keypad: enters date to be treated as a holiday.
	<>: scrolls through list of holiday entries (accepting current one).

NOTE:

Level 1 access is required to enter the "Set Clock" menu. The "Set Time" and "Set Date" functions are available at Level 1 access, and it is also possible to view the other clock menu settings (day/night schedule, weekends, holidays) with Level 1 access. However, Level 3 access must be obtained before these configuration settings can be changed.

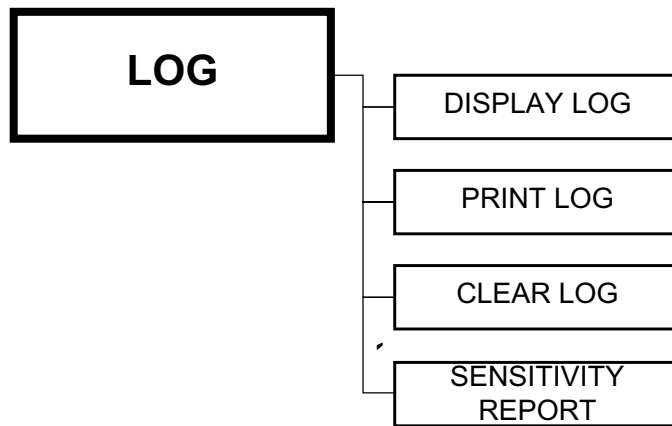
5.6 LOG Menu Selection

Display Log Opens the System Display to all events in the buffer memory.

Print Log Sends the entire buffer memory to the RS-232 port.

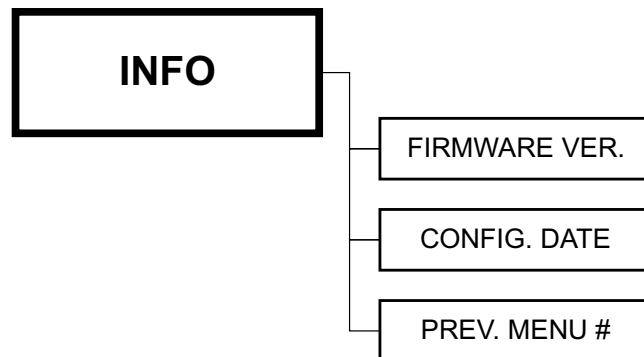
Clear Log (Hard reset) will eliminate all events stored in the buffer memory.

Sensitivity Report Will send sensor sensitivity information to the RS-232 port.



5.7 INFO Menu Selection

Displays the Firmware Version installed in the 7100. The last configuration and the numerical designation of the Menu Item used for the last configuration update.



Main Log	[VIEW] 1:Display Log 2:Print Log [LOG] 3:Clear Log 4:Sens. Report
	1: Opens Show Events menu.
	2: Opens Print Log menu.
	3: Prompts for OK; if accepted, clears the event log and resets the panel. 4: Initiates a sensor sensitivity printout.
Main Log Show Events	(Display shows a log entry)
	Scrolls through all logged events, beginning with the most recent event. If user attempts to scroll beyond the end (or beginning) of the log, End of log is displayed briefly, then the last (or first) event is redisplayed. Display cannot give instructions, since it contains all the information about the event being displayed (same as the display you would see when the event occurred).
Main Log Print Log	[PRINT] 1:All events 2:Last 20 [LOG]
	If there is no log printout in progress, starts a printout as shown above. Once the printout begins, or if a printout is in progress when this menu is opened, the message and function change to "3:Abort printout". Printout starts immediately, not when OK is pressed. If printout completes while this menu is still open, the text of the menu doesn't change until user presses a key.
Main Info	[PANEL] Software Last Cfg. Change [INFO] V1.2-001 12:23 07/23/99 33
	Shows the systems software version, time and date of the most recent change to configuration program, and number of menu used to make the change (i.e., what was changed).

6.0 Power Up Procedure

6.1. General

Ensure that all cables and optional modules (if any) are installed and secured per the installation instructions. DO NOT install any field wiring at this time. Connect the End of Line devices to the notification appliance and municipal (if installed) circuits.

2. Power the panel with AC first. The system will initialize and indicate a "Battery Missing" condition.
3. Connect the batteries, taking care to observe polarity.
4. The system should be in normal condition. You may proceed with the installation of field wiring. Check all wiring prior to connection to the control panel. Do not use this panel as a circuit tester.

6.2 To set the system time (Keyswitch must be engaged).

Press the **MENU/Back** button on the keypad and enter the Level 1 password, XXXXXX.

2. Press the OK button.
3. The Main Menu will be displayed. Press the Number 4 and the Clock Menu will be displayed.
4. Number 1 opens the **Time** setup. Number 2 opens the date setup, Number 3 opens the **Day/Night** setup. Number 4 opens the **Weekend** setup, and Number 5 opens the **Holiday** setup. The data is entered by using the keypad and the **OK** button when each section is completed. The **OK** button acts as an Enter Key.
5. Press the **Reset/Lamptest** button and ensure that the time and date remain correct.

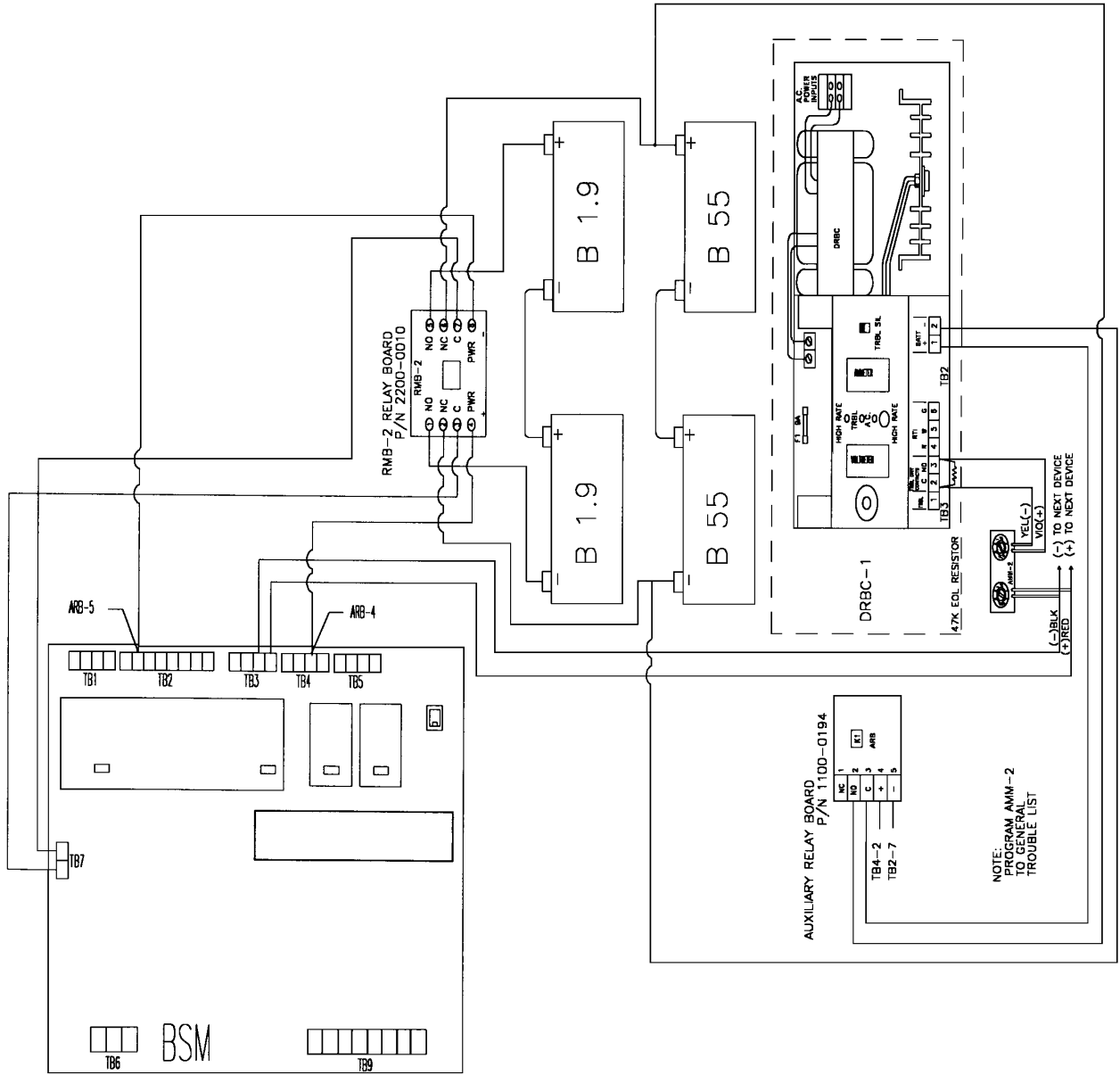
6.3 Automatic Configuration

1. Press the **Menu/Back** button on the keypad and enter the Level 4 password, YYYYYY.
2. Press the **OK** button.
3. The Main Menu will be displayed. Press the Number 1 and the **Configuration Menu** will be displayed.
4. Press the Number 1 to open the Automatic Configuration Menu. Numbers 2 through 5 are for specific programming and are covered in previous sections.
5. Since this is the first time the system is being configured, press the Number 1 to initiate the **Clear, Then Configure** process. This will place all of the system settings to the factory default and then read all of the devices correctly connected to the two SLCs. After this process is complete the system may be given an initial test to assure all of the devices have been installed into the system memory.

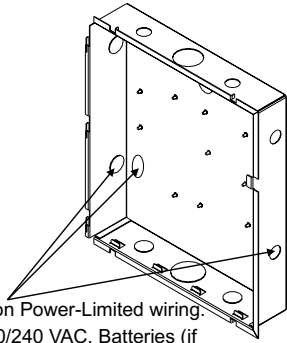
NOTE: Automatic configuration does not set the DACT. The DACT must be programmed.

7100 Series Device Types and Functions

#	Device Type	Physical	Response	Action in Alarm Condition	
1	Ion Sensor	Ion	Smoke Alarm	Trips ALARM LED and ALARM Relay.	Alarm condition latches, trouble condition is restorable.
2	Ion Duct Sensor				
3	Photo Sensor	Photo			
4	Photo Duct Sensor				
5	Photo / Thermal	Thermal	Alarm		
6	Thermal				
7		AMM	Manual Alarm	Trips other outputs per Day Alarm or Night Alarm Response, or by group.	
8	Smoke Det				
9	Manual Station				
10	Plenum Det		Alarm		
11	N.O. Contact				
12	Heat Det		Alarm		
13	SubLoop				
14	Waterflow Silenceable				
15	Beam Det				
16	Duct Det				
17	FACP Alarm				
18	Remote Zone				
19	Smoke / Heat				
20	Supervisory Switch (NonLatching)	AMM	Supervisory NL	Trips general supervisory outputs, SUPERVISORY LED, TROUBLE Relay.	Alarms and Troubles restore.
21	Tamper Switch (Latching)		Supervisory L		Alarms latch, Troubles restore.
22	Waterflow NonSilenceable	AMM	Waterflow NS	Same as ALARM but inhibits panel silence.	
23	Non-Reporting Actuator Latch	AMM	Non-Report	Activates group, but produces no other response.	Alarms latch
24	Non-Reporting Actuator Nlitch				
25	Non-Reporting Ion Nlitch	Ion			Alarms restore
26	Non-Reporting Photo Nlitch	Photo			
27	Ion Multilevel	Ion	Multilevel	Produces "Alert", "Action", or "Alarm" response depending on global %-of-alarm settings	
28	Photo Multilevel	Photo			
29	Signal Silence	AMM	Silence	Non-latching Produces the specified function	
30	Reset		Reset		
31	Drill		Fire Drill		
32	Alarm Acknowledge		Alrm Ack		
33	Trouble/Supv Acknowledge		Trbl/Supv Ack		
34	Tornado		Tornado		
35	End-Of-Line	AMM	EOL	Used for address M99 only	
36	Silenceable Signal	Signal AOM	(Output)	Produces "Short" indication	
37	Nonsilenceable Signal	Form C		No "Short" indication	
38	Silenceable Contacts				
39	Nonsilenceable Contacts	AOM			
40	User-Defined Device Types	AMM	Choice of Alarm, Supervisory NL, Tamper L, Waterflow NS	Per selected response	
49					

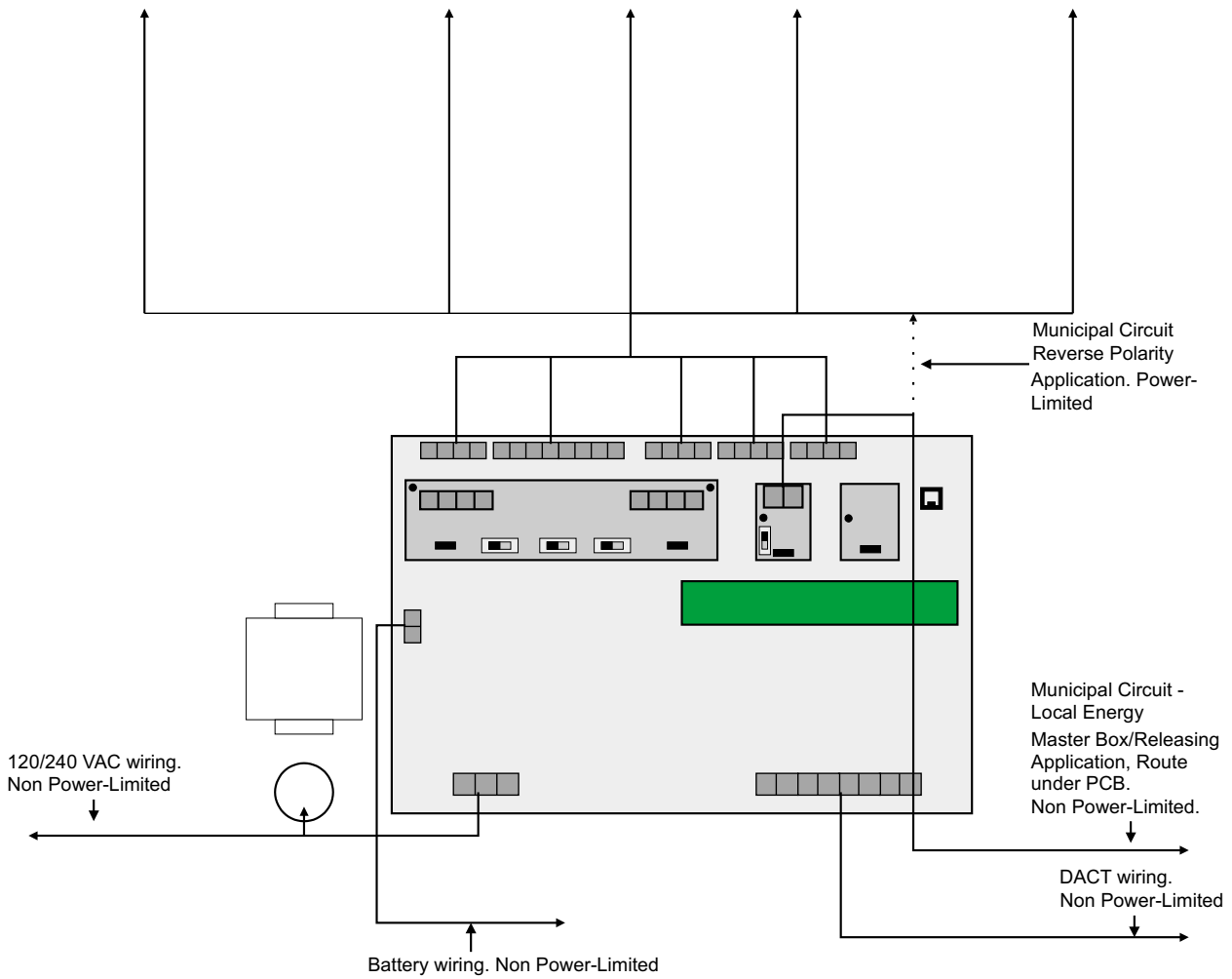


Typical Wiring - DRBC-1 to 7100



Knockouts for Non Power-Limited wiring.
 This includes 120/240 VAC, Batteries (if remote from enclosure, DACT (optional) and Municipal (optional) Wiring.

All Power-Limited Wiring



Power-limited and non power-limited circuit wiring must remain separated in the cabinet. All power-limited circuit wiring must remain at least 0.25" away from any non power-limited wiring. All power-limited and non power-limited wiring must enter and exit the cabinet through different knockouts and/or conduits.

Figure 4 Power-Limited/Non Power-Limited Wiring

