Installation, Operation and Maintenance Manual

cheetah®
Fike Protection Systems

Addressable Control System

Fike®
Protection Systems
Division Fike Corporation

Manual #06-148
Revision 2: 1/30/98

INTRODUCTION

Features

- Two addressable loops, expandable to four, meet NFPA style 4,6 and 7
- 127 devices per loop, system maximum 508 devices with SLM
- Interrupt driven, digital protocol for extremely fast and reliable communications
- Two 24Vdc, 2A NAC (bell) circuits on main board
- 5.0A useable power, expandable to 10.0A
- Operation from 120V, 208V, 240V or 24Vdc
- Two 24Vdc, 2A continuous auxiliary power outputs
- One 24Vdc, 2A resettable auxiliary power output
- 240 user defined zones
- Four levels of password protection
- 80 character, backlit LCD display
- Real time clock
- Three separate 600 event history files (all events, alarms only, by zone)
- Supports up to 65 Ah of batteries
- Critical process monitoring
- One man Walktest capability
- Auto device "learn" function
- Disable by point/circuit or zone
- Automatic day/night sensitivity adjustment
- Automatic holiday sensitivity adjustment
- Drill function at panel and remote
- Provides releasing operation
- Alarm verification
- Cross zone and counting zone programming
- Six abort types
- Completely faceplate programmable
- Extensive diagnostic menus

ADDRESSABLE DEVICES:

- Operates on interrupt driven, digital protocol. (max. 3s for 1st alarm)
- All devices maintain critical programming func tions in nonvolatile RAM
- Photo Detector
  - Adjustable for 0.8-3.5 % obscuration
  - Two pre-alarm settings
  - Drift compensation with maintenance alert
  - High air flow version (0-4000 fpm max)
- Ion detector
  - Two pre-alarm settings
  - Drift Compensation with maintenance alert
- Heat Detector
  - Adjustable 135 – 150 deg F
  - Two pre-alarm settings
- Dual Relay Module (R2M)
  - Two independently controlled 30Vdc, 2A SPDT relay contacts
  - User defined, logically (and/or) linked programming
- Releasing Module (SRM)
  - Provides solenoid or agent release output
  - Squib circuit is used to initiate ARM III's
  - 2A solenoid circuit capable of controlling 12Vdc or 24Vdc solenoids
  - Provides City tie function
- Output Module (SOM)
  - One 24Vdc, 2A NAC (bell) output circuit
  - Programmable pattern output, programmed in ¼ second increments
  - User defined, logically (and/or) linked programming
- Input Module (FRCM)
  - Two package designs, shrink wrapped and 4" plate
  - Multiple input functions including reset, acknowledge, silence, zone disable, manual release and abort
  - NO or NC contact monitoring

OPTIONAL DEVICES:

- Addressable device programmer for quick setting of device address
- Tracker pc configuration software
- Digital alarm communicator transmitter
- Reverse Polarity module
- Relay module
- Supplemental Loop Module adds two additional addressable loops
- Supplemental Power Supply adds 5.0A of useable power
- LED graphic compatible

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Notes:

1. Prior to and during handling of modules, follow anti-static rules per Appendix 6.
2. Systems using ARM-III modules (P/N 10-1832) also require 06-106 manual.

CHAPTER 1 System Overview

1.1 SYSTEM MODULES

The CHEETAH is available in multiple hardware configurations, depending on the input power source and enclosure color. Compatible input power sources are 120VAC, 208VAC, or 240 VAC. Battery selections are 7 A-H (Amp-Hours), 17 A-H, 33 A-H or 65 A-H. The 21.125" X 14.625" by 4.0" enclosure includes the transformer assembly and is available in red or gray.
Available system modules (or systems) to be ordered include:

10-2200	CHEETAH System Controller- CSC	
10-2201-p	Supplemental Power Supply- SPS	p: (1=120VAC, 2=208VAC or 240VAC)
10-2203	Supplemental Loop Module- SLM	
10-2204	Cheetah Relay Module- CRM4	
10-2254	Cheetah Reverse Polarity Module	
10-2260	485 to 232 Converter	
10-2217-c-p	Enclosure, with Transformer	c: (R=Red, G=gray) p: (1=120V, 2=208 or 240V)
10-2190-b	Battery Assembly, A-H selection	b: (1=7AH, 2 =17AH)
10-2154-c	33AH Battery Assembly & Enclosure	c: (R=Red, G=Gray)
10-2236-c	65AH Battery Assembly & Enclosure	c: (R=Red, G=Gray)
10-052-c-p	CHEETAH System, including Enclosure, CSC.	

For example, a red 120 volt system could be procured as 10-052-R-1.

1.2 ADDRESSABLE DEVICES

Available addressable devices to be ordered include:

55-019	FRCM	Fast Response Contact Monitor, mounted to 4" cover plate
55-020	FRCM	Fast Response Contact Monitor, shrink wrapped
55-021	SOM	Supervised Output Module
55-022	SRM	Solenoid Releasing Module
55-023	R2M	Dual Relay Module
63-1020	YBN-R/2NA	Base, 4", NS Sensor
63-1023	HSB-NSA-6	Base, 6", NS Sensor
60-1028	ATG-EA	Sensor, Thermal
63-1021	ALG-EA	Sensor, Photoelectric
67-1032	AIE-EA	Sensor, Ionization

1.3 FIKE RELEASE INTERFACE DEVICE

10-1832	ARM-III	Agent Release Module-III

1.4 FIKE PROGRAMMER

55-026	TCH-B100	Addressable Device Programmer
02-4464	Programmer Cable, 4 position (for 55-019, 55-021, 55-022, 55-023)	
02-4465	Programmer Cable, 2 wire (for 55-020)	

1.5 FIKE CONFIGURATION SOFTWARE

06-144	Cheetah Tracker

1.6 NOTIFICATION APPLIANCES

FIKE P/N	DESCRIPTION	24V CUR. (Amps)	MFG P/N	WORKS WITH MODULATION	AGENT LABEL P/N
20-110	Bell, 6" 92dBA @ 10'	0.03	MB-G6-24-R	N/A	N/A
20-111	Bell, 10" 92dBA @ 10'	0.03	MB-G10-24-R	N/A	N/A
C02-1244	Bell, 10" Explosion Proof Outdoor	0.5	CSXG10-24DC-R	N/A	N/A
C02-1338	Bell, 10" Explosion Proof Indoor	0.5	CSX10-24DC-R	N/A	N/A
20-089A	Strobe (15cd,non-sync)	0.05	RS-2415W-FR	NO	02-3977
20-091A	Strobe (15/75cd,non-sync)	0.065	RS-241575W-FR	NO	02-3977
20-091-SA	Strobe (15/75cd,sync/non-sync)	0.065	RSS-241575W-FR	NO	02-3977
20-093A	Strobe (75cd,sync/non-sync)	0.133	RSS-2475W-FR	NO	02-3977
20-095-FA	Strobe (110cd,sync/non-sync)	0.161	RSS-24110W-FR	NO	02-3977
C02-1245	Strobe, Explosion Proof	1.3-6	225XST-012-024R	NO	N/A
20-102	Horn-Multitone, Flush	0.048 max. (varies)	MT-12/24-R	YES	N/A
20-104	Horn-Multitone, 2 Input, Flush	0.048 max. (varies)	AMT-12/24-R	YES	N/A
20-117	Horn 12/24VDC	.013 max.	NH-12/24-R	N0	N/A
C02-1243	Horn, Explosion Proof	0.5	ASHX-24SMR	NO	N/A
20-096	Horn-Strobe (15cd)	0.122 max. (varies)	MT-24-LS-VNR	YES	02-4356
20-098	Horn-Strobe (15/75cd)	0.148 max. (varies)	MT-24-LSM-VNR	YES	02-4356
20-100	Horn-Strobe (75cd)	0.248 max. (varies)	MT-24-IS-VNR	YES	02-4356
20-118	Horn-Strobe (15/75cd)	0.091 max.	NS-241575W-FR	NO	02-4341
20-109	Synchronizer, Single	0.025	SM-12/24	N/A	N/A
20-119	Synchronizer, Dual	0.038	DSM-12/24	N/A	N/A
20-105A	Sync Horn Strobe(15cd)	0.064 0.072 0.087	AS2415W-FR	NO	02-3976
20-106A	Sync Horn Strobe(15/75cd)	0.077 0.083 0.102	AS241575W-FR	NO	02-3976
20-107A	Sync Horn Strobe(75cd)	0.149 0.156 0.177	AS2475W-FR	NO	02-3976
20-108A	Sync Horn Strobe(110cd)	0.177 0.183 0.202	AS24110W-FR	NO	02-3976

1.7 FACTORY MUTUAL APPROVED SOLENOIDS AND INITIATORS

If utilizing pre-action or deluge sprinkler operation, the following requirements must be met:

1) 90 hours of battery backup are required, refer to Appendix 3 – Cheetah Current and Battery Calculation form.
2) Signaling Line Circuits are to be wired Class A (Style 6), refer to wiring diagram 14.1.4, Style 6.

The following solenoids are FM approved for pre-action and deluge sprinkler action. The maximum allowed wire resistance for the solenoids is 1.0 ohm.

Compatible Solenoids:

Manufacturer	Manufacturer's Part Number	Voltage	Current
Skinner	LV2LBX25	24V	0.458A
Skinner	73218BN4UNLVNOC111C2	24V	0.458A
Skinner	X5H65100 12Volt	12V	0.800A
Skinner	X5H65100 24Volt	24V	0.400A
ASCO	T8210A107	24V	0.700A
ASCO	R8210A107	24V	0.700A
ASCO	8210A107	24V	0.700A
ASCO	8210G107	24V	0.440A

Compatible Initiators with Fike Agent Release Module 10-1832:

Part Number	Description
70-1651	Gas Cartridge Actuator
70-1058	Initiator Assy, E106 type
70-1336	Initiator Assy, E1A-8 type

1.8 FIKE DIGITAL ALARM COMMUNICATOR TRANSMITTER

10-2256 Digital Alarm Communicator Transmitter (DACT)
10-2257 DACT Programmer / Annunciator
10-2258 DACT Interface Cable
10-2259 Configuration Modem
06-151 Configuration Software, DACT

1.9 SPECIAL NOTES

This section covers special notes and items of interest pertaining to installing and programming a Cheetah control panel. Although these notes may appear in other places in this manual, due to their importance, they are presented here as a reminder:

1. It is Fike's intention to have all specifications correct and matching throughout this document, however, errors may occur. Specifications found in chapter 13 of this document override any conflicting specifications that may be found in other places within this document.

2. The index positions and opcodes used to program the SOM's present a powerful programming tool. If used correctly they give the Cheetah a great amount of system flexibility, if used incorrectly they can be a source of programming difficulty. When using opcodes 1,2 and 3 (and/or functions) ONLY use these functions to link adjacent index positions. CORRECT: index position 2 "or" index position 3. Do not use opcodes to link index positions which are not adjacent to each other or to create a series of logically connected index positions. INCORRECT: index position 2 "and" index position 5. INCORRECT: index position 2 "or" index position 3 "or" index position 4.

3. Opcodes may be used to link adjacent index positions for the R2M as described above for the SOM. The R2M is a latching device, once a relay is turned "on" it will not restore to normal condition until the Cheetah panel has been "reset".

4. When experiencing "configuration faults" try using the "To Dev" function to correct them. Down-loading of configurations to addressable devices, especially SOM's, takes several seconds for each device. If this download is interrupted or corrupted, the complete configuration may not have been received by the device(s) resulting in configuration mismatches between the panel and device(s).

5. This manual and faceplate programming makes reference to a WMST or Watermist function. This feature was added as a development tool and associated hardware is not yet available.

6. When a new photo or ion smoke detector is added to a Cheetah communication loop or anytime detector(s) change address(es), the "calibrate sensitivity" function must be used. This allows the Cheetah to correctly calibrate the detector(s) for alarm level.

7. When using the "learn" function, default values are programmed for each device configured. If a device has been custom programmed, and the "learn" function is used, the device will be reprogrammed with default values.

8. Cheetah Relay Module (10-2204) relays may energize for a few milliseconds on power up. For non-resettable type devices, be aware that this could occur on power up or power down. Use a discon-nect/disable switch with the CRM4 or an R2M when controlling non-resettable type devices.

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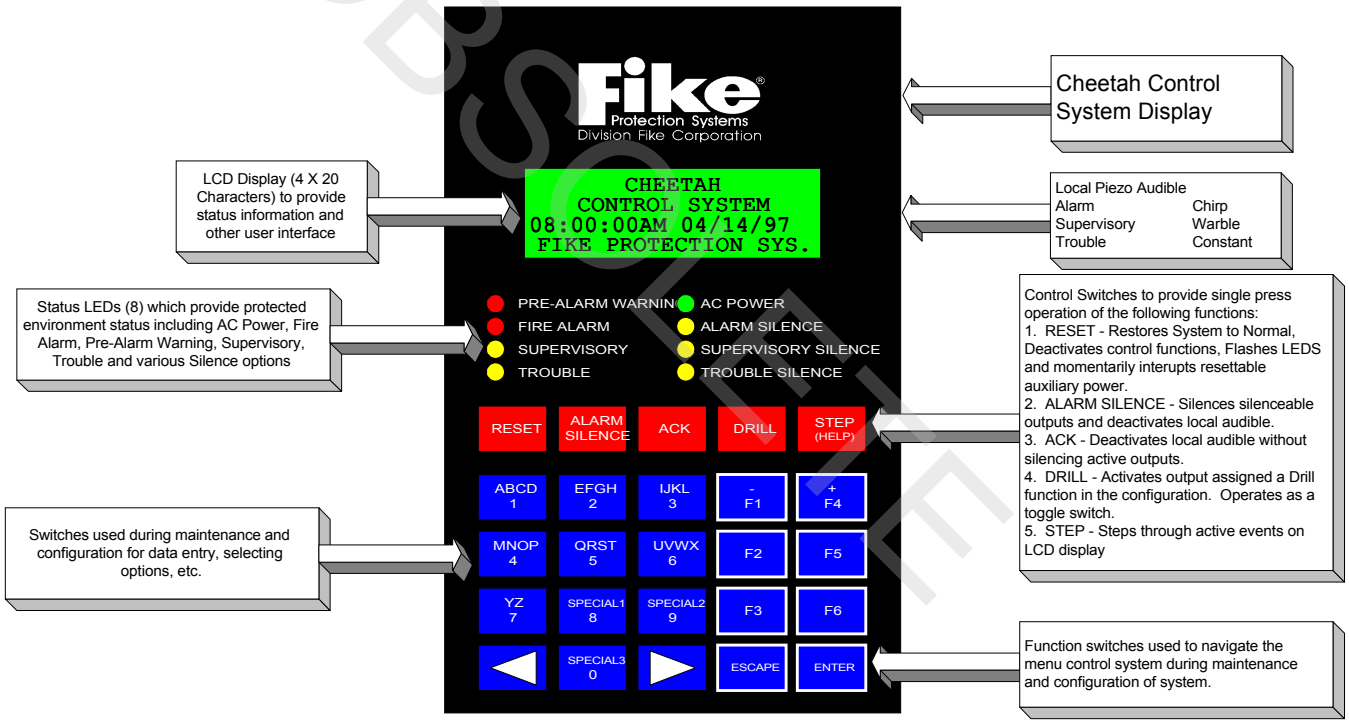
CHAPTER 2

2.1 FUNCTIONAL DESCRIPTION

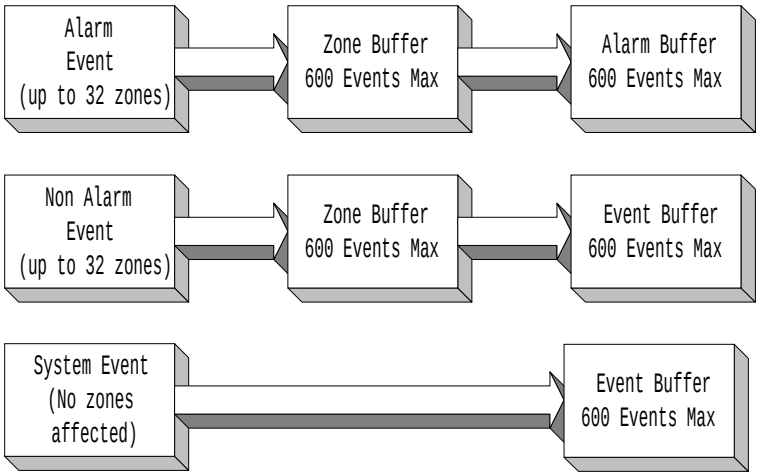
The Cheetah Control System consists of a Cheetah System Controller, a power supply and an enclosure. The controller provides two signalling line circuits capable of supporting 127 intelligent devices, two notification appliance circuits and three dedicated relays for alarm, trouble and supervisory notification. The controller also provides an 80 character display and user interface to operate and configure the system. The power supply provides 5.0 amps of usable power with either 120 VAC or 208/240 VAC incoming AC power. The power supply is also capable of charging up to 65 AH batteries. Optional modules can be added to increase intelligent device capacity to 508 total, increase total power supply to 10.0 A total and optional eight programmable relays.

2.2 SYSTEM FEATURES

2.2.1 User Interface



2.2.2 History Buffer



The Cheetah Control System maintains three distinct history buffers plus a current event list to segregate the events for easy viewing and interpretation of the system status. Each event can be broken into three categories: Alarms, Non-Alarms and System Events. An alarm event is recorded in the Zone Buffer for all assigned zone and the Alarm buffer. A non-alarm event, such as a trouble or supervisory, is recorded in the Zone Buffer for all assigned zones and the Event buffer. System events like Reset, Disable and Configuration changes are stored in the event buffer only.

2.2.3 Password Control

The Cheetah Control System uses password levels to control access to various programming options to prevent accidental or unauthorized modification of important system operating parameters or the user defined configuration. Four levels of access with up to 16 users per access level are used in the Cheetah Control System:

Basic Operations (Level 1) – Allows access to Control Switches (Reset, Alarm Silence, Ack, Drill and Step), Display History, View Device operating parameters and Change Time/Date.

Enable/Disable Functions (Level 2) – Allows user to manually disable and enable devices, circuits or zones, and Change Device Sensitivity.

System Configuration (Level 3) – Allows user to change the system configuration.

System Administrator (Level 4) – Allows editing of passwords and special functions.

The lock on the enclosure controls access to Basic Operations (Level 1). Once the door is open, all Basic Operation functions are available. All other access levels require a password, which is entered on the Cheetah Control System. Up to 16 different passwords can be assigned to levels 2 & 3 to further define the individuals accessing the system. If all the passwords are forgotten or lost, contact Fike Protection Systems to access the menu system.

2.2.4 Menu System

All system functions and configuration can be accomplished from the display unit with use of a personal computer by a Menu Control System. The Menu Control System is segregated into 6 basic categories. Each category is briefly described below:

History – Allows viewing and erasing the various history buffers available with the Cheetah Control System.

Password - Used to enter a password to obtain access to additional functions.

Special – Access to system diagnostics, Walk test function, Set Time/Date, Current device operating parameters and sensor sensitivity adjustment.

Enable / Disable – Access to enabling and disable function for devices, circuits and zones.

Configuration – Access to custom system configuration.

2.2.5 System Operational Features

Pre-Alarm Warning for Sensors – Two levels of adjustable pre-alarm levels with programmable outputs to provide early warning of potential emergency conditions.

Automatic Day/Night Sensitivity Adjustment – Up to 16 time zones for automatic sensitivity changes based upon the time and day. Includes a Holiday schedule to adjust for Holidays.

Automatic Sensor Sensitivity Setting to meet NFPA 72 detector testing requirements

Various detection types -

- Alarm only zones with or without alarm verification delay
- Counting Zone Release: any two addresses will release zone
- Cross Zone Release: an odd and even address is required to release zone
- Single Sensor Release

Abort Types - Six different abort types to meet a wide range of applications. Abort types are selected by zone allowing multiple abort types on a single system.

Custom Message (20 Characters) for each device

Flexible control function programming – Allows control function programming using prioritization, AND/OR functions, multi-zoning, and various modulating output selections.

Drift Compensation for Analog Sensors – The system can automatically compensate for changes in the environment including accumulation of dust on the sensor and changes in the protected environment.

Walk Test – Allows functional testing of the system without requiring an operator at the control panel. Optional Notification Appliance testing option allow functional testing of custom configuration.

System Learn Mode – The system can automatically configure devices on the Signaling Line Circuits, requiring less programming time than traditional analog systems.

2.2.6 Power Supply

Integral 24VDC nominal power supply provides 5.0A in alarm, 1.0A in quiescent.

Selectable 120VAC, 208VAC or 240VAC incoming AC power at 50 or 60 hertz.

Resettable or continuous auxiliary power

Capable of charging up to 65AH batteries.

Additional Supplemental Power Supply doubles power (alarm and quiescent) and battery charging capacity.

2.2.7 Notification Appliance Circuits

Each Cheetah Control System has two integrated notification appliance circuits on board. Each circuit is rated for 2.0 amps @ 24 VDC and is power limited. Each circuit is individually configured and can be assigned to up to 240 zones.

2.2.8 Relay Outputs

Each Cheetah Control System is equipped with three dedicated SPDT relays rated for 2.0 amps @ 30 VDC or 110 VAC, 0.5A. These relays are dedicated to activate upon alarm, trouble or supervisory conditions at the control system. Trouble relay operates in fail-safe mode.

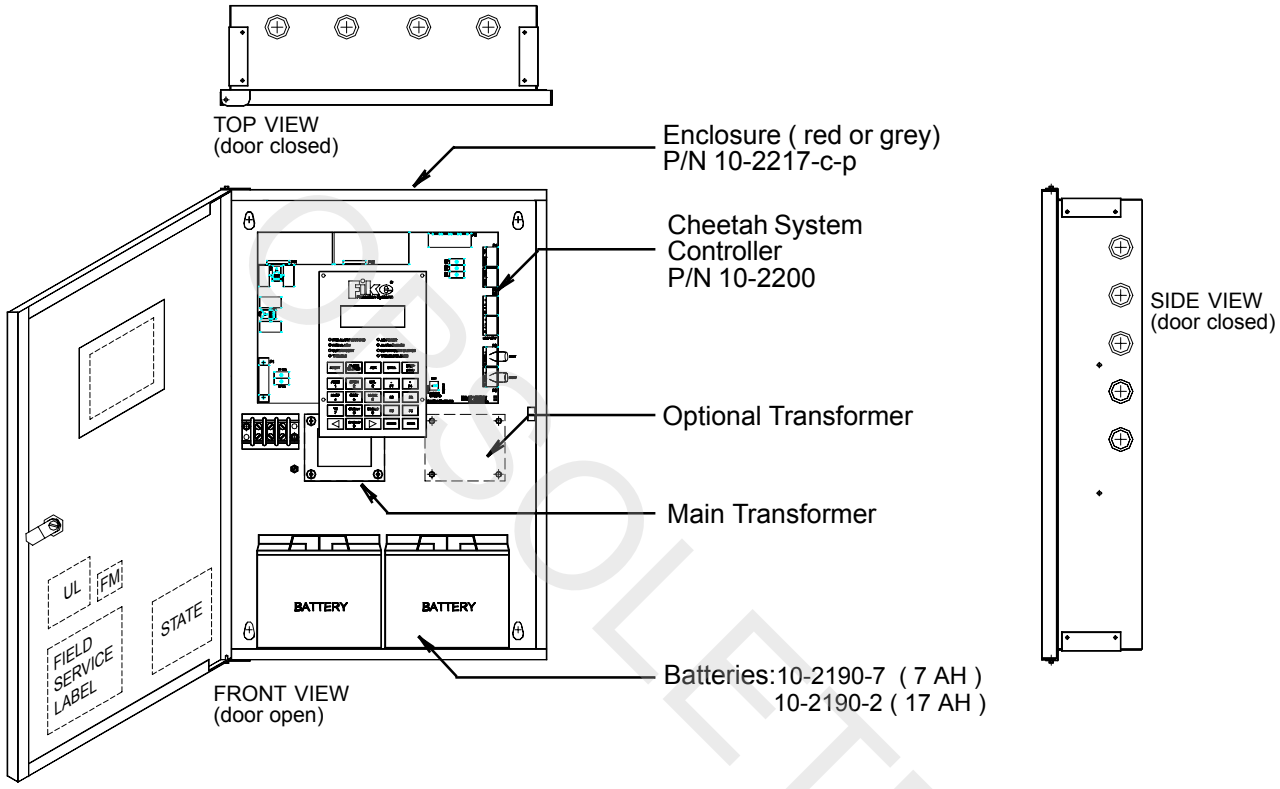
2.2.9 Signaling Line Circuits

Each Cheetah Control System is equipped with two signaling line circuits. Each circuit can communicate and control up to 127 devices each, for a total of 254 devices on the basic system. The circuits use a pure digital, interrupt driven protocol to improve response times while maintaining a high level of reliability. Any combination of sensors and modules can be used on each circuit.

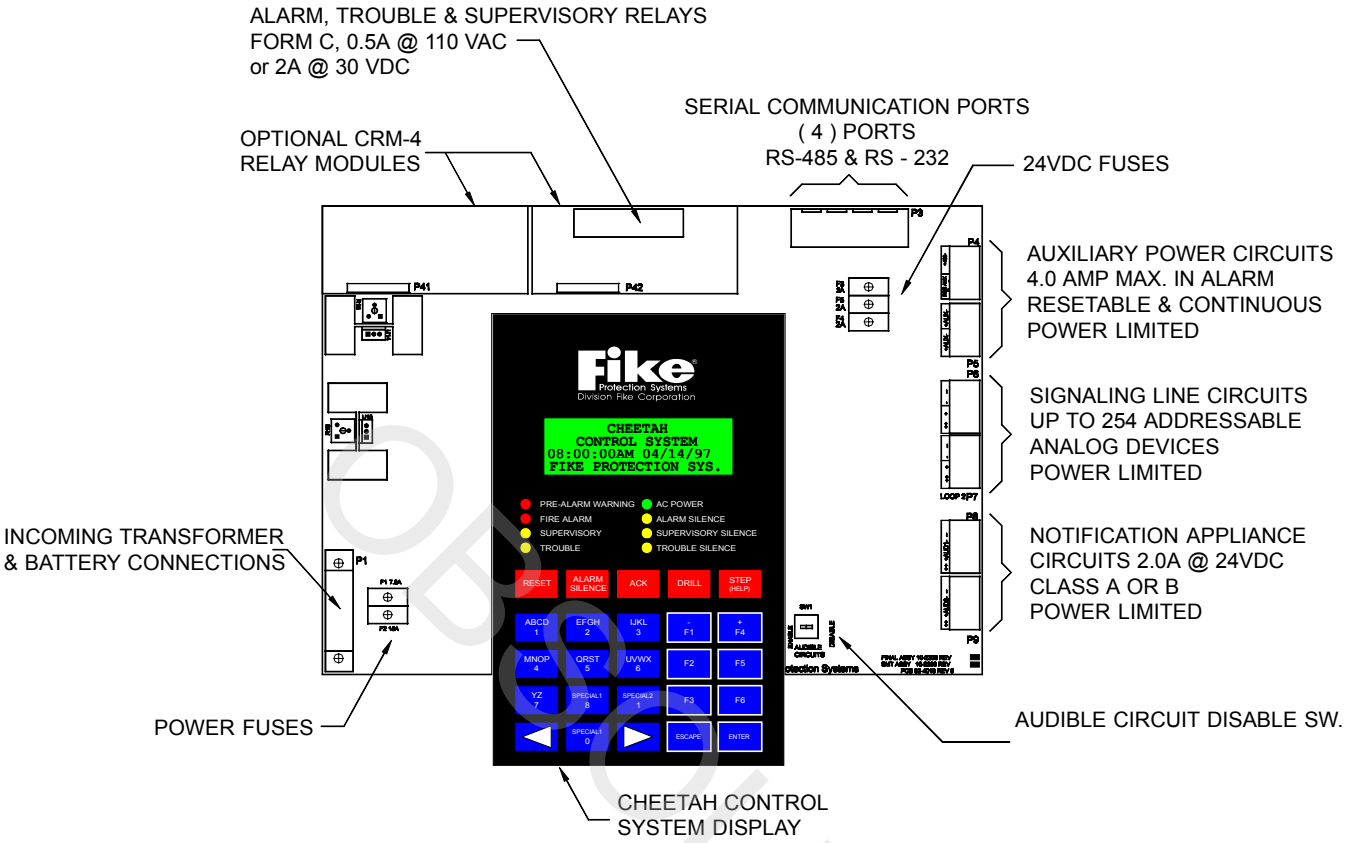
CHAPTER 3 System Modules and Addressable Device

3.1. CHEETAH CONTROL SYSTEM, (CSC)

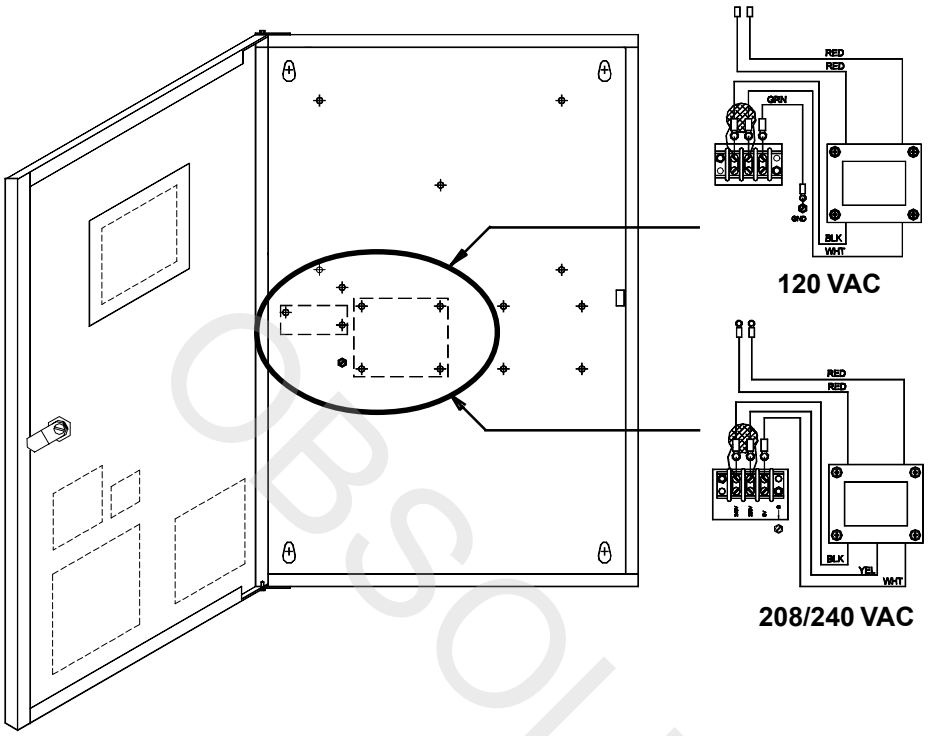
P/N 10-052-c-p



3.2 CHEETAH SYSTEM CONTROLLER, (CSC) P/N 10-2200



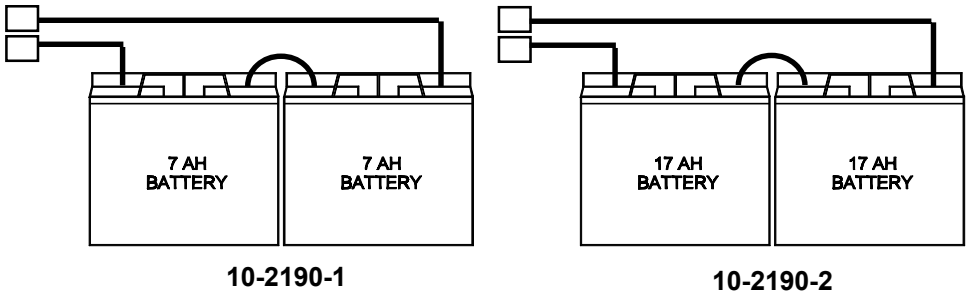
3.3 ENCLOSURE WITH TRANSFORMER P/N 10-2217-c-p



3.4 BATTERY ASSEMBLY P/N 10-2190-b

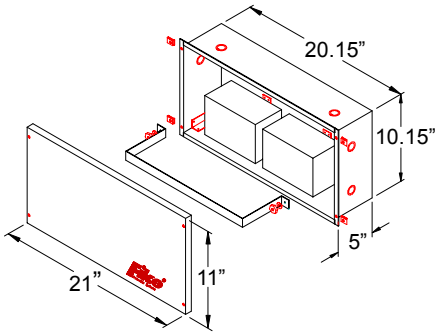
These assemblies are separately ordered battery pairs. Each consists of two 12 volt batteries and all necessary wiring interconnections.

B: (1 = 7AH , 2 = 17AH)



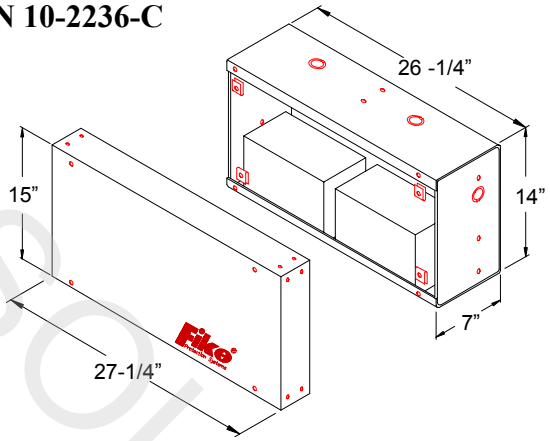
3.5 33AH BATTERY ASSEMBLY P/N 10-2154-C

This battery assembly includes a set of 33AH batteries with enclosure.



3.6 65AH BATTERY ASSEMBLY P/N 10-2236-C

This battery assembly includes a set of 65AH batteries with enclosure.



3.7 ANALOG PHOTOELECTRIC SENSOR P/N 63-1021

The photoelectric sensor offers a unique chamber design which provides better response to a wider range of applications. These intelligent sensors use an interupt-driven intelligent protocol to increase responsiveness and reliability. These sensors use a dual point calibration routine to increase accuracy of sensor readings and use non-volatile RAM to store pertinent operating parameters.

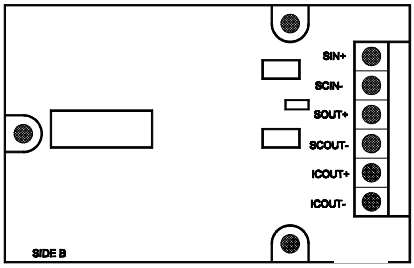
3.8 ANALOG IONIZATION SENSOR P/N 67-1032

The low profile analog sensor uses a interupt-driven digital protocol to ensure fast reliable communications. These sensors use non-volatile RAM to maintain important operating parameters.

3.9 ANALOG THERMAL SENSOR P/N 60-1028

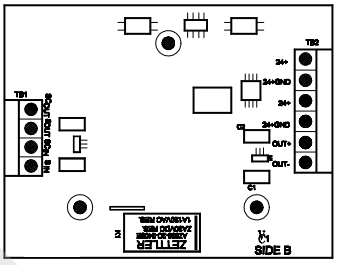
The low profile analog sensor uses an interrupt-driven digital protocol to ensure fast reliable communications. The alarm threshold for the sensor is adjustable at the control panel. These sensors use non-volatile RAM to maintain important operating parameters.

3.10 FAST RESPONSE CONTACT MODULE, (FRCM) P/N 55-019, 55-020



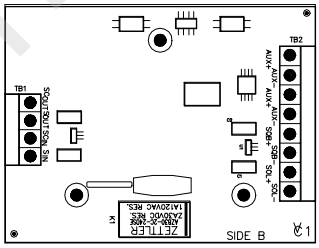
The Fast Response Contact Module (FRCM) is used to monitor the status of dry contacts for a wide range of applications. The module uses an interrupt driven digital protocol to ensure reliable operation. FRCM's come in two different styles depending on the application.

3.11 SUPERVISED OUTPUT MODULE, (SOM) P/N 55-021



The Supervised Output Module (SOM) is used to operate notification appliances. The SOM provides one, Class B circuit rated for 2.0 amps @ 24 VDC. The SOM maintains important operating parameters in nonvolatile RAM to ensure fast reliable operations.

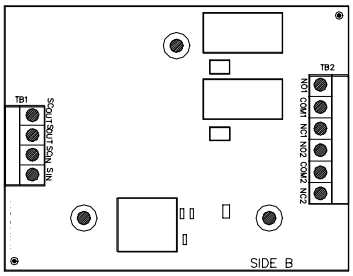
3.12 SOLENOID RELEASING MODULE (SRM) P/N 55-022



The Solenoid Releasing Module (SRM) operates a wide variety of suppression systems including, Clean Agent, Carbon Dioxide, Watermist and Sprinkler Pre-action. The SRM can operate solenoids rated up to 2.0 amps @ 24 VDC or 12 VDC, or up to 6 Agent Release Modules. The SRM maintains important operating parameters in non-volatile RAM to ensure fast reliable operations. The SRM can also be programmed for City Tie Service. (NFPA 72 auxiliary)

3.13 DUAL RELAY MODULE (R2M) P/N 55-023

The Dual Relay Module, (R2M) provides two independently configured SPDT relays rated for 2 amp @ 24 VDC. The R2M maintains important operating parameters in non-volatile RAM to ensure fast reliable operations.



CHAPTER 4 Operations

4.1 ALARM, SUPERVERISORY & TROUBLE STATUS LED's

EVENT	LED	PIEZO
Upon supervisory alarm or trouble	Flashes (2 rep/sec)	On
Upon silence or acknowledge	Steady	Off
Upon event recurrence	Flashes (2 rep/sec)	On

Piezo operation is: {Alarm Events: Chirp} {Supervisory: Warble} {Trouble: On steady}
Piezo priority is in same order; alarm events over supervisory events over trouble events.

4.2 LOW POWER CONDITIONS

System will register brown-out trouble if AC voltage is less than approximately 85% of rating. Battery power is enabled upon AC trouble or Alarm. When AC power is missing and the batteries have been depleted to a low voltage condition, (typically less than 21 VDC) the system will cease operations. Cease operations means the LCD will record SYSTEM POWER LOW, OPERATION HAS CEASED and all analog loops will cease polling. Outputs previously activated can continue to operate as long as enough power is available. The system will restore from this condition when commercial power is re-applied and the system is reset or the input voltage rises to 24 VDC, where SYSTEM POWER OK OPERATION RESTORED is recorded.

4.3 TROUBLE EVENT OPERATION

There are a few troubles that are latching, refer to Appendix 2 Messages. All other troubles are non-latching (upon restoration to a normal condition). The system returns to the SYSTEM MESSAGE screen in approximately 1.5 minutes if all troubles are non-latching and all have cleared.

Upon system, circuit, or device trouble, the system enters trouble state. Typical response includes:

Piezo:	Steady ON until ACKnowledged or silenced.
Trouble LED:	Flash until ACKnowledged or silenced.
Display LCD:	Displays information pertinent to event - trouble type, device/circuit custom message, zone custom message, time and date of event.
Trouble Relay(s):	Activate. (this relay is normally energized and will de-energize)
Trouble Audible(s):	Activate until silenced.

Trouble events are silenced with ALARM SILENCE (key) button. The trouble is recorded in the CURRENT, EVENT, and ZONE history buffers. If the trouble is non-latching and it clears, a trouble clear event will also be recorded. If a non-latching trouble event clears and no other events are present, the system turns off related outputs, piezos, trouble LED, and returns to the SYSTEM MESSAGE screen.

4.4 PRE-ALARM AND ALARM OPERATION

The Pre-Alarm state is not recorded until a device has been polled with 4 consecutive polls above its pre-alarm threshold. Upon the first sensor meeting its configured Pre-Alarm 1 threshold, system enters **pre-alarm 1** state. Typical response includes:

Piezo:	Chirp (On & Off pattern) until ACKnowledged or silenced.
Pre-Alarm Warning LED:	Flash. After ACKnowledge or silence, illuminate steady.
Display LCD:	Displays information pertinent to pre-alarm event - pre-alarm type, device custom message, zone custom message, time and date of event and current alarm % obscuration.
Pre-Alarm1 Relay(s):	Activate until silenced.
Pre-Alarm1 Audible(s):	Activate until silenced.
Sensor LED:	Remains flashing as during normal polling.

If the pre-alarm 1 condition clears, a pre-alarm restore event will be recorded and the system will turn off outputs, piezo, Pre-Alarm warning LED and return to the SYSTEM MESSAGE screen if no other events are present.

Upon the first sensor meeting its configured Pre-Alarm 2 threshold, system enters **pre-alarm 2** state. Typical response includes:

Piezo:	Chirp (On & Off pattern) until ACKnowledged or silenced.
Pre-Alarm Warning LED:	Flash. After ACKnowledge or silence, illuminate steady.
Display LCD:	Displays information pertinent to pre-alarm event - pre-alarm type, device custom message, zone custom message, time and date of event and current alarm % obscuration
Pre-Alarm 2 Relay(s):	Activate. Pre-Alarm 1 relays remain active or activate if silenced.
Pre-Alarm 2 Audible(s):	Activate until silenced. Pre-Alarm 1 audibles remain active or activate if silenced.
Sensor LED:	Remains flashing as during normal polling

If the pre-alarm 2 condition clears, a pre-alarm restore event will be recorded and the system will turn off outputs, piezo, Pre-Alarm warning LED and return to the SYSTEM MESSAGE screen (turning off outputs) if no other events are present.

Upon the first sensor meeting its configured Alarm threshold, manual pull or waterflow is activated, system enters **alarm** state. Typical response includes:

Piezo:	Chirp (On & Off pattern) until ACKnowledged or silenced.
Fire Alarm LED:	Flash. After ACKnowledge or silence, illuminate steady.
Display LCD:	Displays information pertinent to alarm event - alarm type, device/circuit customer message, time and date of event.
Alarm Relay(s):	Activate. Pre-Alarm relays remain active if from sensor alarm or activate if silenced.
Alarm Audible(s):	Activate until silenced. Pre-Alarm audibles remain active if from sensor alarm or activate if silenced.
Sensor LED:	Turns on steady to indicate source of alarm.

The alarm event is latching and requires operator intervention to clear the alarm. Pre-Alarm audibles and relays also remain latched after an alarm occurs.

4.5 PRE-DISCHARGE, RELEASE AND ABORT OPERATION

If the zone is a suppression zone, upon alarm of a second sensor meeting the cross-zone or counting zone detection criteria (or alarm of the first Single Sensor Release sensor), system enters **predischarge** state. Typical response changes to:

Piezo:	Chirp (On & Off pattern) until ACKnowledged or silenced.
Fire Alarm LED:	Flash. After ACKnowledge or silence, illuminate steady.
Display LCD:	Displays zone information of pending release - countdown, abort status, etc.
Predischarge Relay(s):	Activate. Pre-Alarm and alarm relay(s) also remain active.
Predischarge Audible(s):	Activate until silenced. Pre-Alarm and alarm audible(s) also remain active.

Upon completion of predischarge countdown (or activation of a manual release), system enters **release** state. Typical response changes to:

Piezo:	Chirp (On & Off pattern) until ACKnowledged or silenced.
Fire Alarm LED:	Flash. After ACKnowledge or silence, illuminate steady.
Display LCD:	Displays zone information of released zone.
Release Relay(s):	Activate. Pre-Alarm, alarm, & predischarge relay(s) also remain active, if from sensor. Activation of manual release causes alarm and predischarge relays to activate.
Release Audible(s):	Activate until silenced. Pre-Alarm, alarm & predischarge audibles also remain active, if from sensor. Activation of manual release causes alarm and predischarge audibles to activate.
Release Circuit(s):	Activate Agent Release or Solenoid circuit.

The Manual Release, Predischarge, and Release events are latching and require operator intervention to clear the events. Predischarge and Release outputs are silenceable with the ALARM SILENCE button, located on the display. The Manual Release event is recorded in the CURRENT and ALARM history buffers. The Predischarge, and Release events are recorded in the CURRENT and ZONE history buffers.

Upon activation of the Abort Switch during an invalid abort time, the system records the abort as a trouble event and activates appropriate abort outputs. While activated during a valid abort time, typical system response includes:

Piezo:	Chirp (On & Off pattern) until ACKnowledged.
Fire Alarm LED:	Flash. After ACKnowledge, illuminate steady.
Display LCD:	Shows zone information indicating Abort activation.
Abort Relay(s):	Activate while Abort is held. (Nonlatching)
Abort Audible(s):	Activate while Abort is held. (Nonlatching)
LCD Count-down timer:	Modified (or paused) per abort type description.
Predischarge audible(s):	Silence if programmed for silence on Abort. Unsilenced upon deactivation of abort switch, if pertinent.

The abort output is non-silenceable. The abort event is non-latching and the abort ouputs will toggle with the status of the input. The valid abort event (and the abort restore) is recorded in the CURRENT, ALARM, and ZONE buffers. The invalid abort event is recorded in the CURRENT, EVENT, and ZONE BUFFERS.

4.6 WATERFLOW OPERATION

Upon waterflow input activation, system enters **alarm** state. (See Alarm State operation)
Waterflow input is latching.

4.7 SUPERVISORY OPERATION

Upon activation of a supervisory input, system enters **supervisory** state. Typical response includes:

Piezo:	Warble (On & Off pattern) until ACKnowledged or silenced.
Supervisory LED:	Flash. After ACKnowledge or silencing, illuminate steady.
Display LCD:	Displays information pertinent to supervisory - device/circuit custom message, time and date of event.
Supervisory Relay(s):	Activate until silenced, while supervisory input is active. (Non-latching)
Supervisory Audible(s):	Activate until silenced while supervisory input active.(Non-latching)

Supervisory outputs are silenceable with Alarm Silence button. Supervisory events are recorded in CURRENT, EVENT, and ZONE history buffers. If supervisory event clears and no other events are present, the system turns off outputs, piezo and LED and returns to the SYSTEM MESSAGE screen. Supervisory inputs may be programmed latching or non-latching.

4.8 CRITICAL PROCESS MANAGEMENT OPERATION

Upon activation of a process input, system enters **critical process management** state. Typical response includes:

Piezo:	Off.
Display LCD:	Displays information pertinent to process operation - device/circuit custom message, time and date of event.
Process Relay(s):	Activate while process input is active. (Non-latching)
Process Audible(s):	Activate until silenced while process input is active.(Non-latching)

Process events are not silenceable. Critical Process Management events are logged in CURRENT, EVENT, and ZONE history buffers. If process event clears and no other events are present, the system turns off outputs and returns to the SYSTEM MESSAGE screen.

The Cheetah system is capable of providing annunciation of both critical and non-critical process management. Critical process management is intended to monitor a process, which, if out of control, would result in life or property loss. Critical process management annunciation is intended to evacuate the hazardous area. Evacuation notice is accomplished by audible and visual appliances configured to activate during a process management input to the Cheetah. An example of critical process management would be to have boiler over-pressure safeties monitored by an addressable input to the Cheetah. Upon activation of the safeties, the Cheetah system would provide audible/visual evacuation notice.

Non-critical process management is designed to notify personnel of a non-life or non-property hazard which has exceeded its limits. Non-critical process management only requires notification of the condition which could be a trouble condition annunciated at the panel or transfer of a relay contact. An example of non-critical process management would be to have a freezer temperature monitored by an addressable input to the Cheetah. If the temperature exceeded its limits, notification could be provided by the Cheetah system.

4.9 DRILL EVENT OPERATION

Upon activation of a drill input, or the drill button on the display, system enters **drill** state. Typical response includes:

Piezo: Warble (On & Off pattern) until ACKnowledged.
Display LCD: Displays information pertinent to drill operation - device/circuit custom message, time and date of event.
Drill Relay(s): Activate while drill input is active. (Non-latching)
Drill Audible(s): Activate while drill input is active.(Non-latching)

Drill outputs are not silenceable. Drill events are logged in CURRENT, EVENT, and ZONE history buffers. If drill event clears and no other events are present, the system turns off outputs and piezo and returns to the SYSTEM MESSAGE screen. Note: the drill button on the display acts as a toggle switch; press once to activate all zone drill, press again to de-activate (restore).

4.10 WALKTEST OPERATION

Upon activation of walktest (from Special menu P4) system enters **walktest** state. Typical response includes:

Piezo: ON until ACKnowledged or silenced.
Trouble LED: Flash. After ACKnowledge or silencing, illuminate steady.
Display LCD: Displays information pertinent to walktest operation - walktest active, time and date of event.
All Zone Trouble Relay(s): Activate while walktest is active. (Non-latching)
All Zone Trouble Audible(s): Activate until silenced while walktest is active.(Non-latching)

The walktest is a means to test portions of the system without unneeded disturbance to people in other areas of the system. The walk-test is a toggle mode, it is either off or on. While on, the system accepts normal alarm events and responds by recording the events and activating output devices which may or may not be configured to respond to walktest events per these rules:

SOM: Individually configured to respond to walktest events.
R2M: Individually configured to respond to walktest events.
SRM: Does NOT respond to walktest events.
AUD1&AUD2: Automatically responds to walktest events.
RELAYS: Automatically responds to walktest events.

The output will turn on for one pattern (or 4 seconds) to test the device. The walktest will be active for the pre-programmed time-out (10-30 minutes, selectable in 1 minute increments) as displayed on the walktest screen. The walktest will remain active until a reset or a walktest timeout. If the walktest is completed with a time-out and no other events are present, the system returns to the SYSTEM MESSAGE screen. Walktest events are recorded in CURRENT and EVENT history buffers.

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CHAPTER 5 System Configuring

5.1 GENERAL INFORMATION

System programming is accomplished by either using the key pad on the panel or down loading a configuration from the Cheetah Tracker program. To minimize system down time the initiating and indicating circuits remain active during system setup and programming. This section will cover the procedure and selections given while programming the configuration portion on the system. Here is a breakdown of the programming categories:

CONFIG:

- Devices: None, Photo, Ion, Heat, FRCM, SRM, SOM, R2M
- Zones: Type of Zone, Time delays
- System
  - I/O: Output, Loopckt, Powerin
  - Message: System Message Screen
  - Patterns: 15 selections
  - Time Group: 15 selections
- Learn: Loop and Address to look for devices
- To Device
  - All Dev
  - Mod Dev
  - Range
  - Show Mod
- Special
  - Calibrate Sensitivity
  - Time Out, Password
  - Error Checking
  - Device address
  - Calibration Time
  - PC TR CC

5.2 PROGRAMMING TERMINOLOGY AND SETUP

Before programming the controller and field devices, there are a few concepts and tables that you must use and understand.

5.2.1 Index Positions

The addressable devices have 16 unique index positions which define the device's operational characteristics. Each index position allows selection of these six parameters.

* State of operation	(Alarm, Pre-discharge, abort, etc.)
* Zone of operation	(Or selection of multi-zone table)
* Pattern pointer	To define audible output pattern.
* Priority opcode	To override index position number priority.
* Silenceable bit	To define whether index position is silenceable.
* Resounding bit	To define whether index position allows resounding.

The lowest priority is index position 0 and the highest is index position 15. For a device to respond to only one state (such as alarm), program that state into index position # 0 and do not use the other index positions. For the device to also respond during predischarge, program predischarge into index position # 1.

The device typically "operates" in the highest index position that has occurred. The device in the above example operates in index position #0 during alarm and index position #1 during predischarge (assuming appropriate zone selection).

5.2.2 States

One state of operation must be selected for each index position used. Available states include:

None:	None	PROC:	Process Management
TRB:	Trouble	SUPR:	Supervisory
DRILL:	Drill	ABRT:	Abort
PAL1:	Pre-alarm 1 level	PAL2:	Pre-alarm 2 level
ALRM:	Alarm level (active upon immediate manual release)		
PRED:	Pre discharge (active upon immediate manual release)		
RELE:	Release		
WMST:	Watermist		

* A process management input activates only a process management output.

5.2.3 Zones

One Zone of operation must be selected for each index position. For example setup could be:

Index Position # 1	(Alarm, Zone 3)
Index Position # 2	(Alarm, Zone 5)
Index Position # 3	(Alarm, Zone 7)
Index Position # 4	(Release, Zone 5)

Zone allocations:

1-240 Available for typical output module selection.

241-253 Not available

251-252 Internal organizational zones. Not user selected

- 251 Non zone specific trouble
- 252 Special panel zone

253 Board level events: Gnd Fault, Loss of AC, Battery trouble, ect....

254 Multi-Zone table, a different table for each device.
Selecting zone 254 in an index position enables use of the multi-zone table which allows individual selection of zones from 1-240. Each device can be configured with its own unique multi-zone table. The above example would also be configured as:

Index Position # 1	(Alarm, Zone 254) Press F2 to Device Multi-zone (Select Zone 3, 5 & 7)
Index Position # 2	(Release, Zone 5)
Multi-zone Tabl:	(Select zones 3, 5 & 7)

255 All zone selection, used with output devices only.

5.2.4 Priority Opcode

Each used index position requires selection of priority opcode from values 0-3. Opcode 0 is typically used. It defines priority of the index positions in increasing numeric order per above: the highest numbered index position is the active position. The priority op-codes are defined as:

0:	Default	Normal priority operation per increasing index position order.
1:	OR	To annunciate most recent of this and next index positions.
2:	AND-end	Requires this and previous index position to be active prior to annunciation. Uses the pattern of this index.
3:	AND-start	To start a sequence of adjacent AND opcodes.

The Opcode gives equal priority to two or more adjacent index positions so the most recent of the "OR-ed" index positions is annunciated. An example would be:

Index Position	State	Zone	Pattern	Op-Code	Note
# 1	Supervisory	5	03-March	0-Normal	
# 2	Alarm	7	05-Custom	1- OR	Guard Station 1
# 3	Alarm	9	06-Custom	0-Normal	Guard Station 2
# 4	Release	12	01-Steady	0-Normal	

Prior to zone 12 release, Pattern 04 or 05 is annunciated depending if station 1 or 2 was the most recent alarm condition.
Upon zone 12 release, the device operated in index position # 4 as it is not logically "Or-ed" with the others.

The AND Opcode requires two or more adjacent index positions to all be active prior to event annunciation. An example would be:

Index Position	State	Zone	Pattern	Op-Code	Note
# 1	Supervisory	5	03-March	0-Normal	
# 2	Alarm	7	05-Custom	3-And(start)	Guard Station 1
# 3	Alarm	9	06-Custom	2-And(end)	Guard Station 2
# 4	Release	12	01-Steady	0-Normal	

Prior to zone 12 release, Pattern 05 is annunciated if both Gaurd Station 1 (zone 7 and Guard Station 2 (zone 9) had active alarm conditions. Upon zone 12 release, pattern 01 is annunciatied.

Index positions and Opcode are a powerful programming tool. If used correctly they give the Cheetah a great amount of system flexibility. If used incorrectly, they can be a source of programming difficulty.

5.2.5 Silence Selection

Each used index position requires setting the silencable to Y(Yes) or N(No). This enables operation of silencing for the selected index position per these rules (assuming silencable is enabled with "Y" and silence is for pertinent state):

1. Silencing an index position does not cause the device to revert to a lower unsilenced index position.
2. Silencing commands are ignored prior to receipt of first event.
3. Silence command for any zone in the multi-zone table silences index positions using the MZ table.
4. Silence of any index positions "AND-ed" together silences the output.
5. Silencing of the most recent of "OR-ed" index positions silences the output.

5.2.6 Resounding Feature

Each used index position requires setting the resounding bit to Y(Yes) or N(No). This bit enables subsequent resounding of the index position when an event occurs after a silence command. For example, the output for an index position would be "OFF" or "ON" for these sequential events:

Sequence	Event	Resound = N	Resound = Y
1	Alarm Event	ON	ON
2	Alarm Silence	OFF	OFF
3	Alarm Event	OFF	ON

5.3 ADDRESSABLE DEVICES

The majority of the initiating and indicating devices will be located on the addressable loop. The device's address shall be set from a 1-127 with the 55-026 programmer. Addressable devices have a variety of fields that musts be set for the unit to operate correctly. This information is downloaded to the device upon configuration and stored in non-volatile memory. Upon event occurrence, the system broadcasts the event on the communication loop and the devices respond appropriately. This allows efficient use of the communication loop and minimizes system response time upon event occurrence.

Below is a list of the compatible addressable devices:

63-1021	**Sensor, Photoelectric**
67-1032	**Sensor, Ionization**
60-1028	**Sensor, Thermal**
55-019, 55-020	**Fast Response Contact Monitor, FRCM**
55-022	**Solenoid Releasing Module, SRM**
55-021	**Supervised Output Module, SOM**
55-023	**Relay Dual Module, R2M**

The following sections discuss the programming requirements and capabilities of the addressable devices.

5.3.1 FRCM, Fast Response Contact Monitor

The FRCM is an addressable input device that offers the ability monitor normally open or closed contacts. This unit can be programmed for a variety of conditions depending on the application.
There is no default setting.

To locate the correct screen for editing the default configuration:

Password (level 3) » F6 (Config) » F1(Devices)

Programming selections:

Address: Loop (1-4) /Address (1-127)

Input: MANALRM(Manual Pull), WATERFL(Water Flow), SUPER(Supervisory), PROCESS(Process Management), MANREL(Manual Release), ABORT, RESET, DRILL, TROUBLE, REL-WCT(Release with Count Down), DETECT, ZNE-DIS(zone disable), SUPER-L(latching supervisory), SILENCE

Custom Message: 20 Characters

F2: Zone selection: *1 to 10 zones can be selected*

Contact: NO (Normally Open), NC (Normally Closed): *Some inputs only allow NO*
ENAB:E (Enabled), D (Disabled)

5.3.2 SRM, Solenoid Releasing Module

This is an addressable(1-127) device designed to release clean agent systems utilizing solenoids or initiator type components. This output is typically configured to operate upon system release , but can be configured for other states. The controller frequently interrogates the device to verify supervision and communication integrity. When used in the solenoid mode, it is a series firing circuit capable of supplying 2.0 Amps @ 24 VDC. When used with agent it can fire a max. of 6 ARM's (Agent Release Module).
The default setting is:

Address	State	Device	Zone	Time	Enable
1-001	None	24VSOL	001	Contin	Disabled

To locate the correct screen for editing the default configuration:
Password (level 3) » F6(Config) » F1 (Devices) » "Arrow" past address » F4(+, Until SRM is displayed)
Programming selections:
Address: Loop (1-4) /Address (1-127)
State: ALRM(Alarm), PRED(Predischarge), RELE(Release), WMST(Watermist)___(Off)
Custom Message: 20 Characters, default is blank
F2: Zone selection: *1 to 32 zones can be selected*
Device: 24VSOL, ARM, 12VSOL
Time: Contin(Continuous), 0-1270 sec.(10 sec. increments)
ENAB: E (Enabled), D (Disabled)

Note: If using a solenoid (rather than the ARM III) remove the EOL from the SRM SQB terminals. Solenoids can be simulated with a 30 ohm high (>20) wattage resistor.

5.3.3 SOM, Supervised Output Module

The SOM is an addressable (1-127) output device that offers many programming features and capabilities. When active this device can supply 2.0 amps of power at 30 VDC max. on a supervised polarity reversing circuit. The controller frequently interrogates the device to verify supervision and communication integrity. To obtain the appropriate initiating to indicating conditions, each of the addressable output devices must be programmed correctly.

The default setting is:

LOOP-ADDRESS	WALK TEST E/D	ENABLE E/D	INDEX # (0LO-15HI)	STATE	ZONE	PATTERN (0-15)	OP CODE (0-3)	SILENCE Y/N	RESOUND Y/N
1-001	E	E	0	ALRM	001	01	0	Y	Y
			1-15	NONE	000	00	0	N	N

To locate the correct screen for editing the default configuration:
Password (level 3) » F6(Config) » F1 (Devices) » "Arrow" (past address) » F4(+, Until SOM is displayed)
Programming Selections:
Address: Loop (1-4) /Address (1-127)
Walk Test: E (Enable), D (Disable)

Enable: E (Enable), D (Disable); *For the device*
Index: 0-15; *An index table will be made for each device programmed*
Custom Message: Select a zone number to assign a message to this device
State: ALARM, PRED(Pre-discharge), RELEASE, WMST, NONE, PROC(Process Management), TROUBLE, SUPR(Supervisory), DRILL, ABORT, PAL1(Pre-Alarm level 1), PAL2(Pre-Alarm level 2)
Zone: 1-255; *241-253(Not available), 254,255(Have special use)*
Pattern: 0-15(0-4 are factory set, 5-15 programmable for system)
Opcode: 0-3(0-Normal, 1-OR, 2-AND end, 3- AND start)
Silence: Y(Yes), N(No)
Resound: Y(Yes), N(No)

See note in Section 1.6.

5.3.4 R2M

The R2M is an addressable output device that offers remote contact closures. The contacts are rated for 2.0 amps @ 30 VDC or 0.5A @ 110 VAC. To obtain the appropriate initiating to indicating conditions, each of the addressable output devices must be programmed correctly. This unit requires communication wiring only, no additional power wires are required. The default setting is:

LOOP-ADDRESS	WALK TEST E/D	ENABLE E/D	INDEX # (0LO-15HI)	STATE	ZONE	R1	R2	Opcode
1-001	D	E	0	NORM	0	N	N	0

To locate the correct screen for editing the default configuration:
Password (level 3) » F6(Config) » F1 (Devices) » "Arrow" past address » F4(+, Until R2M is displayed)

Programming Selections:
Address: Loop (1-4) /Address (1-127)
Walk Test: E (Enable), D (Disable)
Enable: E (Enable), D (Disable); *This device*
Index: 0-15; *An index table is made for each device programmed*
Custom Message: Select a zone number to assign a message to this device
State: ALARM, PRED(Pre-discharge), RELEASE, WMST, NONE, PROC(Process Management), TROUBLE, SUPR(Supervisory), DRILL, ABORT, PAL1(Pre-Alarm level 1), PAL2(Pre-Alarm level 2)
Zone: 1-255; *241-253 (Not available), 254, 255 (Have special use)*
R1: Y(Yes), N(No); Relay 1
R2: Y(Yes), N(No); Relay 2
Opcode: 0-3(0-Normal, 1-OR, 2-AND end, 3- AND start)

See note in Section 1.6.

5.4 ZONE

Zones 1-240 are user selected and defined. Each zone can be either an Alarm or Suppression.
Alarm default is: (ALRM): blank custom message and zone disabled.
Suppression: Detection types: CROSSZ (Cross Zone), even and odd in same zone, COUNTZ (Counting Zone), any 2 addresses in same zone, SINREL(Single Sensor Release) blank custom

message, MR(Manual Release required): Y(Yes), Delay-Manual=10(0-30), Delay-Auto=30(0-60), Abort 2(1-6), and zone disabled.

5.5 SYSTEM CHEETAH BOARD CIRCUITS

5.5.1 Output Circuits

The controller supplies two audible circuits for annunciation of panel conditions, AUD1 and AUD2. Two CRM4 relay modules can also be added, for an additional 8 DPDT contacts. Default settings are:

Circuit	State	Silencable	Abort	Enabled	Zone
AUD 1	Alarm	Y	N	Y	All zone
AUD 2	Release	N	N	Y	All zone
CRM4, 1-1	None	N	N	Y	All off
CRM4, 1-2	None	N	N	Y	All off
CRM4, 1-3	None	N	N	Y	All off
CRM4, 1-4	None	N	N	Y	All off
CRM4, 2-1	None	N	N	Y	All off
CRM4, 2-2	None	N	N	Y	All off
CRM4, 2-3	None	N	N	Y	All off
CRM4, 2-4	None	N	N	Y	All off

To locate the correct screen for editing the default configuration enter:

Password (level 3) » F6 (CONFIG) » F3 (SYSTEM) » F1 (I/O CKT) » F1 (OUTPUTS)

Programming selections:

Circuit: AUD1, AUD2, P411, P412, P413, P414, P421, P422, P423, P424

State: ALARM, PRED(Pre-discharge), RELEASE, WMST, NONE, PROC(Process Management), TROUBLE, SUPR(Supervisory), DRILL, ABORT, PAL1(Pre-Alarm level 1), PAL2(Pre-Alarm level 2)

Abort: Y (Yes), N (No) *Silence on abort activation in zone in an assigned zone*

Enable: Y (Yes), N (No)

Zone: Y(Yes), - (No) Can select 1-240 zones

Loop Circuits

The Cheetah control system has the ability to control up to four separate loops. Each loop can communicate with 1 to 127 addresses. You can program each loop with regards to Class (A or B) and Enable/Disable (E or D).

Default setting:	Loop #:	1	2	3	4
	Class:	B	B	B	B
	Enable:	D	D	D	D

Power Circuits

This panel has the ability to accept a variety of power sources. The default is 120/240 VAC primary and 24 VDC batteries as secondary. To change the default settings:

Password(Level 3) » F6(Config) » F3(System) » F1(I/O CKT) » F3 (Powerin)

Selections:

POWER IN:	AC	24VDC
Controller	X	YYYY: X = Y(Yes) or N(No), YYYY= Auxin or Batt or None
SPS-SUPP	X	YYYY: X = Y(Yes) or N(No), YYYY= Auxin or Batt or None

Use arrow key to move the cursor to the correct location (F1 or F4) to change selection.

5.5.2 Message, System OK

The LCD allows you to select what you want displayed on the top two lines and the bottom line. The default settings are:

CHEETAH CONTROL SYS « (Can be changed, 20 characters)
SYSTEM OK « (Can be changed, 20 characters)
(time) (date)
FIKE PROTECTION SYS. « (Can be changed, 20 characters)

5.5.3 Pattern Pointers

Sixteen different pattern cadences can be utilized with one control system. The first five cadences are preselected, the remaining are user programmable. Once the required patterns are programmed into the system, they can be selected for all devices requiring a pattern description. The SOM's use these patterns to provide audible (or visible) pattern outputs.

Each pattern index has a 16 bit pattern with each bit representing a quarter second. The entire pattern repeats itself every 4 seconds. The leftmost bit occurs first.

Pattern Index	Pattern	User
0	0000 0000 0000 0000	Steady Off
1	1111 1111 1111 1111	Steady On
2	1100 1100 1100 0000	Temporal Pattern
3	1100 1100 1100 1100	Chirp Pattern (slow pulse)
4	1010 1010 1010 1010	March Time
5-15	Programmable	

5.5.4 Time Group

The panel offers 15 time groups to select from. When programming an input device, you will have an opportunity to select a time group to be associated with that device.

Setting: ON- Time OFF- Time
S M T W R F S HOL
X X X X X X X Y

You will select the alarm level for each day.
"1" means alarm sensitivity (S1)
"2" means alarm sensitivity (S2)

HOL stands for Holiday. You have the option of programming if you want this time group to recognize the holidays that you programmed into your configuration. You can select between Y(Yes) or N(No)

5.6 Learn Mode

The learn mode gives the programmer the ability to interrogate various loop/address combinations and automatically defaults program devices to the Cheetah system.

Screen display: 1-XXX:YYY 2-XXX:YYY
3-XXX:YYY 4-XXX:YYY

The 1,2, 3 and 4 indicates loop, XXX starting address, YYY ending address.
Learn and calibration must be completed before the panel will run properly.

5.7 To Device

When configuring a device such as an SOM, once the "enter" key is pressed, that configuration is downloaded to the device. Some devices (i.e. SOM's) require several seconds to complete this download. Since this download is occurring in the background (i.e. transparent to the user), the download may be interrupted or corrupted prior to a successful or complete download. If, after programming the Cheetah panel, a "configuration fault" is annunciated, it is suggested to use the "To Dev" function. This function will force another configuration download to all devices, therefore, eliminating any configuration mismatches which might exist between the panel and device(s).

5.7.1 All Device, F1

Selecting "All Device" will send the configuration information stored in the controller to all of the addressable output devices. If the configuration is not verified at each addressable device, the panel will display a trouble condition for that device.

5.7.2 Mod Device, F2

Selecting "Mod Device" will send the configurations modified since the last reset of the control panel. By selecting the "Mod" over "All" only the devices that have been changed or added will be sent. This saves programming time by only sending the new information and not resending everything.

5.7.3 Range, F3

Selecting "Range" allows you to select which loops and address new information will be sent to. Use arrow keys to move around in the screen and the F1 or F4.

Select Config Ranges

1 - XXX:XXX	2 - XXX:XXX
3 - XXX:XXX	4 - XXX:XXX

5.7.4 Show Mod, F4

This screen allows you to review what type of devices are at each address. It will also show you if an output device has been modified.

Screen:

MODS	DEV1 - 001-020	(Row 1)
1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0		(Row 2)
P P I S	P	(Row 3)
		(Row 4)

Row 1: Displays the range of addresses being viewed.

Row 2: Displays the actual address

Row 3: Displays what type of device is at that address: P-Photo, I-Ionization, H-Heat, O-SOM, F-FRCM, S-SRM, R-R2M

Row 4: Displays if the address has been modified since the last reset: M-Modified, U-Unmodified

5.8 Special

This section covers a variety of general detector and software changes and checks that are useful in the set-up of a system.

5.8.1 Calibrate Sensitivity, F1

F2 to Reset Cleans
F3 to Cal Fire-Level
Under normal conditions the clean level is a running average. It is constantly updated based on each communication. The fire level is updated automatically every Wednesday @ 8:00 am.
Any time a detector is added to the Cheetah, Calibrate Sensitivity (F1) MUST BE RUN.

5.8.2 Time Out, Password, F2

To access key portions of the programing you are required to enter a password. The password stays active for 5 minutes and if no actions are initiated during this period, the password will time out. This time out can be changed using the F1 or F4 key from the default of 5 minutes to 5-250 minutes.

5.8.3 Error Checking, F3

Once a configuration is entered or modified it is mandatory that the configuration meet basic system requirements. To verify that these requirements are met you can press F3 for error checking or it is automatically done when you return to the main screen. If errors are found it will display a trouble condition and record the information in the event history buffer. The basic system requirements are:

Message	Problem
CFG ERROR 1:MR -----	Configuration error #1 - suppression zone requires manual release (zone number appended to this message)
CFG RESTO 1:MR -----	Configuration error #1 restored
CONFIG ERROR 2: IN/O	Configuration error #2 - every input needs an associated output
CONFIG RESTO 2: IN/O	Configuration error #2 restored
CONFIG ERROR 3: AL V	Configuration error #3 - no analog device with alarm verification delay can be assigned to a suppression zone
CONFIG RESTO 3: AL V	Configuration error #3 restored
CONFIG ERROR 4:SENS	Configuration error #4 - Photo sensor has too high alarm sensitivity.
CONFIG RESTO 4:SENS	Configuration error #4 restored
CFG ERROR 5: W-----	Configuration error #5 - Watermist zone needs an SRM (zone#)
CFG RESTO 5: W-----	Configuration error #5 restored
CFG ERROR 6: W-----	Configuration error #6 - Watermist zone has an abort (zone#)
CFG RESTO 6: W-----	Configuration error #6 restored
CFG ERROR 7: ON TIME	Configuration error #7 - SRM assigned to Watermist and zone has no “on-time”
CFG RESTO 7: ON TIME	Configuration error #7 restored
CFG ERROR 8: ZN-TYPE	Configuration error #8 - SRM assigned to Watermist and alarm type of zone
CFG RESTO 8: ZN-TYPE	Configuration error #8 restored

5.8.4 Device Address, F4

If you need to change a device to a different address, the panel allows you to complete this task at the controller. You are not required to use the portable addressable programmer, 55-026. The screen will ask what the current address is and what would you like the new address to be. All of the program-

ming characteristics associated with that device will be changed to the new address. To find an address, install the device on an empty loop and press F2 while in this screen.

LOOP: 1 CHANGE ADDR
CHANGE ADR FROM: 001X
TO: 001X where X is device type found at this address
PRESS ENTER TO COPY

5.8.5 Calibration Time, F5

The panel has a default setting of Wednesday at 8:00 AM for calibrating the detectors. If this time is not appropriate for a particualar application you can change it to what ever time and day is best. It is recommended that you select a time and day that the facility is staffed in case a problem is located. The default settings and screeen are:

CALIBRATION TIME & DATE

DEFAULT IS 8:00 AM, WEDNESDAY

5.8.6 PC Trouble Clear, F6

If, when configuring the Cheetah control panel using the Tracker software a communications error occurs, the Cheetah will display a PC trouble message. This message identifies to the programmer that the download between Tracker and the Cheetah may not have been complete or successful. Only the “CL PC TR” function will clear this trouble indication. At this point it may be necessary to re-download the configuration. It is strongly suggested to do a 100% system checkout after each system configuration.

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CHAPTER 6 Sensor Calibration and Sensitivities

6.1 OVERVIEW

The system calibrates sensors to obtain accurate correlation to smoke levels, then uses operator selected sensitivities to determine alarm threshold levels. Only photoelectric and ionization smoke sensors are calibrated. The heat sensor is not calibrated, although it does participate in calibration activities to validate its health. The FRCM input and other output devices are not calibrated.

Calibrations are performed per the traditional techniques for photoelectrics and ionization devices. However, the improved technology in the devices lessens the traditional preference for devices. Photoelectric devices more accurately measure black smoke than their predecessors, but also have drastically improved sensitivity to gray smoke and other smoke profiles. Therefore, in many cases, photoelectrics alone serve the purpose of multiple devices or devices with multiple detection types.

6.2 LEVEL DEFINITIONS

Sensors typically output a digital value corresponding to their smoke obscuration value. During conditions of no smoke, this is referred to as the "clean-level". The clean level of the sensor is allowed to slowly compensate itself (by an average of one digital count every two hours) corresponding to environmental conditions such as dust accumulation.

The sensors are also automatically calibrated regularly to accurate smoke levels. Upon system interrogation, the sensor responds with a "fire level" corresponding to a particular smoke obscuration. The system then uses the fire and clean level to individually calibrate each sensor to a very accurate level.

Pre-alarm levels are defaulted "on" in the Cheetah configuration software. To remove the pre-alarm feature of any detector, at the detector configuration menu a "<" is observed following the P1 and P2 headers. By removing the ">" the pre-alarm feature for that detector will be removed.

6.3 CALIBRATION TIMES

The default weekly system "fire level" calibration is Wednesday @ 12:00 PM, but this can be changed during system configuration. This calibration should be performed during a period of time that represents conditions the sensor will encounter. It is also advantageous to calibrate during a time when personnel are available in case a trouble is encountered. This system calibration includes fire level adjustments. The weekly calibration cannot be disabled.

The clean level is an ongoing calibration to zero out environmental conditions as described above. Subsequent power-ups shall not require calibrations unless devices are moved or reconfigured. **Upon installation of sensor, when the environment is clean, the installer shall calibrate both the clean and fire levels.**

6.4 PHOTOELECTRIC SENSOR

The system allows photoelectrics to have alarm level sensitivities between 0.8% and 3.5% obscuration using calibration techniques per UL268 black smoke testing. The resolution is 0.1%, the accuracy is of a similar magnitude. Sensitivities are configured per Section 7.3.2. For photoelectrics, entry is a number between 08 and 35 for 0.8% to 3.5% respectively.

The photoelectric is "fire level" tested at a factory adjusted 4.0% obscuration. The system uses the sensor's digital values for fire level and clean-level to program the device to respond when the selected alarm level is reached. For optimal operation pre-alarm1 is the lowest level, followed by pre-alarm2 level, then by the alarm levels. The pre-alarm 1, pre-alarm 2, alarm 1 and alarm 2 sensitivities are set as needed to optimize sensitivity, yet minimize nuisance alarms due to environmental conditions.

6.5 IONIZATION SENSOR

Ionization sensors measure smoke levels by MIC'S. MIC's are Measurement Ionization Chamber levels measured in picoAmps. This is the preferred measurement system for the gray smoldering smoke that ionization detectors most efficiently detect. Ionization sensors must be set to an alarm threshold of 80pA MIC for all time based conditions. Although a user entry field exists for the pre-alarm levels of ionization detectors, this feature is not yet available.

In simple terms, 100 pA MIC's represents no smoke obscuration and 0 pA represents extremely dense smoke. The system has setup of 80 pA sensitivity. The "fire-level" test is performed at 50 pA.

To improve accuracy, the ionization sensor reports an average MIC level corresponding to samples previously taken. These samples are taken at approximate one second intervals, so after power-up or reset there can be delays until the appropriate number of samples are obtained.

6.6 THERMAL SENSOR

The thermal sensor is programmed in degrees Fahrenheit. It does not have clean level calibration as dust levels do not effect the device. The temperatures are accurately set at the factory; its fire-level calibration is to validate sensor health and accuracy with a fire level correspondance to 212F. Heat detectors can be adjusted between 135-150^{o}F. Default setting is 140^{o}.

6.7 SENSOR LEVEL CHART

	Photoelectric	Ionization	Thermal
Clean Level (Decimal Counts)	41-82	31-92	Not applicable
Fire Level (Decimal counts)	162-225	156-229	240

CHAPTER 7 Installation, Wiring, & Start-up

7.1 OVERVIEW

System installation is independent of whether modules were ordered separately or as part of a "packaged" CHEETAH control system. Skip instructions detailing installation of unused optional modules. Proper system design, installation, and check-out requires steps in this order.

7.2 System Design
7.3 Enclosure Installation.
7.4 Enclosure: Pull power, loop, relay, & audible wiring
7.5 Addressable devices: Pull initiating and notification wiring.
7.6 Addressable devices: Program address, install, and wire (except releasing).
7.7 System modules: Install and wire.
7.8 Install optional auxiliary devices
7.9 Configure system.
7.10 Checkout system.
7.11 Connect releasing hardware (after system check-out)

7.2 SYSTEM DESIGN

Prior to installation of modules, devices, or wiring, the system must be designed per applicable codes and other requirements. This involves selection of addressable devices, selection of optional modules, selection of device and module circuit functions, selection of general system options, and assigning addresses to devices. Recommended design methodologies include:

1.) Complete paper design using Appendix 4, Battery Calculation and Appendix 5, Configuration Forms, then subsequent programming into the CHEETAH CSC using menu options per Chapter 12.

<or>

Complete design using Cheetah Tracker computer program.

2.) Complete system documentation with wiring (or other logical) diagrams including address locations.

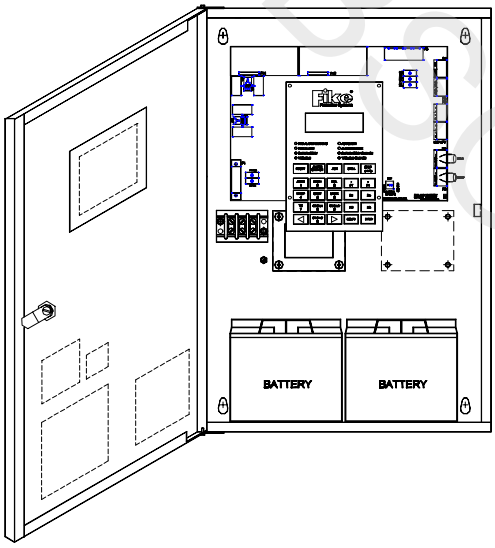
System design requires prior system training or thorough understanding of system operation as described in later Chapters and Appendices.

7.3 ENCLOSURE INSTALLATION

7.3.1 Main Enclosure

The CHEETAH enclosure includes a transformer assembly designed for either 120 VAC operation (-1) or for 208 or 240V operation (-2). The enclosure accommodates the CSC controller, other optional modules, and either a 7AH or 17AH battery pack. The enclosure is 21.125" tall x 14.375" wide x 4.0" deep with an additional .50" wide front lip to facilitate flush mounting. The enclosure's back plane has four tear-drop shaped mounting holes at 12.5" horizontal centers and 19.2" vertical centers. The door is easily removable (via two screws) from the enclosure during enclosure installation.
The enclosure shall be installed in a suitable location which is:

*Easily accessible and readily visible
*On a flat wall free from vibration
*In a clean and dry environment
*Not outdoors or in harsh environments.



7.3.2 33 A-H Battery Assembly Enclosure

If using the optional 10-2154 33 AH battery assembly enclosure, install it per the above requirements and within 20' of the main system enclosure.

10-2154-R	33 AH Battery Pack, Red Enclosure	20.15" x 10.15" x 5"
10-2154-G	33 AH Battery Pack, Gray Enclosure	20.15" x 10.15" x 5"

7.3.3 65 AH Battery Assembly Enclosure

The optional 10-2236 65AH battery assembly enclosure requires additional framing and support for installation. Install per the above requirements and within 20' of the main system enclosure.

10-2236-R	65 AH Battery Pack, Red Enclosure	27.25" x 15" x 7.25"
10-2236-G	65 AH Battery Pack, Gray Enclosure	27.25" x 15" x 7.25"

7.4 ENCLOSURE: Pull power, loop, relay, & audible wiring

Refer to Chapter 14 for Wiring Diagram Details.

Note: Complete wiring with AC Power off and locked-out. Likewise, remove F2 fuse from the CSC controller to ensure the battery assemblies cannot provide system power until wiring is completed and system is ready for checkout. Do not attach any initiators or other non-reversible electrical devices until the system has been proven to be fully operational.

7.4.1 Field Wiring/ Power Limited Requirements

Route all field wiring through the appropriate conduit knockouts, then to the appropriate circuit terminals. Provide adequate wire length to allow strain relief. CHEETAH terminal strips (including optional CRM4 and SPS modules) accept a single wire from 14 to 30 AWG.

These connections are non-power limited and shall be routed only in the enclosure's left side:

* CSC controller left side (P1) input power connections.
* SPS bottom side input power (P21) connections.

These connections are power limited and shall not be routed within 6" of the enclosure's left side to ensure segregation from the non-power limited wiring:

* CSC controller right half (P3-P9) connections.
* SLM (P11-P12) connections.
* SPS Auxiliary Out power (P22) connections.

Non-power limited wiring shall be limited to the enclosure's left side and shall be segregated from non-power limited wiring. These connections can be either power limited or non-power limited:

* CSC top left (P2) relay connections.
* CRM4 (P41 & P42) relay connections.

When planning the type of wire to be used, refer to National Electrical Code, NFPA 70. This information was derived from the 1993 edition. Stranded wire shall be tinned per NFPA70 and local requirements.

AWG	Stranding	Nominal Diameter	Uncoated Copper (Ohms / 1000')	Coated Copper (Ohms /1000')
18	1	0.040"	7.77	8.08
18	7	0.046"	7.95	8.45
16	1	0.051"	4.89	5.08
16	7	0.058"	4.99	5.29
14	1	0.064"	3.07	3.19
14	7	0.073"	3.14	3.26

7.4.2 AC Power & Chassis Wiring:

Applies to wiring to AC power strip & transformer in enclosure.

System AC line power must originate from a dedicated circuit at the main building power distribution center. The circuit breaker shall be equipped with a lockout mechanism and be clearly labeled as a "Fire Protection Control Circuit." Route line power to the system through dedicated grounded metallic conduit.

Ensure the power is compatible with the transformer assembly (120VAC, 240VAC, or 208VAC). Route the AC hot, neutral, and ground (chassis) wires into the enclosure and connect to the AC Power strip per the Chapter 14 wiring diagram. For 120VAC operation, connect the three wires directly to the terminal strip. For 208 or 240 VAC operation, connect the AC hot and AC neutral to the appropriate terminal strip connection, but connect ground chassis to the chassis standoff. When completed, verify continuity from chassis (green wire) to enclosure and to conduit.

7.4.3 Communication Loop Wiring

Applies to: a.) ASC P6-P7 wiring (Loop 1 & 2)
b.) SLM loop module P11-P12 wiring (Loop 3 & 4)

Addressable Circuit Wiring Limitation Calculations

The addressable communication loop has the following maximum wiring limitations:

(Includes +/S and -/SC wires combined)
Impedance, R = 50 Ω
Inductance, L = 1000uH
Capacitance, C = 1uF

Wiring limitations should be calculated for the above three factors and the **smallest value obtained should be the maximum feet of wire used**.

The chart below is an approximation of maximum wire distances with worst case calculations. If more wiring is needed, the exact calculations can be performed. After the chart is a listing of the formula's for exact calculations. Call FIKE for a more detailed explanation, if required.

FPLR CABLE

MFG	AWG	MAXIMUM TOTAL WIRE FOR + AND -LEG TOGETHER (FT.)				
NON-SHIELDED		1-25 DEVICES	26-50 DEVICES	51-75 DEVICES	76-100 DEVICES	101-127 DEVICES
GUARDIAN	18	3227	2500	2188	1914	1719
GUARDIAN	16	5163	4000	3500	3062	2750
GUARDIAN	14	6944	6400	5600	4900	4400
BELDEN 9571	18	3226	2500	2188	1914	1719
BELDEN 9572	16	5162	4000	3500	3062	2750
BELDEN 9580	14	5000	5000	5000	4900	4400
BELDEN 9582	12	5319	5319	5319	5319	5319
SHIELDED						
BELDEN 9574	18	3226	2500	2188	1914	1719
BELDEN 9575	16	5162	4000	3500	3063	2750
BELDEN 9581	14	5208	5208	5208	4900	4400
BELDEN 9583	12	5556	5556	5556	5556	5556

Resistive limitation

W(ft) = R * (1000/I)

R = 7000/[(0.58*S)+(30*N)] **50Ω MAX. (USE 50 EVEN IF CALCULATED VALUE IS GREATER)**

S = Sum of current scaling factors

Fike P/N	Device	Scaling Factor
60-1028	Thermal	1.35
63-1021	Photo	1.35
67-1032	Ion	1.35
55-019/020	FRCM	0.48
55-021	SOM	0.76
55-022	SRM	0.31
55-023	R2M	0.35

N = # of devices on loop **FOR 5 OR MORE DEVICES, N=5**

I = Cable resistance per 1000 ft.

AWG	Typical resistance per two conductor circuit
18	12.8Ω
16	8Ω
14	5Ω
12	3.2Ω

Inductive Limitation

W(ft) = 1000uH / L

L is the wire's Inductance per foot value.

Capacitive Limitation

W(ft) = 1uF / C

C is the wire's Capacitance per foot value.

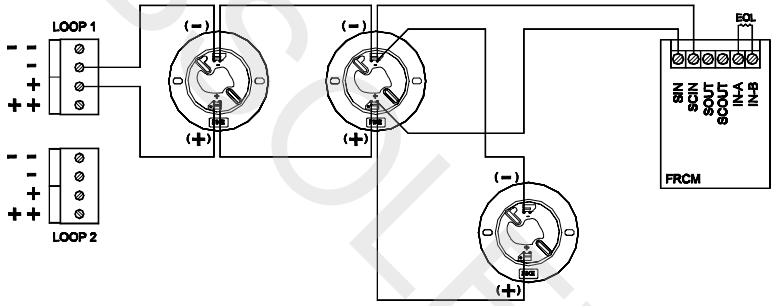
Note: Shielded cables usually list two capacitance values, use the larger value.

The circuit may be wired to operate with the characteristics of these NFPA signaling Line styles.

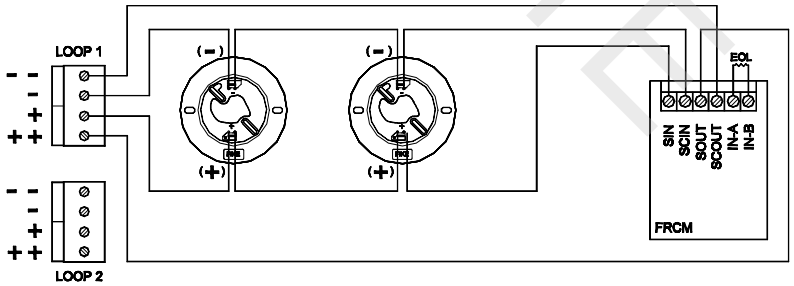
NFPA	Class/ Wiring Method	T-Tapping Allowed
Style 4	Class B/ Non-Redundant	Yes
Style 6	Class A/ Redundant	No

Loops are capable of supporting parallel branching for Style 4 since supervision is by means of device responses. Style 6 wiring assures loop operation even with a single wire break. Examples of wiring styles follow.

STYLE 4



STYLE 6



Complete loop wiring. Installation of sensor bases at this time is acceptable. If using a high voltage testing device to verify ground isolation, do not expose devices or modules to the high voltage. Verify wiring per the following:

1. Remove all sensor heads.
2. Verify no stray voltages exist on any field wiring prior to device installation.
3. Verify each conductor is free from shorts between all other conductors and chassis.
4. Measure loop impedance with a short across loop at point furthest from circuit start.

   For Class B, this is a short at last device

   For Class A, this is a short at panel (++ to — terminals).

Verify this loop impedance does not exceed 50 ohms.

7.4.4 Auxiliary Power, CSC (P4-P5) and SPS (P22) Wiring

These CSC and SPS system module terminals provide auxiliary output power (24VDC nominal) for use by addressable output devices, four wire detectors, and other power use.

CSC P5: Two pair of 2.0 amp auxiliary non-resettable outputs. (4.0 amps total)
CSC P4: A 2.0 amp auxiliary resettable output (off during system resets).
SPS P22:Two pair of 2.0 amp auxiliary non-resettable outputs. (4.0 amps total)

Complete auxiliary power wiring. If using a high voltage testing device to verify ground isolation, do not expose devices or modules to the high voltage. Verify wiring per the following :

1. Verify no stray voltages exist on any field wiring prior to device installation.
2. Verify each conductor is free from shorts between all other conductors and chassis.
3. Measure loop impedance with a short across loop at device furthest from circuit start.
   Verify this impedance does not exceed the maximum ohms below for the maximum current used.

Max Current (Amps)	0.1	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.5	2.0	Amp
SRM's with solenoids:	12	6	4	3	2.4	2.0	1.5	1.2	0.8	0.6	max ohms
Standard uses:	24	12	8	6	4.8	4.0	3.0	2.4	1.6	1.2	max ohms

All other circuits: 50 ohms maximum from control panel to furthest device.

7.4.5 Notification Circuit (P8-P9) Wiring

Applies to: a.) ASC P8-P9 wiring.
These two circuits (rated at 2.0 amps) may be wired per these NFPA notification circuit styles.

NFPA	Class / Wiring Method	T-Tapping allowed?	EOL used?
Style Y	Class B / Non-Redundant	No	Yes
Style Z	Class A / Redundant	No	No

Complete circuit wiring. Verify circuit wiring per 7.4.4 (above) with maximum impedance per "Standard Uses" in the chart. Compatible devices are those listed in SOM manual (in the front of this manual).

7.4.6 Relay Circuit (P2) and CRM4 (P4) Wiring

Wire these dry contact outputs per the circuit requirements of their monitoring devices or the devices which they control. All contacts are rated at 2A each @ 30 VDC or 0.5A @ 110 VAC.

7.5 ADDRESSABLE DEVICES: Pull initiating and notification wiring. Refer to Chapter 14 for Wiring Diagram Details.

7.5.1 Notification Circuits

Pull the wiring from the addressable output devices to the notification and releasing devices.
Style Y (Class B) wiring is supported. Refer to the pertinent device manual for:

* allowable circuit resistance
* approved notification devices
* current use per notification device

If using a high voltage testing device to verify ground isolation, do not expose devices or modules to the high voltage. Verify wiring per the following :

1. Verify no stray voltages exist on any field wiring prior to device installation.
2. Verify each conductor is free from shorts between all other conductors and chassis.
3. Measure loop impedance with a short across loop at device furthest from circuit start.

7.5.2 Initiating Circuits

Pull the wiring from the FRCM input addressable devices to the closed contact device.
Style A (Class B) wiring is supported. Verify this wiring per the following:

1. Verify no stray voltages exist on any field wiring prior to device installation.
2. Verify each conductor is free from shorts between all other conductors and chassis.
3. Verify loop impedance with a short across loop at the most remote point is less than 100 ohms.

Abort and Reset input circuits are to be wired only with momentary contact switches so they cannot be left activated without human interaction.

Note: If using any means which applies voltages in excess of device ratings, first remove field devices to prevent damage.

7.6 ADDRESSABLE DEVICES: Program address, install, and wire (except releasing)

7.6.1 Program Device Addresses

An address shall be programmed into each addressable device (both sensors and input/output (I/O) modules) so the system can distinguish it from the other loop devices. Allowed addresses are from 1 to 127 and are programmed using the 55-026 CHEETAH Programmer.

Sensors are comprised of a sensor head and sensor base. Sensors addresses are programmed by attaching the sensor head directly onto the programmer, selecting the address on the programmer switchpad and LCD, then selecting to write the address to the sensor. After programming, mark the address on the sensor's label. While on the programmer, some sensor head diagnostics can be analyzed.

System I/O module addresses can also be set with the programmer. They interface to the programmer's interface cable using two or four wires, depending if the module uses auxiliary 24V power. The cable connects directly into a four position jack through a cutout in the device mounting plate. Modules shall be programmed and marked in the same manner as sensors.

If necessary, the programmer can also set I/O module addresses after they are wired into the signal loops. If programming after loop installation, then loop communications must be halted by disconnecting the loop from the CHEETAH (or SLM) module. It is not necessary to disconnect 24V auxiliary power. If a programmer is not available, an address can be set from the panel. This can be accessed from the CONFIG>SPECIAL>DEV ADDR screen (See Chapter 11).

7.6.2 Install Addressable Devices & complete wiring

Install the addressable devices into their field locations and finish wiring interconnects per wiring diagrams. It is advisable to delay field wiring of releasing circuits and other non-reversible field devices until system prove-in is finished.

7.7 SYSTEM MODULES: Install and wire

Install system modules after the enclosure has been installed and cleaned of all dust and debris. Modules include the appropriate installation mounting hardware. Prior to handling or installing any modules, appropriate anti-static procedures must be followed per Appendix 6.

7.7.1 CSC Controller, P/N 10-2200

Mount on the five mounting standoffs in the upper half of the enclosure and secure using the five 6-32 nuts and lock washers provided.

7.7.2 CRM4 Relays, P/N 10-2204

Optional CRM4's are mounted on the CSC upper left hand corner. Mount standoffs in the four positions provided. Align using mating standoffs, press and secure into place.

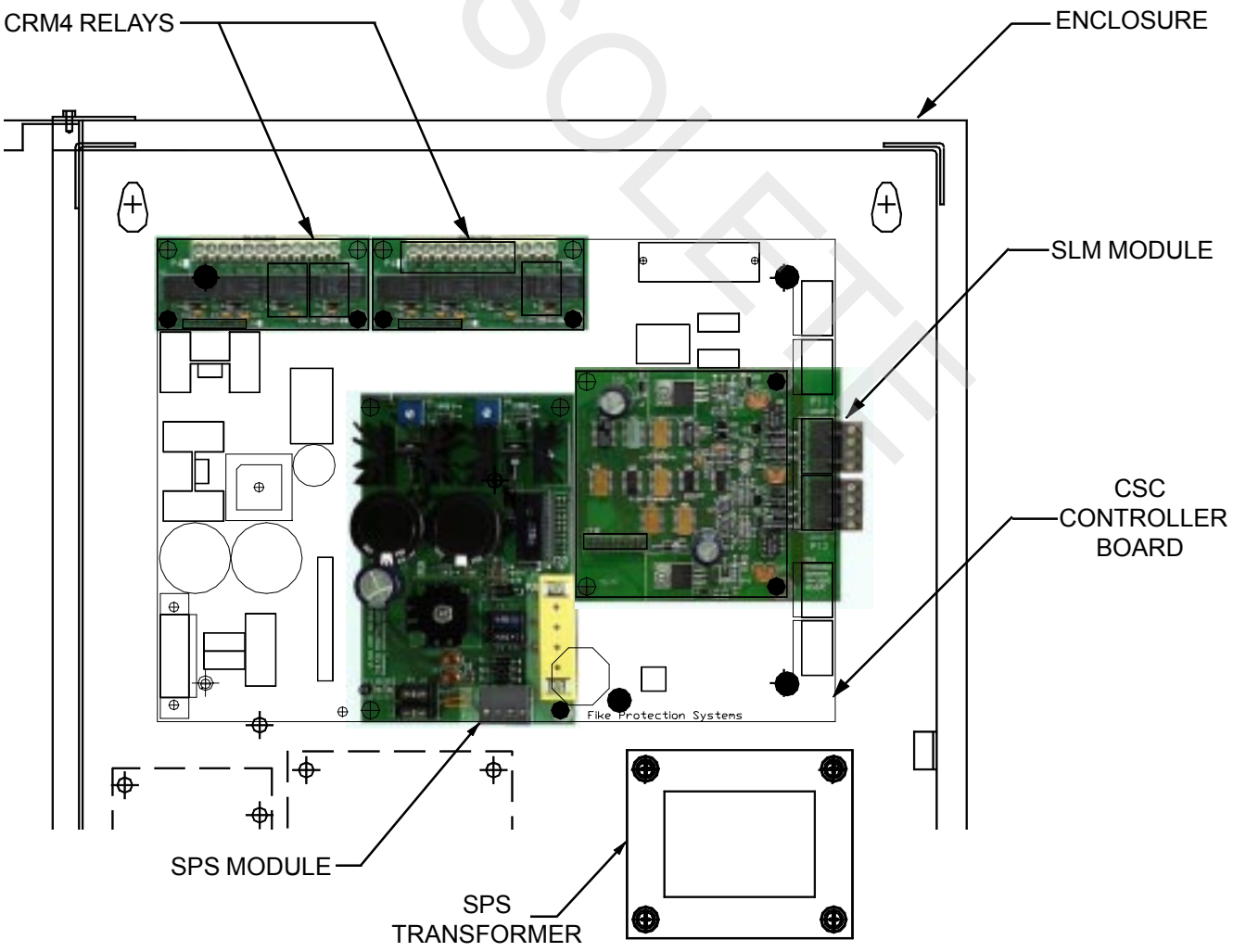
7.7.3 SLM Loop Module, P/N 10-2203

The optional loop module is mounted on the right center of the CSC module. Mount standoffs in the four positions provided. Align with mating standoffs, press and secure into place.

7.7.4 SPS Power Supply Module, P/N 10-2201-p

The SPS includes both a transformer and a plug-in module. The plug-in module is mounted on the lower center of the CSC module. Mount standoffs in the four positions provided. Align with mating standoffs, press and secure into place.

The SPS transformer is mounted in the right center of the enclosure. Using hardware included with assembly to install. Secure four standoffs in center of enclosure just to the right of the primary transformer. Mount the transformer on the standoffs (with the wires on the lower side) and secure with the four 6-32 screws.
Connect the terminals lugs to the AC power strip per the wiring diagram.



7.7.5 Finish system wiring and AC power

Finish system wiring to the system modules per system wiring diagrams. Prior to power-up , interconnect the transformer secondary winding to CSC P1-1 & P1-2 per the wiring diagram. If optional SPS module is used, ensure it is wired in a similar mode. Ensure AC power is wired per the wiring diagram.

7.8 CONFIGURE SYSTEM

Configure the system per the system design documents. Physical configuration can be by either of these two methods:

1.) CSC controller LCD and menu travel options (with level 3 password)
Chapter 12 provides details of using this method.

2.) CHEETAH Tracker program, subsequently downloaded to CHEETAH system.
Manual 06-144 provide details of using this method.

7.9 CHECK-OUT SYSTEM

Power the system up and again verify no troubles exist. Connect the batteries per the Wiring diagram. After pressing reset switch, verify trouble LED does not illuminate. Perform system check-out per Chapter 13.

Note: Use disabling of SRM modules judiciously during system check-out.
If using a solenoid (rather than the ARM-III), remove the EOL from the SRM ARM circuit.
Solenoids can be simulated with a 30 ohm high (>20) Wattage resistor across SOL terminals.

7.10 CONNECT RELEASING HARDWARE (hardware system check-out)

After complete system check-out, power-down, then connect the releasing hardware.

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CHAPTER 8 Operation (door closed)

With the door closed, the system LCD display and LED's provide status of the protected premises. Under normal operation without any events since the last reset, the LCD displays the "System Message" display below including system custom message, the "System OK" message, the time, date, and "Fike Protection Sys.".

SYSTEM MESSAGE (1)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A							C	H	E	E	T	A	H							
B				C	O	N	T	R	O	L		S	Y	S	T	E	M			
C	0	8	:	0	0	:	0	0	A	M		0	8	/	0	1	/	9	6	
D	F	I	K	E		P	R	O	T	E	C	T	I	O	N		S	Y	S	.

F1	MAIN MENU (M)	F4	MAIN MENU (M)
F2	MAIN MENU (M)	F5	MAIN MENU (M)
F3	MAIN MENU (M)	F6	MAIN MENU (M)
ESC		ENT	MAIN MENU (M)
⇐	MAIN MENU (M)	⇒	MAIN MENU (M)
#'s		HLP	

Manual Format Note:
This manual shows the 4X20 character LCD per the above left display illustration. It is divided into 4 rows labeled A-D and 20 columns 1-20, although these labels are not on the product. This manual describes C12-C19 as the date since this is the "C" row and columns 12 through 19. The manual shows function of the main keys to the right of the display. In this example, pressing F1, F2, F3, F4, F5, F6, enter, ⇒, or ⇐enters the system into the main menu display. These keys are not available until the door is open.

Upon event occurrence, the LCD shows most recent event information including Event Message, Circuit Device Message, time, date, (events since last reset). This information is kept in the current history buffer and is cleared upon reset.

If alarm conditions have not occurred, the "View Non-alarm Events display" is displayed. If alarm events have occurred, the "View Alarm Events display" is displayed which has priority over the "View Non-alarm Events display". If predischarge, abort, or release events have occurred, then the "View Zone Events display" has priority and is displayed.

VIEW ALARM EVENTS IN CURRENT HISTORY (C71)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	E	V	E	N	T		D	E	S	C	R	I	P	.		V	A	L	U	E
B	M	E	S	S	A	G	E	,		D	E	V		O	R		C	K	T	
C	1	2	:	0	0	:	0	0	A	M		0	1	/	0	9	/	9	6	
D	X	X	X	/	6	0	0		X	-	X	X	X		P	X	X	R	X	X

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	SILENCE MENU (S)
ESC	RETURN TO HISTORY (H)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
#'s		HLP	

A1-20 = SYSTEM EVENT DESCRIPTION
B1-20 = CUSTOM MESSAGE OF DEVICE OR CIRCUIT
C1-20 = TIME/DATE STAMP OF DISPLAYED EVENT
D1-3 = EVENT INDEX WITHIN ALARM BUFFER F1 & F4 KEYS ALLOW CHANGING OF RECORD NUMBER
D5-7 = TOTAL BUFFER SIZE (MAXIMUM = 600)
D9-13 = LOOP/ADDRESS OF EVENT
D15-17 = NUMBER OF ZONES IN PREDISCHARGE STATE
D18-20 =NUMBER OF ZONES IN RELEASE STATE

If predischarge, abort, or release events have occurred since reset, then the system will display the "View Zone Events Display" shown below. The display is similar to the alarm display, but contains information on release or pending release events and is zone oriented versus being address oriented.

VIEW ZONE EVENTS IN CURRENT HISTORY (C73)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	E	V	E	N	T		D	E	S	C	R	I	P	.		V	A	L	U	E
B	M	E	S	S	A	G	E	,		D	E	V		O	R		C	K	T	
C	1	2	:	0	0	:	0	0	A	M		0	1	/	0	9	/	9	6	
D	X	X	X	/	6	0	0		Z	N	X	X	X		P	X	X	R	X	X

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	SILENCE MENU (S)
ESC	RETURN TO HISTORY (H)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
#'s		HLP	

A1-20 = SYSTEM EVENT DESCRIPTION
B1-20 = ZONE CUSTOM MESSAGE
C1-20 = TIME/DATE STAMP OF DISPLAYED EVENT
D1-3 = EVENT INDEX WITHIN ZONE BUFFER
D5-7 = TOTAL BUFFER SIZE (MAXIMUM = 600)
D9-13 = ZONE NUMBER OF DISPLAYED EVENT
D15-17 = NUMBER OF ZONES IN PREDISCHARGE STATE
D18-20 = NUMBER OF ZONES IN RELEASE STATE

During Predischarge State, line C is replaced with the countdown/abort status
If the only events to have occurred since reset are non-alarm events, then the system will display the "View Non-Alarm Event Display" as shown below. The display is very similar to the alarm display, but contains information on supervisory and trouble type events.

VIEW NON-ALARM EVENTS IN CURRENT HISTORY (C72)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	E	V	E	N	T		D	E	S	C	R	I	P	.		V	A	L	U	E
B	M	E	S	S	A	G	E	,		D	E	V		O	R		C	K	T	
C	1	2	:	0	0	:	0	0	A	M		0	1	/	0	9	/	9	6	
D	X	X	X	/	6	0	0		X	-	X	X	X		P	X	X	R	X	X

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	SILENCE MENU (S)
ESC	RETURN TO HISTORY (H)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
#'s		HLP	

A1-20 = SYSTEM EVENT DESCRIPTION
B1-20 = CUSTOM MESSAGE OF DEVICE OR CIRCUIT
C1-20 = TIME/DATE STAMP OF DISPLAYED EVENT
D1-3 = EVENT INDEX WITHIN BUFFER
D5-7 = TOTAL BUFFER SIZE (MAXIMUM = 600)
D9-13 = LOOP/ADDRESS OF EVENT
D15-17 = NUMBER OF ZONES IN PREDISCHARGE STATE
D18-20 = NUMBER OF ZONES IN RELEASE STATE

Door closure prohibits access to operator switches and controls such as silencing, stepping through subsequent event operation, resetting, or configuring.

All silencing of silenceable circuits is performed by pressing "ALARM SILENCE". Silencing of the local piezo is performed by pressing "ALARM SILENCE" or "ACK".

CHAPTER 9 Operation (door open, level 1 password)

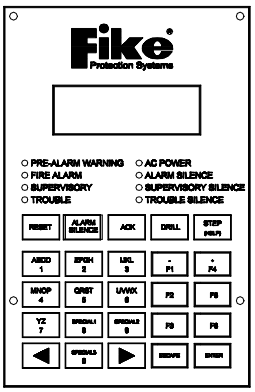
Menu options available under this level of access are:

HISTORY: ALARM, EVENT, ZONE, CURRENT
PASSWORD: (ENTRY)
SPECIAL: LEVELS, SETTIME

9.1 OVERVIEW

This chapter defines system operation with the enclosure door open. This "level 1" access allows use of:

* Five operator keys: 1.) Reset 2.) Alarm Silence 3.) ACK-nowledge 4.) Drill and 5.) Step
* Viewing of subsequent "Recent Events" on the LCD via use of step key.
* Viewing of alarm history records.
* Viewing of non-alarm history records.
* Viewing of zone history records.
* Viewing of sensor status (% obscuration, MIC, temperature as appropriate).
* Silencing of silencable events.
* Setting of system time and date.



#02-4020 Keypad

9.2 PRIMARY OPERATOR KEYS

9.2.1 Reset:

Restores system to normal, turns off outputs, momentarily flashes all LED's, and temporarily resets Auxiliary Power (resettable only).

9.2.2 Alarm Silence:

Same as Acknowledge plus silences, silenceable events including pre-alarm1, pre-alarm2, alarm, predischarge, release, trouble and supervisory outputs.

9.2.3 ACK-nowledge:

Provides system recognition of events. Pressing turns off local piezo, logs "ACK" in event history, changes flashing LED events to steady, and transmits "ACK" event to remote devices.

9.2.4 Drill:

Activates outputs assigned to operate upon drill activation, logs drill event in history, and transmits signals to remote devices. Operates as a toggle switch.

9.2.5 Step:

Displays "recent events" on LCD in descending chronological order of occurrence. Pressing repeatedly cycles through all events since last reset. After viewing most recent event, pressing again cycles to first event.

9.3 MENU TRAVEL/PASSWORDS

Pressing function keys (F1-F6) allows access to menus as displayed below. For most menu travel menus (such as "Main Menu" below), the numbers displayed in columns 1 and 11 of the LCD display correspond to function key operation. The text in columns 2-10 and 12-20 describe the function key operation, which often is travel into embedded menu options. The display title is noted and followed by a reference in parenthesis, (see Appendix 1, System Menu Flowcharts). Appendix 1 gives an overview of menu travel options.

While in the “System Message” display, pressing any function key allows access to the system “Main menu”.

SYSTEM MESSAGE (1)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A							C	H	E	E	T	A	H							
B				C	O	N	T	R	O	L		S	Y	S	T	E	M			
C	0	8	:	0	0	:	0	0	A	M		0	8	/	0	1	/	9	6	
D	F	I	K	E		P	R	O	T	E	C	T	I	O	N		S	Y	S	.

F1	MAIN MENU (M)	F4	MAIN MENU (M)
F2	MAIN MENU (M)	F5	MAIN MENU (M)
F3	MAIN MENU (M)	F6	MAIN MENU (M)
ESC		ENT	MAIN MENU (M)
⇐	MAIN MENU (M)	⇒	MAIN MENU (M)
#'s		HLP	

MAIN MENU (M)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	1	-	H	I	S	T	O	R	Y		4	-	E	N	A	B	L	E		
B	2	-	P	A	S	S	W	R	D											
C	3	-	S	P	E	C	I	A	L		6	-	C	O	N	F	I	G		
D	S	E	L	E	C	T		F	U	N	C	T	I	O	N		K	E	Y	

F1	HISTORY (H)	F4	ENABLE/DISABLE (E)LEVEL2
F2	PASSWORD (A)	F5	
F3	SPECIAL (P)	F6	CONFIGURATION (C)LEVEL 3
ESC	RETURN TO SYS MSG (1)	ENT	
⇐		⇒	
#'s		HLP	

9.4 HISTORY RECORD

Viewing of history records is via the same displays previously described in Chapter 8. This information is stored in these three 600 event buffers:

* Alarm buffer: Stores all alarm event information including sensors, manual pulls, aborts, etc.
* Non-alarm (event) buffer: Stores non-alarm events including troubles, supervisory, process management.
* Zone buffer: Stores events on a zone basis.

Display of each of these buffers is possible via either the “current” mode or the “historical” mode. In the current mode, only the events since the last reset is displayed. In the historical mode, all events since the last history erase event can be viewed (within buffer size limitations).

HISTORY MENU (H)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	1	-	A	L	A	R	M				4	-	C	U	R	R	E	N	T	
B	2	-	E	V	E	N	T				5	-								
C	3	-	Z	O	N	E					6	-	E	R	A	S	E			
D	S	E	L	E	C	T		F	U	N	C	T	I	O	N		K	E	Y	

F1	VIEW ALARM BUFFER (H1)	F4	VIEW CURRENT EVENTS (H4)
F2	VIEW EVENT BUFFER (H2)	F5	
F3	VIEW ZONE BUFFER (H3)	F6	ERASE HISTORY (H6)
ESC	RETURN TO MAIN (M)	ENT	
⇐		⇒	
#'s		HLP	

Selecting F1, F2, F3, or F4 allows acccess to the particular buffer desired. Erasing the history (F6) requires level 4 password access.

VIEW ALARM EVENTS HISTORY (H1)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	E	V	E	N	T		D	E	S	C	R	I	P	.		V	A	L	U	E
B	M	E	S	S	A	G	E	,		D	E	V		O	R		C	K	T	
C	1	2	:	0	0	:	0	0	A	M		0	1	/	0	9	/	9	6	
D	A	L	M		X	X	X	/	6	0	0	C	U	R		X	-	X	X	X

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	RETURN TO HISTORY (H)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's		HLP	

A1-20 = SYSTEM EVENT DESCRIPTION / 5 DIGIT VALUE OF EVENT
B1-20 = CUSTOM MESSAGE OF DEVICE OR CIRCUIT
C1-20 = TIME/DATE STAMP OF DISPLAYED EVENT
D5-7 = EVENT INDEX WITHIN ALARM BUFFER
D9-11 = TOTAL BUFFER SIZE (MAXIMUM = 600)
D12-14 = CUR (CURRENT EVENTS SINCE LAST RESET) OR HIS (HISTORICAL RECORDS)
D16-20 = LOOP/ADDRESS OF EVENT.
F1 & F4 KEYS ALLOW:
1.) CHANGING OF RECORD NUMBER
2.) TOGGLING BETWEEN HISTORICAL DISPLAY AND CURRENT DISPLAY.

VIEW NON-ALARM EVENTS HISTORY (H2)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	E	V	E	N	T		D	E	S	C	R	I	P	.		V	A	L	U	E
B	M	E	S	S	A	G	E	,		D	E	V		O	R		C	K	T	
C	1	2	:	0	0	:	0	0	A	M		0	1	/	0	9	/	9	6	
D	E	V	T		X	X	X	/	6	0	0	C	U	R		X	-	X	X	X

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	RETURN TO HISTORY (H)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's		HLP	

A1-20 = SYSTEM EVENT DESCRIPTION / 5 DIGIT VALUE OF EVENT
B1-20 = CUSTOM MESSAGE OF DEVICE OR CIRCUIT
C1-20 = TIME/DATE STAMP OF DISPLAYED EVENT
D5-7 = EVENT INDEX WITHIN BUFFER
D9-11 = TOTAL BUFFER SIZE (MAXIMUM = 600)
D12-14 = CUR (CURRENT EVENTS SINCE LAST RESET) OR HIS (HISTORICAL RECORDS)
D16-20 = LOOP/ADDRESS OF EVENT
F1 & F4 KEYS ALLOW:
1.) CHANGING OF RECORD NUMBER
2.) TOGGLING BETWEEN HISTORICAL DISPLAY AND CURRENT DISPLAY.

VIEW ZONE EVENTS HISTORY (H3)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	E	V	E	N	T		D	E	S	C	R	I	P	.		V	A	L	U	E
B	Z	O	N	E		C	U	S	T	O	M		M	E	S	S	A	G	E	
C	1	2	:	0	0	:	0	0	A	M		0	1	/	0	9	/	9	6	
D	E	V	T		X	X	X	/	6	0	0	C	U	R		Z	N	Y	Y	Y

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	RETURN TO HISTORY(H)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's		HLP	

A1-20 = SYSTEM EVENT DESCRIPTION / 5 DIGIT VALUE OF EVENT.
B1-20 = ZONE CUSTOM MESSAGE
C1-20 = TIME/DATE STAMP OF DISPLAYED EVENT
D5-7 = EVENT INDEX WITHIN ZONE BUFFER
D9-11 = TOTAL BUFFER SIZE (MAXIMUM = 600)
D12-14 = CUR (CURRENT EVENTS SINCE LAST RESET) OR HIS (HISTORICAL RECORDS)
D16-20 = ZONE OF EVENT
F1 & F4 KEYS ALLOW:
1.) CHANGING OF RECORD NUMBER
2.) TOGGLING BETWEEN HISTORICAL DISPLAY AND CURRENT DISPLAY

VIEW CURRENT EVENTS HISTORY (H4)
A combination of all history buffers to display in order of occurrence.

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	E	V	E	N	T		D	E	S	C	R	I	P	.		V	A	L	U	E
B	M	E	S	S	A	G	E	,		D	E	V		O	R		C	K	T	
C	1	2	:	0	0	:	0	0	A	M		0	1	/	0	9	/	9	6	
D	X	X	X	/	6	0	0		X	-	X	X	X		P	X	X	R	X	X

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	RETURN TO HISTORY (H)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's		HLP	

A1-20 = SYSTEM EVENT DESCRIPTION / 5 DIGIT VALUE OF EVENT
B1-20 = CUSTOM MESSAGE OF DEVICE OR CIRCUIT
C1-20 = TIME/DATE STAMP OF DISPLAYED EVENT
D1-3 = EVENT INDEX WITHIN ALARM BUFFER
F1 & F4 KEYS ALLOW:
1.) CHANGING OF RECORD NUMBER
D5-7 = TOTAL BUFFER SIZE (MAXIMUM = 600)
D15-17 = # OF ZONES IN PREDISCHARGE STATE
D18-20 = # OF ZONES IN PRE-RELEASE STATE
D19-23 = LOOP/ADDRESS OF EVENT.

ERASE HISTORY (H6) (requires level 4 password)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	E	R	A	S	E		H	I	S	T	O	R	Y		?	?	?			
B	P	R	E	S	S		F	2		T	O		C	O	N	F	I	R	M	
C	P	R	E	S	S		F	3		T	O		U	N	E	R	A	S	E	
D	P	R	E	S	S		E	S	C		T	O		C	A	N	C	E	L	

F1	RETURN TO HISTORY (H)	F4	RETURN TO HISTORY (H)
F2	ERASE HISTORY	F5	RETURN TO HISTORY (H)
F3	RETURN TO HISTORY (H)	F6	RETURN TO HISTORY (H)
ESC	RETURN TO HISTORY (H)	ENT	RETURN TO HISTORY (H)
⇐	RETURN TO HISTORY (H)	⇒	RETURN TO HISTORY (H)
#'s	RETURN TO HISTORY (H)	HLP	HELP (HL - H6)

Erasing the history will be described in detail in later chapters.

9.5 PASSWORD

Password access is required to access activities other than history viewing (and other functions described in this chapter). To enter password, press F2 from the main menu, then enter valid password per below.

Password entry is required to access most menu options. In general, access is limited per below:

No password (Level 1): History Viewing		(per Chapter 9)
Level 2 password:	System enabling, disabling, and special functions.	(per Chapter 10)
Level 3 Password:	System configuration options.	(per Chapter 11)
Level 4 Password:	Password Editing	(per Chapter 12)

Access granted by a high level password automatically allows access to lower level password functions.

The system can have up to 16 unique level 2 passwords and 16 unique level 3 passwords. All passwords can only be edited by the system administrator via their level 4 password. If a level 4 password is lost, a temporary password can be accessed by contacting Fike and providing the 4 digit ID number displayed at the passwork entry menu.

Note: This manual's displays illustrate data entry (or script selection) fields with gray background. The system LCD shows these fields in a normal format.

PASSWORD MENU (A)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	E	N	T	E	R		P	A	S	S	W	O	R	D	:	Z	Z	Z	Z	Z
B	T	H	E	N		P	R	E	S	S		E	N	T	E	R				
C	L	E	V	:	X		X	X	X	X	X	X	-	I	D	:	X	X	X	X
D	N	O		P	W			F	2		T	O		E	D	I	T		P	W

F1	DECR FIELD @ CURSOR	F4	INCR FIELD @ CURSOR
F2	EDIT PASSWORDS(A2)	F5	
F3		F6	
ESC	RETURN TO MAIN (M)	ENT	ACCEPT PASSWORD
⇐	CURSOR LEFT	⇒	CURSOR RIGHT
# 's	PASSWORD ENTRY	HLP	HELP (HL - A)

A16-20 = FIVE DIGIT LEVEL 2, LEVEL 3, or LEVEL 4 NUMERIC PASSWORD. (1 - 60,000)
C5 = LEVEL OF CURRENT PASSWORD ACCESS.
C7-12 = CUSTOM PASSWORD NAME FOR CURRENT VALID PASSWORD (6 LETTER/DIGIT)
C17-20 = ENCRYPTED ID FOR FACTORY PASSWORD
D1-5 = PASSWORD STATUS (PW OK, NO PW)
Note: Must manually advance cursor using ⇒ key between entry of characters.

Upon successful password entry, display row D changes from "NO PW" to "PW OK". The password level and your password name identifier is shown in display row C. These items require password level 4 to edit.

9.7 VIEWING DEVICE LEVELS

Pressing F3 from the Main menu enters the SPECIAL display below. Pressing F2 enters the LEVELS display. This display allows viewing of current and historical information of devices. This is most practical with input sensors, where either Engineering units (% obscuration, temperature, or MIC's) or counts (Analog-to-digital counts) can be displayed. As shown in the chart below, threshold values and high/low values can also be viewed. Information can likewise be viewed on other input and output devices, but due to their binary (on/off) nature, the information is less informative for troubleshooting.

SPECIAL MENU (P)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	1	-	S	E	N	S	E				4	-	W	A	L	K	T	E	S	T
B	2	-	L	E	V	E	L	S			5	-	D	I	A	G	N	O	S	.
C	3	-	S	E	T	T	I	M	E		6	-								
D	S	E	L	E	C	T		F	U	N	C	T	I	O	N		K	E	Y	

F1	SENSE (P1) LEVEL 2	F4	WALK-TEST (P4) LEVEL 2
F2	DEVICE LEVELS (P2)	F5	DIAGNOSTICS (P5) LEVEL 2
F3	SET TIME (P3)	F6	
ESC	RETURN (M)		
⇐			
#'s		HLP	HELP (HL - P)

VIEW DEVICE LEVELS (P2A) SENSOR

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	Y	-	X	X	X		T	T	T	T	T	T	=	Z	Z	Z		C	N	T
B	C	L	=	Z	Z	Z		P	2	=	Z	Z	Z		L	O	=	Z	Z	Z
C	F	R	=	Z	Z	Z		A	1	=	Z	Z	Z		H	I	=	Z	Z	Z
D	P	1	=	Z	Z	Z		A	2	=	Z	Z	Z		V	C	=	Z	Z	Z

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	CURRENT POLL	F5	RESET HIGH/LOW VALUES(P25)
F3		F6	
ESC	RETURN (P)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
#'s	ADDR DATA ENTRY	HLP	HELP (HL - P2)

ROWS B, C, & D OF DISPLAY ARE DEPENDENT UPON DEVICE TYPE. ALL DEVICES DISPLAY CURRENT VALUE, LOWEST, & HIGHEST(SINCE F5). SCREEN P2A IS SENSOR DISPLAY. IF A FRCM OR OUTPUT DEVICE, VALUES SHOWN ARE LISTED BELOW.

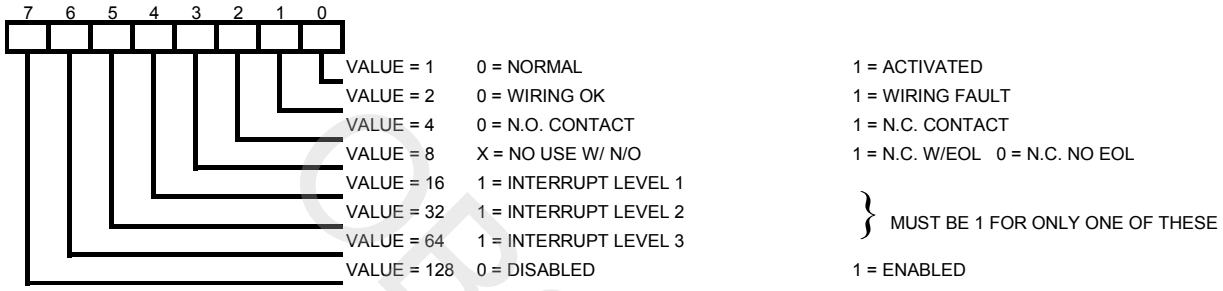
A1-5 = LOOP NUMBER /ADDRESS NUMBER
A7-12 = DEVICE TYPE
A14-17 = DEVICE'S CURRENT VALUE (AS NOTED BELOW)
A18-20 = DISPLAY UNITS FOR ALL VALUES (F1 TO CYCLE FROM A-D COUNTS TO EITHER %OBS, MIC, or FAHRENHEIT, DEPENDING UPON DEVICE TYPE)

VIEW DEVICE LEVELS (P2B) FRCM

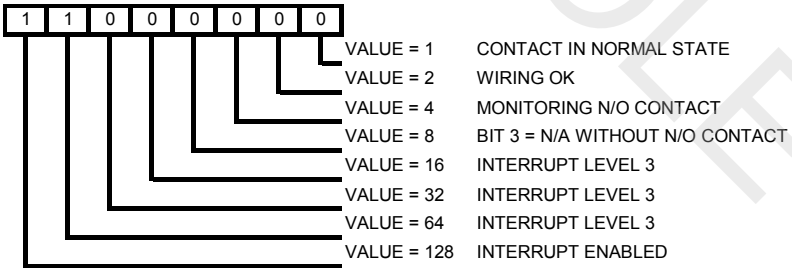
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	Y	-	X	X	X				F	R	C	M	=	Z	Z	Z				
B	C	O	N	T	A	C	T	=		N	.	O	.		+		E	O	L	
C	S	W	I	T	=	O	F	F			W	I	R	E		=	O	K		
D	I	L	V	L	=	3					I	S	T	A	T	=	E	N	A	

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	CURRENT POLL	F5	RESET HI/LOW (P25)
F3		F6	
ESC	RETURN (P)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
#'s	ADDR DATA ENTRY	HLP	HELP (HL - P2)

A1-5 = LOOP-ADDRESS LOCATION OF FRCM
A14-16 = LAST RESPONSE TO POLLED COMMAND (CODED IN BINARY)



example 192=



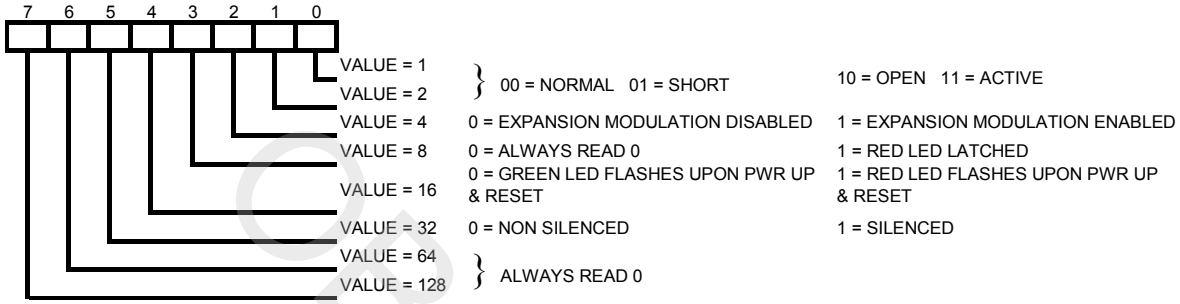
B10-19 = DEVICE IS MONITORING N.O. CONTACT OR N.C. CONTACT
C6-7 = DEVICE CONTACT IS ACTIVATED (ON)/NORMAL (OFF)
C17-19 = DEVICE CONTACT WIRING IS OK/FAULT(FLT)
D6 = INTERRUPT LEVEL OF DEVICE
D17-19 = DEVICE ENABLE/DISABLE STATUS (ENA/DIS)

VIEW DEVICE LEVELS (P2C) SOM

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	Y	-	X	X	X					S	O	M	=	Z	Z	Z	/	Y	Y	Y
B	C	I	R		S	T	A	T	U	S	=		N	O	R	M	A	L		
C	E	X	P	A	N	=	E	N	A		W	A	L	K	T	=	E	N	A	
D	C	N	T	R	S	=	E	N	A		S	I	L	E	N	=	N	O		

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	CURRENT POLL	F5	RESET HI/LOW (P25)
F3		F6	
ESC	RETURN (P)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
#'s	ADDR DATA ENTRY	HLP	HELP (HL - P2)

A1-5 = LOOP-ADDRESS LOCATION OF SOM
A14-16 = LAST RESPONSE TO POLLED COMMAND (CODED IN BINARY)



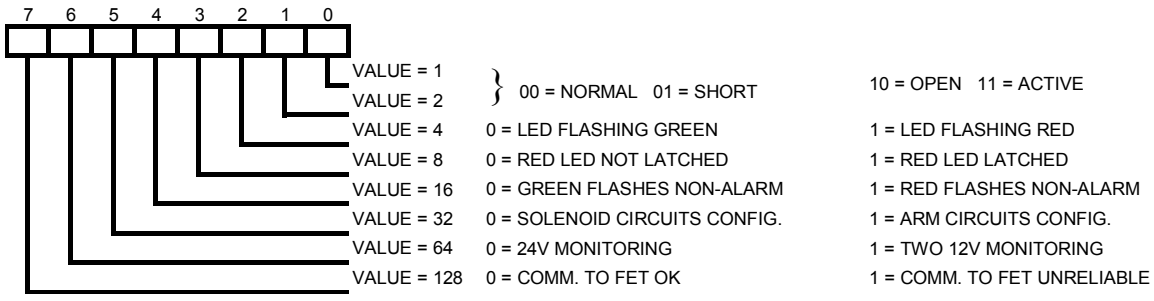
A18-20 = ACTIVE INDEX POSITION FOR DEVICE
B13-18 = SUPERVISED CIRCUIT STATUS (NORMAL, SHORT, OPEN, ACTIVE)
C7-9 = EXPANSION MODE (MODULATION) ENABLED (ENA) ,DISABLED (DIS)
C17-19 = WALKTEST ENABLED (ENA), DISABLED (DIS)
C7-9 = STATE COUNTERS ENABLED (ENA), DISABLED (DIS)
D17-19 = SILENCEABLE (YES), NONSILENCEABLE (NO)

VIEW DEVICE LEVELS (P2D) SRM

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	Y	-	X	X	X					S	R	M	=	Z	Z	Z				
B	C	I	R		S	T	A	T	U	S	=		N	O	R	M	A	L		
C	C	I	R		C	O	N	F	I	G	=		2	4	V	S	O	L		
D	A	D	D	R		F	E	T			=		O	K						

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	CURRENT POLL	F5	RESET HI/LOW (P25)
F3		F6	
ESC	RETURN (P)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
#'s	ADDR DATA ENTRY	HLP	HELP (HL - P2)

A1-5 = LOOP-ADDRESS LOCATION OF SRM
A14-16 = LAST RESPONSE TO POLLED COMMAND



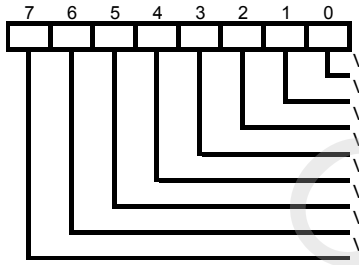
B13-18 = SUPERVISED CIRCUIT STATUS (NORMAL, SHORT, OPEN, ACTIVE)
C13-18 = SUPERVISED CIRCUIT CONFIGURATION MONITORING (24VSOL, 12VSOL, ARM)
D13-18 = ADDRESSABLE FCT SWITCH STATUS (OK, FAULT)

VIEW DEVICE LEVELS (P2E) R2M

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	Y	-	X	X	X					R	2	M	=	Z	Z	Z	/	Y	Y	Y
B	R	E	L	#	1	=	O	F	F		R	E	L	#	2	=	O	F	F	
C	E	X	P	A	N	=	E	N	A		W	A	L	K	T	=	O	F	F	
D	C	N	T	R	S	=	E	N	A											

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	CURRENT POLL	F5	RESET HI/LOW (P2S)
F3		F6	
ESC	RETURN (P)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
#'s	ADDR DATA ENTRY	HLP	HELP (HL - P2)

A1-5 = LOOP-ADDRESS LOCATION OF R2M
A14-16 = LAST RESPONSE TO POLLED COMMAND (CODED IN BINARY)



VALUE = 1	0 = RELAY 1 RESET, CMD '18'	1 = RELAY 1 SET, CMD '18'
VALUE = 2	0 = RELAY 1 RESET, EXPAN. MODE	1 = RELAY 1 SET, EXPAN. MODE
VALUE = 4	0 = LED FLASHING GREEN	1 = LED FLASHING RED
VALUE = 8	0 = RED LED NOT LATCHED	1 = RED LED LATCHED
VALUE = 16	0 = GREEN FLASHES PWR UP & RESET	1 = RED FLASHES PWR UP & RESET
VALUE = 32	0 = SPARE, ALWAYS READ 0	
VALUE = 64	0 = RELAY 2 RESET, CMD '18'	1 = RELAY 2 SET, CMD '18'
VALUE = 128	0 = RELAY 2 RESET, EXPAN. & ZONE	2 = RELAY 2 SET, EXPAN. & ZONE

A18-20
B7-9 = RELAY COIL #1 STATUS OFF/ON
B17-19 = RELAY COIL #2 STATUS OFF/ON
C7-9 = EXPANSION MODE (MODULATION) ENABLED (ENA), DISABLED (DIS)
C17-19 = WALKTEST ENABLED (ENA). DISABLED (DIS)
D7-9 = STATE COUNTERS ENABLED (ENA), DISABLED (DIS)

9.8 SETTING TIME & DATE

SET TIME & DATE (P3)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	S	E	T		T	I	M	E		&		D	A	T	E					
B	T	I	M	E		X	X	:	X	X	:	X	X		X	M				
C	D	A	T	E		X	X	/	X	X	/	X	X		X	X	X			
D	D	A	Y	L	I	G	H	T		S	A	V	I	N	G	S		Y	Y	Y

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	RETURN (P)	ENT	CHANGE DATE/TIME
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's		HLP	HELP (HL - P3)

B6-7 = HOURS (1-12)
B9-10 = MINUTES (00-59)
B12-13 = SECONDS (00-59)
B15 = CLOCK SETTING (AM, PM)
C6-7 = MONTH (01-12)
C9-10 = DATE (01-31)
C12-13 = YEAR (00-99)
C15-17 = DAY OF WEEK (SUN, MON, TUE, WED, THU, FRI, SAT)
D18-19 = DAYLIGHT SAVINGS OPTION (ON, OFF)- Causes one hour shift in spring/ fall per 1996 rules.

CHAPTER 10 Operation (level 2 password)

Menu options available under this level of access are:

LEVEL 1	HISTORY:	ALARM, EVENT, ZONE, CURRENT
	PASSWORD:	(ENTRY)
	SPECIAL:	LEVELS, SETTIME
LEVEL 2	**ENABLE / DISABLE:**	**ZONES, DEVICES, CIRCUITS, COMMUNICATION**
	SPECIAL:	**SENSE, RESET HI-LO LEVELS, WALKTEST DIAGNOSTICS**

10.1 LEVEL 2 PASSWORD OPERATION

Level 2 password allows access to enabling and disabling of circuits, sensitivity settings, walk-test operation, and other special functions. Access to this level 2 is via the password entry method per Section 9.5. Access to all menu functions is via the main menu options below.

MAIN MENU (M)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	1	-	H	I	S	T	O	R	Y		4	-	E	N	A	B	L	E		
B	2	-	P	A	S	S	W	R	D		5	-								
C	3	-	S	P	E	C	I	A	L		6	-	C	O	N	F	I	G		
D	S	E	L	E	C	T		F	U	N	C	T	I	O	N		K	E	Y	

F1	HISTORY (H)	F4	ENABLE/DISABLE (E)LEVEL2
F2	PASSWORD (A)	F5	
F3	SPECIAL (P)	F6	CONFIGURATION (C)LEVEL 3
ESC	RETURN TO SYS MSG (1)	ENT	
⇐		⇒	
# 's		HLP	

10.2 ENABLING/DISABLING

Enabling and disabling of system capabilities can be accessed by pressing F4 from the main menu. The Enable/Disable menu is displayed which allows the options of:

F1- Disabling zones of operation (singularly or in groups).
F2- Disabling addressable devices on a loop (singularly or in groups).
F3- Disabling of indicating and relay circuits on the CSC Controller.
F4- Disabling of serial data circuits on the CSC Controller.

ENABLE/DISABLE MENU (E)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	1	-	Z	O	N	E	S				4	-	C	O	M	M	U	N	.	
B	2	-	D	E	V	I	C	E	S											
C	3	-	C	I	R	C	U	I	T	S										
D	S	E	L	E	C	T		F	U	N	C	T	I	O	N		K	E	Y	

F1	ZONES(E1)	F4	COMMUN PORTS (E4)
F2	DEVICES (E2)	F5	
F3	CIRCUITS (E3)	F6	
ESC	RETURN TO MAIN (M)	ENT	
⇐		⇒	
# 's		HLP	

10.2.1 Disabling Zones

ENABLE/DISABLE ZONES (E1)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	E	N	A	/	D	I	S		Z	O	N	E		X	X	X	-	Z	Z	Z
B	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
C	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
D	Y	Y	Y		Z	O	N	E	S		X	X	X	-	X	X	X			

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	RETURN (E)	ENT	MOD ZONES AS SHOWN
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's	DATA ENTRY	HLP	HELP (HL - E1)

Note: Disabling zone does not disable inputs. Inputs will remain operating as will the display and other enabled zone outputs.

A14-16 = INITIAL ZONE SHOWN IN C1 (VALUES IN INCREMENTS OF 20)
A18-20 = LAST ZONE SHOWN IN C20 (VALUE = C1 + 19)
C1-20 = CURRENT OR DESIRED STATUS OF ZONE
(E = ENABLED, D = DISABLED, - = UNUSED)
D1-3 = DESIRED ACTION FOR ZONES DISPLAYED IN ROW D (ENA, DIS)
D11-13 = FIRST ZONE TO CHANGE. IF CURSOR IS IN ROW C, VALUE IS CURSOR ZONE.
D15-17 = LAST ZONE TO CHANGE. IF CURSOR IS IN ROW C, VALUE IS CURSOR ZONE.

EXAMPLE: ENABLE/DISABLE ZONES (E1)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	E	N	A	/	D	I	S		Z	O	N	E		0	4	1	-	0	6	0
B	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
C	E	E	E	E	E	D	E	D	D	D	D	E	E	E	-	-	-	E	E	E
D	E	N	A		Z	O	N	E	S		0	3	4	-	0	8	1			

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	RETURN (E)	ENT	MOD ZONES AS S HOWN
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's	DATA ENTRY	HLP	HELP (HL - E1)

ROW C SHOWS THE STATUS OF ZONES 41 THRU 60 AS DENOTED BY A14-A20.
ZONES 46 & 48-51 ARE DISABLED AND OTHERS ENABLED OR NOT USED.
IF THE CURSOR RESIDES @ C5 (ZONE 45), F1 OR F4 WILL DISABLE THIS ZONE.
ROW D ALLOWS ENABLING OR DISABLING A SEQUENTIAL GROUP OF ZONES.
IN THIS CASE, PRESSING ENTER ENABLES ZONES 34 THRU 81.
TO DISABLE THIS GROUP, PRESS F1(OR F4) WHILE THE CURSOR RESIDES WITHIN D1-3. WHEN ENTER IS PRESSED, CHANGES ARE MADE & ROW C SHOWS ZONE STATUS.

10.2.2 Disabling Devices

ENABLE/DISABLE DEVICES (E2)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	E	N	A	/	D	I	S		D	E	V	X	-	X	X	X	-	X	X	X
B	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
C	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
D	F	5	-	R	A	N	G	E		D	I	S	A	B	L	E				

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	TOGGLE ROW B TO TYPE	F5	ENA/DIS RANGE (E2-5)
F3		F6	
ESC	RETURN (E)	ENT	MOD ZONES AS SHOWN
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's	DATA ENTRY	HLP	HELP (HL - E2A)

A12 = LOOP FOR INITIAL DEVICE SHOWN IN C1
A14-16 = ADDRESS FOR INITIAL DEVICE SHOWN IN C1
A18-20 = ADDRESS FOR LAST DEVICE SHOWN IN C20 (VALUE = C1 +19)
C1-20 = CURRENT STATUS OF DEVICES
(E = ENABLED, D = DISABLED, - = UNUSED)
D10-16 = ENABLE OR DISABLE
F2 WILL TOGGLE ROW B TO DISPLAY DEVICE TYPE AT ADDRESS POSITION.

EXAMPLE: ENABLE/DISABLE DEVICES (E2)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	E	N	A	/	D	I	S		D	E	V	2	-	1	0	1	-	1	2	0
B	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
C	E	E	E	E	E	E	E	E	-	-	-	E	E	D	D	D	D	D	D	D
D	E	N	A				D	E	V		0	0	1	-	0	2	1			

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	TOGGLE ROW B TO TYPE	F5	ENA/DIS RANGE (E25)
F3		F6	
ESC	RETURN (E)	ENT	SEND CONFIG
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's	DATA ENTRY	HLP	HELP

ROW C SHOWS THE CURRENT STATUS OF DEVICES ON LOOP 2 ADDRESS 101 THRU 120 AS DENOTED BY A12-A20. DEVICES 2-114 THRU 2-120 ARE DISABLED. IF THE CURSOR RESIDES @ C16 (DEVICE 2-116); THEN PRESSING F1 (OR F4) WILL TOGGLE BETWEEN ENABLE AND DISABLE. PRESSING F5 WILL ALLOW THE USER TO DISABLE

ENABLE/DISABLE DEVICE RANGE (E25)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	E	N	A	/	D	I	S		R	A	N	G	E		S	E	L	E	C	T
B	1	-	X	X	X	:	Y	Y	Y			2	-	X	X	X	:	Y	Y	Y
C	3	-	X	X	X	:	Y	Y	Y			4	-	X	X	X	:	Y	Y	Y
D	P	R	E	S	S		E	N	T		E	R	:		E	N	A	B	L	E

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	CURRENT ADR POLL	F5	
F3		F6	
ESC	RETURN (E2)	ENT	MOD ZONES AS SHOWN
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
#'s		HLP	HELP (HL - E25)

B3-9 = LOOP 1 START ADDRESS: END ADDRESS TO ENA/DIS
B13-19 = LOOP 2 START ADDRESS: END ADDRESS TO ENA/DIS
C3-9 = LOOP 3 START ADDRESS: END ADDRESS TO ENA/DIS
C13-19 = LOOP 4 START ADDRESS: END ADDRESS TO ENA/DIS
D14-20 = ENABLE OR DISABLE ADDRESS RANGES DISPLAY

10.2.3 Disabling CSC Indicating and Relay Circuits

ENABLE/DISABLE CIRCUITS (E3)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	E	N	A	/	D	I	S		C	K	T	S	:				1	2	3	4
B					R	E	L	A	Y	S		P	4	1	:		E	E	D	D
C					R	E	L	A	Y	S		P	4	2	:		E	E	-	-
D				O	U	T	P	U	T	S		A	U	D	:		E	E		

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	RETURN (E)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's		HLP	HELP (HL - E3)

B17-20 = STATUS OF FOUR P41 AUX. RELAYS (E=ENABLED, D=DISABLED)
C17-20 = STATUS OF FOUR P42 AUX. RELAYS (E=ENABLED, D=DISABLED)
D17-18 = STATUS OF TWO CSC OUTPUT CKTS (E=ENABLED, D=DISABLED)

10.2.4 Disabling CSC External and Loop Communication Circuits

ENABLE/DISABLE COMMUNICATIONS (E4)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	E	N	A	/	D	I	S		C	O	M	M		P	O	R	T	S		
B																	1	2	3	4
C		E	X	T	E	R	N	A	L		P	O	R	T	S	:	E	E	E	E
D		A	D	D	R		D	E	V		L	O	O	P	S	:	E	E	E	E

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	RETURN (E)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's		HLP	HELP (HL - E4)

C17-20 = EXTERNAL COMMUNICATION PORT. (E=ENABLE, D=DISABLE)
D17-20 = ADDRESSABLE DEVICE LOOP. (E=ENABLE, D=DISABLE)

10.2.5 Disabling Operational Notes

Disabling of circuits, zones, and devices is a temporary means to remove devices from service during a time of system troubleshooting or maintenance. It is not intended as a means to permanently remove devices from a system. If devices are disabled, then subsequently enabled, a system reset shall be performed to ensure all devices are properly initialized.

10.3 SPECIALS SETTINGS

Pressing F3 from the main menu enters the special display below. Pressing F1 from the special menu enters the "Current Sensitivity" display which allows viewing and modifying of sensor sensitivities. "Current" implies present time, which is the sensitivity in use. This modifies alarm values in use but does not modify pre-alarm values or stored alarm values. Upon a system reset or timebase sensitivity change (between alarm 1 & alarm 2), the value modified by this display is replaced by the normal configured value.

SPECIAL MENU (P)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	1	-	S	E	N	S	E				4	-	W	A	L	K	T	E	S	T
B	2	-	L	E	V	E	L	S			5	-	D	I	A	G	N	O	S	.
C	3	-	S	E	T	T	I	M	E		6	-								
D	S	E	L	E	C	T		F	U	N	C	T	I	O	N		K	E	Y	

F1	SENSE (P1) LEVEL 2	F4	WALK-TEST (P4) LEVEL 2
F2	DEVICE LEVELS (P2)	F5	DIAGNOSTICS (P5) LEVEL 2
F3	SET TIME (P3)	F6	
ESC	RETURN (M)		
⇐			
#'s		HLP	HELP (HL - P)

10.3.1 Sensitivity Settings

CURRENT SENSITIVITY (P1)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	C	U	R	R	E	N	T		S	E	N	S	I	T	I	V	I	T	Y	
B	X	-	Y	Y	Y		T	:	S	S		T	:	S	S		T	:	S	S
C	X	-	Y	Y	Y		T	:	S	S		T	:	S	S		T	:	S	S
D	X	-	Y	Y	Y		T	:	S	S		T	:	S	S		T	:	S	S

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	CURRENT ADR POLLING	F5	
F3		F6	
ESC	RETURN (P)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's		HLP	HELP (HL - P1)

B1-5 = STARTING LOOP/ADDRESS FOR 3 DEVICES SHOWN IN ROW B
B7 = DEVICE TYPE (P = PHOTO, I = ION, H = HEAT)
B9-10 = DEVICE SENSITIVITIES (## = SENSOR, - - = NON-SENSOR)

Note: Other row B, C, & D data is type/sensitivity data for next addresses.
These values are programmed as:

Photo's	% obscuration;	25	=	2.5 % OBS
Ion's	MIC	80	=	80 MIC
Heat's	Fahrenheit (plus 100F)	45	=	145 Fahrenheit

EXAMPLE-CURRENT SENSITIVITY (P1)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	C	U	R	R	E	N	T		S	E	N	S	I	T	I	V	I	T	Y	
B	1	-	0	6	4		P	:	1	0		P	:	1	5		P	:	2	0
C	1	-	0	6	7		H	:	3	5		-	:	-	-		I	:	5	5
D	1	-	0	7	0		-	:	-	-		-	:	-	-		I	:	7	0

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	RETURN (P)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
#'s		HLP	

ADDRESSES 064 TO 066 ARE PHOTOS WITH CURRENT ALARM SENSITIVITIES OF 10,15, & 20. ADDRESS 067 IS A HEAT WITH A SENSITIVITY OF 35 . ADDRESSES 69, 72 ARE IONS WITH SENSITIVITIES OF 55, 77. ADDRESSES 068, 070, 071 ARE NOT PRESENT.

10.3.2 Reset Device, Levels Hi-Lo Ranges

From the SPECIAL menu, the device levels can be accessed by pressing F2 (see Chapter 9). Press the F5 key to reset the high/low values (which resets values on selected sensors).

RESET HI-LO RANGES & VERIFICATION COUNTER (P25)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	C	L	E	A	R	-	L	O	/	H	I	/	V	C	-	R	A	N	G	E
B	1	-	X	X	X	:	X	X	X			2	-	X	X	X	:	X	X	X
C	3	-	X	X	X	:	X	X	X			4	-	X	X	X	:	X	X	X
D	P	R	E	S	S		E	N	T	E	R		T	O		C	L	E	A	R

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	RETURN (P2)	ENT	RESET HI-LO RANGES
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
#'s	ADDR DATA ENTRY	HLP	HELP (HL - P25)

B3-5 = LOOP 1 START ADDRESS TO RESET
B7-9 = LOOP 1 END ADDRESS TO RESET
B14-16 = LOOP 2 START ADDRESS TP RESET
B18-20 = LOOP 2 END ADDRESS TO RESET
C3-5 = LOOP 3 START ADDRESS TO RESET
C7-9 = LOOP 3 END ADDRESS TO RESET
C14-16 = LOOP 4 START ADDRESS TO RESET
C18-20 = LOOP 4 END ADDRESS TO RESET

10.3.3 Walk-Test (P4)

Pressing F3 in the main menu enters into the "SPECIAL Menu". Pressing F4 from the SPECIAL Menu enters into the Walk-test Display below.

The walk-test is a means to test portions of the system without unneeded disturbance to people in some areas of the system. The walk-test is a toggle mode, it is either off or on. While on, the system accepts normal alarm events and responds with typical local annunciation (if required). However, output devices may or may not be configured to respond to walk-test events per these rules:

SOM: Individually configured to respond to walk-test events.
R2M: Individually configured to respond to walk-test events.
SRM: Does not respond to walk-test events.
AUD1 & AUD2: Automatically responds to walk-test events.

WARNING: Upon entering the walk-test mode, a time-out parameter is established. If no input events occur within this time-out, then the system exits the walk-test mode. The system records a "WALK-TEST ACTIVE" trouble upon entry to walktest. This trouble will remain active until the panel is reset or "WALK-TEST EXPIRED" time-out.

WALK-TEST (P4)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	W	A	L	K	T	E	S	T		S	T	A	T	U	S	:		Z	Z	Z
B	B	E	E	P	E	R		R	E	S	O	U	N	D	:			Z	Z	Z
C																				
D	T	I	M	E	O	U	T		X	X		M	I	N	U	T	E	S		

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	RETURN (P)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's		HLP	HELP (HL - P4)

A18-20 = CURRENT WALK-TEST STATUS (ON, OFF)
B18-20 = LOCAL PIEZO OPERATION (YES = SOUND FOR EVENTS - NO = SILENT ON EVENTS)
D9-10 = WALK-TEST TIME-OUT TIMER (10-30 MINUTES, IN 1 MINUTE INCREMENTS)

10.4 DIAGNOSTICS

Pressing F3 in the Main Menu enters into the "SPECIAL Menu". Pressing F5 from the SPECIAL Menu enters into the "Diagnostics" display below.

DIAGNOSTICS (P5)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	1	-	P	O	W	E	R		A		4	-	G	R	N	D		F	L	T
B	2	-	P	O	W	E	R		B		5	-	M	O	R	E				
C	3	-	S	U	P		O	U	T		6	-	K	E	Y		P	A	D	
D	S	E	L	E	C	T		F	U	N	C	T	I	O	N		K	E	Y	

F1	POWER A (P51)	F4	GROUND FAULT (P54)
F2	POWER B (P52)	F5	DIAGNOSTICS 2 (P55)
F3	SUP. OUTPUTS (P53)	F6	KEY PAD TEST (P56)
ESC	RETURN (P)	ENT	
⇐		⇒	
# 's		HLP	

POWER SUPPLY DIAGNOSTICS 1 (P51)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	B	A	T	-	Y		A	C	-	Y		A	U	X	-	Y		C	N	T
B	T	X	X	X			B	X	X	X		T	X	X	X			Y	Y	Y
C	V	X	X	X			R	X	X	X		V	X	X	X			S	P	S
D							V	X	X	X										X

F1		F4	
F2		F5	
F3		F6	
ESC	DIAGNOSTICS (P5)	ENT	
⇐		⇒	
# 's		HLP	HELP (HL - P51)

A1-5 = P1 BAT BATTERY ENABLED (Y), DISABLED (N)
A7-10 = P1 24VAC ENABLED (Y), DISABLED (N)
A12-16 = P1 BAT AUXILIARY IN DC ENABLED (Y), DISABLED (N)
B1-4 = P1 BAT BATTERY TROUBLE THRESHOLD IN A/D COUNTS
B7-10 = P1 24VAC AC BROWN-OUT THRESHOLD IN A/D COUNTS
B12-15 = P1 BAT AUXILIARY TROUBLE THRESHOLD IN A/D COUNTS
B18-20 = COUNTER, 255-0
C1-4 = P1 BAT CURRENT BATTERY VOLTAGE, IN A/D COUNTS
C7-10 = P1 24VAC AC RESTORE THRESHOLD IN A/D COUNTS
C12-15 = P1 BAT CURRENT AUXILIARY VOLTAGE, IN A/D COUNTS
D7-10 = P1 24VAC CURRENT VOLTAGE, IN A/D COUNTS
D20 = SUPPLEMENTAL POWER SUPPLY ENABLED (YES), DISABLED (NO)

POWER SUPPLY DIAGNOSTICS 2 (P52)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	B	A	T	-	Y		A	C	-	Y		A	U	X	-	Y		C	N	T
B	T	X	X	X			B	X	X	X		T	X	X	X			Y	Y	Y
C	V	X	X	X			R	X	X	X		V	X	X	X			S	P	S
D							V	X	X	X										X

F1		F4	
F2		F5	
F3		F6	
ESC	DIAGNOSTICS (P5)	ENT	
⇐		⇒	
# 's		HLP	HELP (HL - PS2)

A1-5 = P21 BAT 2 BATTERY ENABLED (Y), DISABLED (N)
A7-10 = P21 24VAC #2 ENABLED (Y), DISABLED (N)
A12-16 = P21 BAT 2 AUXILIARY IN DC ENABLED (Y), DISABLED (N)
B1-4 = P21 BAT 2 BATTERY TROUBLE THRESHOLD IN A/D COUNTS
B7-10 = P21 24VAC #2 AC BROWN-OUT THRESHOLD IN A/D COUNTS
B12-15 = P21 BAT 2 AUXILIARY TROUBLE THRESHOLD IN A/D COUNTS
B18-20 = COUNTER, 255-0
C1-4 = P21 BAT 2 CURRENT BATTERY VOLTAGE, IN A/D COUNTS
C7-10 = P21 24VAC #2 AC RESTORE THRESHOLD IN A/D COUNTS
C12-15 = P21 BAT 2 CURRENT AUXILIARY VOLTAGE, IN A/D COUNTS
D7-10 = P21 24VAC #2 CURRENT VOLTAGE, IN A/D COUNTS
D20 = SUPPLEMENTAL POWER SUPPLY ENABLED (YES), DISABLED (NO)

SUPPLEMENTAL OUTPUTS (P53)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	A	U	D	1	E			A	U	D	2	E		S	H	T		O	P	T
B	V	X	X	X				V	X	X	X			X	X	X		X	X	X
C	S	T	A	T	:			S	T	A	T	:						S	W	:
D	O	F	F					O	F	F								X	X	X

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	DIAGNOSTICS (P5)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's		HLP	HELP (HL - PS3)

A1-5 = P8 AUD1 STATUS, ENABLED (E) DISABLED (D)
A8-12 = P9 AUD2 STATUS, ENABLED (E) DISABLED (D)
B1-4 = P8 AUD1 CURRENT VOLTAGE IN A/D COUNTS
B8-11 = P9 AUD2 CURRENT VOLTAGE IN A/D COUNTS
B14-16 = P8 & P9 AUD1 & 2 SHORT CKT. TROUBLE THRESHOLD IN A/D COUNTS
B18-20 = P8 & P9 AUD1 & 2 OPEN CKT. TROUBLE THRESHOLD IN A/D COUNTS
D1-3 = P8 AUD1 PRESENT STATUS: ACTIVATED (ON) OFF (OFF)
D8-10 = P9 AUD2 PRESENT STATUS: ACTIVATED (ON) OFF (OFF)
D20 = SW1 ENABLED (ENA) DISABLED (DIS) SWITCH STATUS

GROUND FAULT TEST (P54)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	G	R	O	U	N	D		F	A	U	L	T		T	R	B	:	X	X	X
B	G	R	O	U	N	D		F	A	U	L	T		C	N	T	:	X	X	X
C																				
D																				

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	DIAGNOSTICS (P5)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's	DATA ENTRY	HLP	HELP (HL - PS4)

A1-20 = GROUND FAULT TROUBLE THRESHOLD IN A/D COUNTS
B1-20 = PRESENT GROUND FAULT STATUS IN A/D COUNTS (COUNTER INCREASES AS GND FAULT OCCURS)

KEYPAD SWITCH TEST (P56)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A		K	E	Y	P	A	D		S	W	I	T	C	H		T	E	S	T	
B																				
C		L	A	S	T		K	E	Y		P	R	E	S	S	E	D	:		
D		X	X					X	X	X										

F1	F1 KEY PRESSED	F4	F4 KEY PRESSED
F2	F2 KEY PRESSED	F5	F5 KEY PRESSED
F3	F3 KEY PRESSED	F6	F6 KEY PRESSED
ESC	DIAGNOSTICS (P5)	ENT	ENTER KEY PRESSED
⇐	LEFT KEY PRESSED	⇒	RIGHT KEY PRESSED
# 's	KEY PRESSED	HLP	HELP (HL - P56)

D2-6 = INDICATION OF LAST KEY PRESSED
D8-10 = NUMBER OF TIMES LAST KEY PRESSED (0-255)

DIAGNOSTICS 2 (P55) Pressing F5 from DIAGNOSTICS 1 Menu accesses DIAGNOSTICS 2 Menu

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	1	-	B	U	Z	Z	E	R			4	-	B	A	C	K	L	I	T	E
B	2	-	L	E	D	S					5	-	M	O	R	E				
C	3	-	S	U	P		R	E	L		6	-	L	O	O	P		C	L	A
D	S	E	L	E	C	T		F	U	N	C	T	I	O	N		K	E	Y	

F1	BUZZER (P551)	F4	BACKLIGHT (P554)
F2	LEDS (P552)	F5	DIAGNOSTICS 3 (P555)
F3	SUP. RELAYS (P553)	F6	LOOP CLASS (P556)
ESC	DIAGNOSTICS (P)	ENT	
⇐		⇒	
# 's		HLP	HELP (HL - P55)

BUZZER TEST (P551)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	S	E	L	E	C	T		B	U	Z	Z	E	R		M	O	D	E	:	
B	X	X	X	X	X	X	X	X	X		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
C																				
D																				

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	DIAGNOSTICS 2 (P55)	ENT	
⇐		⇒	
# 's	SEE BELOW	HLP	HELP (HL - P551)

B1-9 PRESENT STATUS OF BUZZER, USE F1 OR F4 TO SWITCH BETWEEN OFF, CONSTANT, CHIRP, WARBLE, OR USE NUMBER KEYS:

1 = CONSTANT 3 = WARBLE
2 = CHIRP 0 = OFF

B11-20 TYPICAL STATE WHICH APPLIES TO BUZZER SOUND

LED TEST (P552)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	P	R	E		A	L			X		A	C		P	O	W	E	R		X
B	F	I	R	E		A	L		X		A	L		S	I	L	E	N		X
C	S	U	P	E	R	V	I		X		S	U		S	I	L	E	N		X
D	T	R	O	U	B	L	E		X		T	R		S	I	L	E	N		X

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	DIAGNOSTICS 2 (P55)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's		HLP	HELP (HL - P552)

Note: Use F1 & F2 to toggle LED status; 0 (OFF), 1 (ON).

A9 = PRESENT STATUS OF DISPLAY PRE-ALARM WARNING LED
A20 = PRESENT STATUS OF DISPLAY AC POWER LED
B9 = PRESENT STATUS OF DISPLAY FIRE ALARM
B20 = PRESENT STATUS OF DISPLAY ALARM SILENCE
C9 = PRESENT STATUS OF DISPLAY SUPERVISORY
C20 = PRESENT STATUS OF DISPLAY SUPERVISORY SILENCE
D9 = PRESENT STATUS OF DISPLAY TROUBLE
D20 = PRESENT STATUS OF DISPLAY TROUBLE SILENCE

SUPPLEMENTAL RELAYS (P553)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	S	U	P	P	L	E	M	E	N	T	A	L		R	E	L	A	Y	S	:
B											P	4	1			P	4	2		
C		T	R		A	L		S	U		1	2	3	4		1	2	3	4	
D			X			X			X		X	X	X	X		X	X	X	X	

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	DIAGNOSTICS 2 (P55)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's		HLP	HELP (HL - P553)

Note: Use F1 & F2 to toggle RELAY status; 0 (OFF), 1 (ON).

D3 = PRESENT STATUS OF P2 TROUBLE RELAY
D6 = PRESENT STATUS OF P2 ALARM RELAY
D9 = PRESENT STATUS OF P2 SUPERVISORY RELAY
D11-14 = PRESENT STATUS OF P41 RELAYS 1-4
D16-19 = PRESENT STATUS OF P42 RELAYS 1-4

Note: P2 trouble relay is normally energized. Status is 0 = ENERGIZED (matching board silkscreen for normal operation) until a trouble occurs, then it is 1 = De-ENERGIZED. Other relays status is 0 = De-ENERGIZED, 1 = ENERGIZED

BACKLIGHT TEST (P554)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A			B	A	C	K	L	I	T	E		I	S		O	N				
B																				
C																				
D																				

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	DIAGNOSTICS 2 (P55)	ENT	
⇐		⇒	
# 's	SEE BELOW	HLP	HELP (HL - P554)

A15-17 = PRESENT STATUS OF LCD BACKLIGHT, USE F1 & F2 KEY TO TOGGLE STATUS OFF/ON, OR USE "1" KEY FOR ON AND "0" KEY FOR OFF.

LOOP TEST (P556)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	L	O	O	P	:					1			2			3			4	
B	E	N	/	D	I	S				E			E			E			E	
C	C	L	A	/	C	L	B			B			B			B			B	
D	S	T	A	T	U	S			O	K		O	K		O	K		O	K	

F1		F4	
F2		F5	
F3		F6	
ESC	DIAGNOSTICS 2 (P55)	ENT	
⇐		⇒	
# 's		HLP	HELP (HL - P556)

Note: This Diagnostic screen is for present status only.

B10 = PRESENT STATUS OF P6 LOOP 1; ENABLED (E) / DISABLED (D)
B13 = PRESENT STATUS OF P7 LOOP 2; ENABLED (E) / DISABLED (D)
B16 = PRESENT STATUS OF P11 LOOP 3; ENABLED (E) / DISABLED (D)
B19 = PRESENT STATUS OF P12 LOOP 4; ENABLED (E) / DISABLED (D)
C10 = PRESENT STATUS OF P6 LOOP 1; LOOP 1 CLASS A (A) / CLASS B (B)
C13 = PRESENT STATUS OF P7 LOOP 2; LOOP 2 CLASS A (A) / CLASS B (B)
C16 = PRESENT STATUS OF P11 LOOP 3; LOOP 3 CLASS A (A) / CLASS B (B)
C19 = PRESENT STATUS OF P12 LOOP 4; LOOP 4 CLASS A (A) / CLASS B (B)
D9-10 = STATUS OF P6 LOOP 1; OK, NOT (OK)
D12-13 = STATUS OF P7 LOOP 2; OK, NOT (OK)
D15-16 = STATUS OF P11 LOOP 3; OK, NOT (OK)
D18-19 = STATUS OF P12 LOOP 4; OK, NOT (OK)

DIAGNOSTIC SCREEN 3 (P555) Pressing F5 from DIAGNOSTICS 2 Menu enters DIAGNOSTICS 3 Menu

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	1	-	A	D	R		L	O	C		4	-	P	R	O	C	E	S	S	
B	2	-	A	D	R		D	A	T		5	-	M	O	R	E				
C	3	-	A	D	R		F	I	R		6	-	A	D	R		O	U	T	
D	S	E	L	E	C	T		F	U	N	C	T	I	O	N		K	E	Y	

F1	ADDRESS LOCATION (P5551)	F4	PROCESS (P5554)
F2	ADDRESS DATA (P5552)	F5	DIAGNOSTIC SCREEN 1(P5)
F3	ADDRESS FIRE (P5553)	F6	
ESC	DIAGNOSTICS (P)	ENT	
⇐		⇒	
# 's		HLP	HELP (HL - P555)

ADDRESS LOCATION (P5551)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	X	-	Y	Y	Y	-	Y	Y	Y	/	Z	Z	Z		D	E	=	0	0	0
B	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
C																				
D																				

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	TURN ON LED	F5	
F3		F6	
ESC	DIAGNOSTICS 3 (P555)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's		HLP	HELP (HL - P5551)

A1: = LOOP NUMBER OF DEVICES SHOWN
A3-9 = STARTING ADDRESS / ENDING ADDRESS FOR DEVICES SHOWN IN IN ROW C & D
A11-13 = CURRENT DEVICE ADDRESS BEING POLLED
A15-20 =EXTRA DELAY BETWEEN DEVICE POLL (000 = NO DELAY, DE x 10m SEC)
C1-20 = DISPLAYS DEVICES CONFIGURED BETWEEN THE ADDRESSES NOTED IN LOOP / ADDRESS (A1-9)

DENOTED BY:
P = PHOTO
I = ION
H = HEAT
F = FRCM
O = SOM
S = SRM
R = R2M
* = INVALID OR MULTI DEVICES

UPPER CASE = ENABLED
LOWER CASE = DISABLED

D1-20 = DISPLAY DEVICES FOUND BETWEEN THE ADDRESSES NOTED IN A1-9. PLACE CURSOR ON ADDRESS. USE ENTER TO TOGGLE LED AT THAT ADDRESS OR IF F2 HAS BEEN PRESSED, 'L' INDICATES LED IS ON. PRESSING F2, WILL BLANK LINE D. POSITION CURSOR WITH ARROWS UNTIL ON DESIRED ADDRESS. USE F1 & F4 KEYS TO TOGGLE LED STATUS

ADDRESSABLE DATA (P5552)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	X	-	Y	Y	Y	/	X	X	X	-	Z	Z	Z	Z	Z	=	0	0	0	D
B	A	0	0	0		N	0	0	0	-	Z	Z	Z	Z	Z		M	0	0	0
C	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7		C	0
D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	N	0	0	0

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	LOOP POLL/ADDR. POLL	F5	
F3		F6	
ESC	DIAGNOSTICS 3 (P555)	ENT	
⇐		⇒	
# 's	DATY ENTRY	HLP	HELP (HL - P5552)

A1-5 = LOOP-ADDRESS OF DEVICE
A7-9 = CURRENT ADDRESS OF DEVICE BEING POLLED (OR LOOP POLL BY PRESSING F2)
A11-15 = TYPE OF DEVICE CONFIGURED AT THIS LOOP-ADDRESS (PHOTO, ION, HEAT, FRCM, SOM, SRM, R2M)
A17-19 = VALUE RETURNED FROM DEVICE AT THIS ADDRESS, LAST POLL
A20 = ENABLE (E) / DISABLE (D) STATUS OF THIS LOOP-ADDRESS
B2-4 = TOTAL NUMBER OF ACK'S RECEIVED BY DEVICE
B7-9 = TOTAL NUMBER OF NACK'S RECEIVED BY DEVICE
B11-15 = TYPE OF DEVICE FOUND AT THIS LOOP-ADDRESS (PHOTO, ION, HEAT, FRCM, SOM, SRM, R2M)
B18-20 = TOTAL NUMER OF RESPONSES FROM THIS DEVICE
C20 = STATUS DISPLAYED IN D18-20:

0 - DEVICE MISSING COUNTS
1 - INVALID RESPONSE/ CHECKSUM ERROR COUNTS
2 - MULTIPLE DEVICES COUNTS
3 - INTERNAL FAULT COUNTS
4 - WRONG TYPE OF DEVICE COUNTS

D1: 1 = LED IS ON 0 = LED IS OFF (PRESS F1 OR F4 TO TOGGLE LED STATUS)
D2: 1 = CONFIGURATION FAULT IN SOM TABLE 0 = NO FAULT (CHECKSUMS OK)
— = NOT APPLICABLE (NOT AN SOM)
D3: 0 = DEVICE IS PRESET 1 = NOT PRESET
D4 1 = DEVICE IN TROUBLE, COMMUNICATION CHECKSUM ERROR
D5 1 = MULTILE DEVICE TROUBLE PRESENT AT THIS ADDRESS
D6 1 = INTERNAL FAULT FROM 08 POLL COMMAND
D7 1 = WRONG DEVICE TYPE AT THIS ADDRESS
D8 1 = ANALOG DEVICE TROUBLE, CONTAMINATION 0 = NOT CONTAMINATED
— = NOT ANALOG DEVICE
D9 1 = ANALOG DEVICE IN TROUBLE, OUT OF RANGE TEST POINT 0 = TEST POINT OK
— = NOT ANALOG DEVICE
D10 Y = SRM / SOM ON FOR R2M: N = BOTH RELAYS OFF 1 = RELAY 1 ON
N = OUTPUT IS OFF 2 = RELAY 2 ON B = BOTH RELAYS ON
— NOT AN OUTPUT DEVICE
D11: 1 = ANALOG DEVICE IN TROUBLE, CALIBRATION ERROR
1 = FRCM IN TROUBLE, CONFLICT BETWEEN CONTACT CONFIGURATION AND DEVICE RESPONSE
1 = SOM CONFIGURATION DOES NOT MATCH PANEL
1 = SRM CONFIGURATION DOES NOT MATCH PANEL
0 = NO CONFIGURATION FAULT
D12 N = FRCM/SOM/R2M/SRM SUPERVISED CIRCUIT IS NORMAL
S = FRCM/SOM/R2M/SRM SUPERVISED CIRCUIT HAS A SHORT
0 = FRCM/SOM/R2M/SRM SUPERVISED CIRCUIT HAS AN OPEN
— = NOT APPLICABLE (ANALOG DEVICE

D13: 1 = ANALOG DEVICE LOADED WITH ALARM #1 SENSITIVITY LEVEL
2 = ANALOG DEVICE LOADED WITH ALARM #2 SENSITIVITY LEVEL
— = NOT ANALOG DEVICE
D14: 1 = DEVICE SELECTED FOR CONFIGURATION
0 = NOT SELECTED
D15 1 = DEVICE SELECTED FOR CALIBRATION
0 = NOT SELECTED
D16 3 = DEVICE (ANALOG OR FRCM) IN ALARM (ACTIVE)
2 = ANALOG DEVICE IS IN PRE-ALARM, 2 STATE
1 = ANALOG DEVICE IS IN PRE-ALARM, 1 STATE
0 = DEVICE IS NORMAL (NOT ACTIVE)
— = NOT AN INPUT DEVICE
D17 N = NO GROUND FAULT PRESENT
D18-D20 = (REFER TO C20)

INTERRUPT PROCESS (P5554)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	1	-	Y	Y	Y		I	N	T	E	R	R		0	0	0	-	0	0	0
B	L	E	V	E	L	:				C	=	0	0	0		V	=	0	0	0
C	G	R	O	U	P	:				C	=	0	0	0		V	=	0	0	0
D	A	D	D	R	E	S	S	:		C	=	0	0	0		V	=	0	0	0

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	DIAGNOSTICS 3 (P555)	ENT	
⇐		⇒	
# 's		HLP	HELP (HL - P5554)

A1 = LOOP NUMBER OF INTERRUPT PROCESS DISPLAY (1-4)
A3-5 = CURRENT ADDRESS BEING POLLED ON LOOP DISPLAYED
A14-20 = A TWO-BYTE RESPONSE FROM VERIFIED INTERRUPT (FACTORY USE ONLY)
B12-14 = CURRENT LEVEL OF INTERRUPT OF DEVICE SHOWN (1-3)
1 = HIGHEST PRIORITY, FRCM DEFAULT
2 = MEDIUM PRIORITY, SENSORS
3 = LOWEST PRIORITY
B18-20 = LAST VERIFIED LEVEL OF INTERRUPT OF DEVICE SHOWN (1-3)
C12-14 = CURRENT GROUP OF INTERRUPT OF DEVICE SHOWN (1-17)
GROUP 1 = ADDRESS 1-7 9 = ADDRESS 64-71
2 = ADDRESS 8-15 10 = ADDRESS 72-79
3 = ADDRESS 16-23 11 = ADDRESS 80-87
4 = ADDRESS 24-31 12 = ADDRESS 88-95
5 = ADDRESS 32-39 13 = ADDRESS 96-103
6 = ADDRESS 40-47 14 = ADDRESS 104-111
7 = ADDRESS 48-55 15 = ADDRESS 112-119
8 = ADDRESS 56-63 16 = ADDRESS 120-127
C18-20 = LAST VERIFIED GROUP OF INTERRUPT OF DEVICE SHOWN (1-16)
D12-14 = CURRENT ADDRESS OF INTERRUPT OF DEVICE SHOWN (1-127)
D18-20 = LAST VERIFIED ADDRESS OF INTERRUPT OF DEVICE SHOWN (1-127)

ADDRESSABLE OUTPUT INDEX TEST (P5556A)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	X	-	Y	Y	Y	-	Y	Y	Y		I	N	D	E	X		T	E	S	T
B	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
C																				
D																				

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	DIAG 3 (P555)	ENT	INDEXTST (P5556B)
⇐	LEFT	⇒	RIGHT
#'s		HLP	HELP (HL - P5556A)

A1-9 = LOOP - ADDRESS RANGE OF DEVICES SHOWN IN ROW C
C1-20 = TYPE OF DEVICE CONFIGURED @ ADDRESS LOCATION
D1-20 = USE AS LOCATION TO PRESS ENTER ON ADDRESS TO TEST ("O" OR "R" TYPE DEVICES ONLY)

SOM/R2M INDEX TEST (P5556B)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	X	-	Y	Y	Y	-	Z	Z	Z		I	D	X	:	X	X	/	Y	Y	Y
B	C	O	U	N	T	:	X	X	X		P	A	T	T	E	R	N	:	X	X
C	F	2		R	E	A	D				F	5		C	L	R		C	N	T
D	F	3		W	R	I	T	E			F	6		R	E	S		D	E	V

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	READ INDEX CNTR	F5	CLEAR INDEX CNTR
F3	WRITE INDEX CNTR	F6	SEND RESET COMMAND
ESC	RETURN (P5556A)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
#'s	DATA ENTRY	HLP	HELP (HL - P5556B)

A1-5 = LOOP - ADDRESS OF DEVICE
A7-9 = TYPE OF DEVICE CONFIGURED @ ADDRESS LOCATION (SOM OR R2M)
A15-16 = INDEX NUMBER TESTING
A18-20 = CURRENT PATTERN OPERATING AT SOM (DOES NOT APPLY TO R2M)
B7-9 = ZONE ACTIVATION COUNTER FOR THIS INDEX POSITION (A15-16)
B19-20 = PATTERN FOR INDEX POSIITION IN A15-16

DIAGNOSTIC SCREEN 4 (P5555)
Pressing F5 from DIAGNOSTICS 3 menue enters DIAGNOSTICS 4.

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	-	M	S	G		T	S	T		4	-									
B	-	O	U	T		C	H	K		5	-	M	O	R	E					
C	-	S	Y	S		P	W	R		6	-									
D	S	E	L	E	C	T		F	U	N	C	T	I	O	N		K	E	Y	

F1	MESSAGE TEST (P55551)	F4	
F2	OUT CFG TST (P55552)	F5	DIAGN 1 (P5)
F3	SYS PWR (P55553)	F6	
ESC		ENT	
⇐		⇒	
#'s		HLP	HELP (HL - P5555)

MESSAGE TEST (P55551)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	Z	O	N	E	-	S	T	A	T	E	:		X	X	X	-	Z	Z	Z	Z
B	T	E	S	T		I	N	T	E	R	V	A	L	:		Y	Y	Y	S	
C	N	U	M	B	E	R		O	F		T	E	S	T	S	:		X	X	X
D	P	R	E	S	S		E	N	T	E	R		T	O		S	T	A	R	T

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	PAUSE TEST	F5	PAUSE TEST
F3	PAUSE TEST	F6	PAUSE TEST
ESC	DIAG 4 (P5555)	ENT	START TEST
⇐	LEFT	⇒	RIGHT
#'s	DATA ENTRY	HLP	HELP (HL - P55551)

Password level 4 access only. See Chapter 12.

OUTPUT CONFIGURATION TEST (P55552)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	P	R	E	S	S		E	N	T	E	R		T	O		T	E	S	T	
B	O	U	T	P	U	T		C	O	N	F	I	G	U	R	A	T	I	O	N
C	1	-	X	X	X	-	Y	Y	Y		Z	-	X	X	X	-	Y	Y	Y	
D	3	-	X	X	X	-	Y	Y	Y		4	-	X	X	X	-	Y	Y	Y	

F1		F4	
F2		F5	
F3		F6	
ESC	DIAG. 4 (P5555)	ENT	START TEST
⇐		⇒	
#'s		HLP	HELP (HL - P55552)

C3-5 = TOTAL NUMBER OF OUTPUTS WHICH WILL BE VERIFIED FOR LOOP 1
C7-9 = CURRENT ADDRESS BEING POLLED ON LOOP 1
C13-15 = TOTAL NUMBER OF OUTPUTS WHICH WILL BE VERIFIED FOR LOOP 2
C17-19 = CURRENT ADDRESS BEING POLLED ON LOOP 2
D3-5 = TOTAL NUMBER OF OUTPUTS WHICH WILL BE VERIFIED FOR LOOP 3
D7-9 = CURRENT ADDRESS BEING POLLED ON LOOP 3
D13-15 = TOTAL NUMBER OF OUTPUTS WHICH WILL BE VERIFIED FOR LOOP 4
D17-19 = CURRENT ADDRESS BEING POLLED ON LOOP 4

SYSTEM POWER (P55553)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	S	Y	S	T	E	M		P	O	W	E	R	:		X	X	X			
B	L	O	W	E	R		L	I	M	I	T	:			0	9	5			
C	U	P	P	E	R		L	I	M	I	T	:			1	0	4			
D	S	T	A	T	U	S	:		O	K										

F1		F4	
F2		F5	
F3		F6	
ESC	DIAG. 4 (P5555)	ENT	
⇐		⇒	
#'s		HLP	HELP (HL - P55553)

CHAPTER 11 Configuration (CSC keypad, level 3 password)

Menu options available under this level of access are:

LEVEL 1	HISTORY:	ALARM, EVENT, ZONE, CURRENT
	PASSWORD:	(ENTRY)
	SPECIAL:	LEVELS, SETTIME
LEVEL 2	ENABLE / DISABLE:	ZONES, DEVICES, CIRCUITS, COMMUNICATION
	SPECIAL:	SENSE, RESET, HI-LO LEVELS, WALKTEST
	DIAGNOSTICS	
LEVEL 3	**CONFIG:**	**DEVICES, ZONES, SYSTEM, LEARN, TO DEV, SPECIAL**
	SYSTEM:	**I/O CKT, MESSAGE, PATTERN, TIME GRP**
	SPECIAL:	**CAL SEN, TIMEOUT, ERRCHK, DEV ADDR, CAL TIME**

11.1 LEVEL 3 PASSWORD OPERATION

Level 3 password allows access to system configuration along with lower priority tasks per previous chapters. Level 3 password entry method is per Section 5.3. Access to all menu functions is via the main menu options below.

This chapter describes system configuration using the capabilities integrated in the CSC Controller. Configuring the system via the external Cheetah Tracker program is described in a separate manual.

Pressing F6 from the Main Menu accesses the “Configuration Display” where specific configuration options can be accessed. Upon entry to CONFIG menu the panel records a trouble event “CONFIG MENU ACCESSED” which can be cleared by RESET only.

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	1	-	H	I	S	T	O	R	Y		4	-	E	N	A	B	L	E		
B	2	-	P	A	S	S	W	R	D		5	-								
C	3	-	S	P	E	C	I	A	L		6	-	C	O	N	F	I	G		
D	S	E	L	E	C	T		F	U	N	C	T	I	O	N		K	E	Y	

F1	HISTORY (H)	F4	ENABLE/DISABLE (E)LEVEL2
F2	PASSWORD (A)	F5	
F3	SPECIAL (P)	F6	CONFIGURATION (C)LEVEL 3
ESC	RETURN TO SYS MSG (1)	ENT	
⇐		⇒	
# 's		HLP	

11.2 CONFIGURATION MENU OPTIONS

The Configuration display allows configuration of:

F1- Devices;	Setup of devices on the loop.	Section 11.3
F2- Zones;	Setup of zone types.	Section 11.4
F3- System;	Setup power, timebase parameters, CSC circuits, etc.	Section 11.5
F4- Learn;	Special modes to self learn devices.	Section 11.6
F5- To Dev.;	To download configuration data to devices.	Section 11.7
F6- Special;	Specials including address set, calibration, etc.	Section 11.8

CONFIGURATION (C)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	1	-	D	E	V	I	C	E	S		4	-	L	E	A	R	N			
B	2	-	Z	O	N	E	S				5	-	T	O		D	E	V		
C	3	-	S	Y	S	T	E	M			6	-	S	P	E	C	I	A	L	
D	S	E	L	E	C	T		F	U	N	C	T	I	O	N		K	E	Y	

F1	DEVICE CONFIG (C1)	F4	SELF-LEARN (C4)
F2	ZONE CONFIG (C2)	F5	DOWNLOAD TO DEV. (C5)
F3	SYSTEM VARIABLES(C3)	F6	SPECIAL (C6)
ESC	RETURN (M)	ENT	
⇐		⇒	
# 's		HLP	

11.3 CONFIGURE DEVICES

11.3.1 Configure Device Video Information

Pressing F1 from the Configuration video allows access to the device configuration display. It supports entry and storage of device configurations into CSC Controller memory. The display’s

third and fourth lines differ depending upon the "device type" selected in the display top line. Configuration requires selection of loop number and address in the display upper left using data entry, F1, and F2 keys. Next, with the cursor in the display top center, use F1 and F2 to cycle through the displays of device types allowed.

11.3.2 Photo, Ion, & Heat Sensors
11.3.3 FRCM Inputs
11.3.4 SRM Outputs
11.3.5 SOM Outputs
11.3.6 R2M Outputs

All devices require entry of configuration data on this primary display. After completion, assignment of zones is required using the F2 key to access the "Zone Assignment" display as described in 11.3.2.2. Devices can be assigned up to 32 zones so multiple "zone entry" displays are often required.

Usually, many devices shall have very similar configurations. Setup of one device (of each type), then use of the device copy display per 11.3.2.3 is an efficient method to configure such systems. Likewise, use of the F6 key to enter a default message for each device can be efficient.

After entry of all output device configurations (SOM, SRM & R2M), the "To Device" display on the main configuration video is used to download the configurations to the individual devices.

ADDRESSABLE DEVICE CONFIG (C1)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	1	-	H	I	S	T	O	R	Y		4	-	E	N	A	B	L	E		
B	2	-	P	A	S	S	W	R	D		5	-								
C	3	-	S	P	E	C	I	A	L		6	-	C	O	N	F	I	G		
D	S	E	L	E	C	T		F	U	N	C	T	I	O	N		K	E	Y	

F1	HISTORY (H)	F4	ENABLE/DISABLE (E)LEVEL2
F2	PASSWORD (A)	F5	
F3	SPECIAL (P)	F6	CONFIGURATION (C)LEVEL 3
ESC	RETURN TO SYS MSG (1)	ENT	
⇐		⇒	
# 's		HLP	

A1 = LOOP NUMBER (CYCLE WITH F1 & F4)
A3-5 = ADDRESS (EDITABLE VIA NUMERIC KEYS, CYCLE WITH F1 & F4)
A7-12 = DEVICE TYPE (CYCLE WITH F1 & F4). USE BLANK TYPE "——" TO DELETE DEVICE.
A14-20 = FUNCTION (CYCLE WITH F1 & F4: FUNCTIONS ARE ALLOWED PER DEVICE TYPE).

11.3.2 Photo, Ion, & Heat Sensors

11.3.2.1 Sensor Configuration Video

IF SENSOR TYPE (SMOKE OR HEAT) (C1A)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	Y	-	X	X	X		T	T	T	T	T	T		F	F	F	F	F	F	F
B	C	U	S	T	O	M		M	E	S	S	A	G	E	.	.	.	.	.	.
C	S	1	<	S	2	<	P	1	<	P	2	<	A	V		T	B		D	E
D	X	X		X	X		X	X		X	X		X	X		X	X		X	X

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	ZONE ASSIGNMENT(C12)	F5	TO DEFAULT CONFIG (C15)
F3	COPY ADDRESS (C13)	F6	DEFAULT MESSAGES
ESC	RETURN (C)	ENT	ACCEPT CHANGE
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's	DATA ENTRY	HLP	HELP (HL - C1)

A1-5 = LOOP NUMBER /ADDRESS
A7-11 = DEVICE TYPE (ION, PHOTO, HEAT)
A12 = TYPE OF PHOTO (L = LOW AIR VELOCITY, H = HIGH AIR VELOCITY)
A14-20 = FUNCTION {= DETECT}
B1-20 = DEVICE CUSTOM MESSAGE (EDIT BY NUMERIC KEY PAD) F6 = DEFAULT
C9 = PREALARM1 ENABLED (<)/DISABLED ( )
C12 = PREALARM2 ENABLED (<)/DISABLED ( )
D1-2 = ALARM SENSITIVITY LEVEL1 (DEFAULT = 25)
D4-5 = ALARM SENSITIVITY LEVEL2 (TYPICALLY FOR DAY OPERATION)DEFAULT = 25D7-11 = PRE-ALARM1 & PRE-ALARM 2 SENSITIVITY LEVELS DEFAULT = 25
D13-14 = ALARM VERIFICATION DELAY. (NO, 10-60 SECS; FOR NON-RELEASING SENSORS ONLY).
D16-17 = TIME BASE CONTROL GROUP. (00= OFF OR 1-15) USES S2 ALARM SENSITIVITY
D19 = DRIFT COMPENSATION (Y/N). (F1 OR F4 TO TOGGLE WITH CURSOR @ C19)
D20 = ENABLE STATUS (E/D). (F1 OR F4 TO TOGGLE WITH CURSOR @ C20)

11.3.2.2 Device Zone Assignments (F2 from Configuration Menu Options)

DEVICE ZONE ASSIGNMENTS (C1A2) -FOUR SCREENS TO ALLOW 32 ZONES

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	Y	-	X	X	X		T	T	T	T	T	T		F	F	F	F	F	F	F
B																				
C	Z	Z	Z		Z	Z	Z		Z	Z	Z		Z	Z	Z		Z	Z	Z	
D	Z	Z	Z		Z	Z	Z		Z	Z	Z		Z	Z	Z		Z	Z	Z	

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	NEXT ZONE GROUP	F5	TO DEFAULT CONFIG (C15)
F3	COPY ADDRESS (C13)	F6	
ESC	RETURN (C1A)	ENT	ACCEPT CHANGES (C1A)
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's	DATA ENTRY	HLP	HELP (HL - C1A)

A1-5 = LOOP NUMBER/ ADDRESS
A7-20 = DEVICE TYPE/ DEVICE FUNCTION
B1-20 = DEVICE CUSTOM MESSAGE
C1-D20= ZONE ASSIGNMENTS (EDIT BY NUMERIC KEYPAD OR F1, F4)
Note: UP TO 32 ZONES ALLOWED; F2 CYCLES THRU OTHER ZONE SCREENS.
--- WILL BLANK OUT ZONES IN HIGHER POSITIONS, INSTALL A ZONE NUMBER AGAIN AND THE ZONES PREVIOUSLY THERE WILL REAPPEAR.

11.3.2.3 Addressable Device Copy (F3 from Main Device Menu (C1)

ADDRESSABLE DEVICE COPY (C1A3)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	Y	-	X	X	X		T	T	T	T	T	T		F	F	F	F	F	F	F
B		C	O	P	Y		A	L	L		C	O	N	F	I	G		T	O	:
C	Y	-	X	X	X															
D		P	R	E	S	S		E	N	T	E	R		T	O		C	O	P	Y

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	RETURN (C1A)	ENT	PERFORM COPY
⇐	LEFT	⇒	RIGHT
# 's	ADDR DATA ENTRY	HLP	HELP (HL - C1A3)

A1-5 = LOOP/ ADDRESS NUMBER OF DEVICE WITH PERTINENT DATA FOR COPY FROM.
A7-20 = DEVICE TYPE / DEVICE FUNCTION
C1-5 = LOOP/ ADDRESS NUMBER OF DEVICE TO COPY CONFIG DATA TO.

11.3.2.4 Addressable Device Default Config

DEFAULT CONFIG (C15)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	P	R	E	S	S		E	N	T	E	R		T	O		S	T	O	R	E
B	D	E	F	A	U	L	T		C	O	N	F	I	G		F	O	R		
C	P	H	O	T	O		D	E	V	I	C	E	S							
D																				

F1		F4	
F2		F5	
F3		F6	
ESC	RETURN (C1)	ENT	STORE TO DEFAULT
⇐		⇒	
# 's		HLP	HELP (HL - C15)

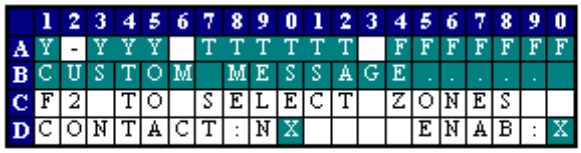
PRESS ENTER TO STORE THE CONFIGURATION OF THIS DEVICE INTO THE DEFAULT CONFIGURATION.
DEFAULT CONFIGURATIONS FOR EACH DEVICE FROM THE FACTORY ARE SET TO:

PHOTO:	Z1, S1, S2, P1, P2 = 25	AV = NO	TB = 00	D = Y	E = E
ION:	Z1, S1, S2, P1, P2 = 80	AV = 0	TB = 00	D = Y`	E = E
HEAT:	Z1, S1, S2, P1, P2 = 40	AV = 0	TB = 00	D = Y	E = E
FRCM:	Z1, MANALRM, NO, E				
SOM:	MESSAGEZONE 1, WALKTEST = E, DEVICE ENABLED, INDEX 0 = ALRM, Z1, PTI, S=Y, INDEX 1-15 = NONE				
SRM:	Z1, 24V SOL, NO STATE	ENAB: D	TIME: CONTIN		
R2M:	MESSAGE ZONE 1, WALKTEST ENABLED, DEVICE ENABLED, INDEX 0 = ALARM ZONE 1	R1 = Y	R2 = Y	0 = 0	
	INDEXES 1-15 = NONE	R1 = N	R2 = N	0 = 0	

Note: If the learn function is used the default config is loaded for the device.

11.3.3 FRCM Input Contact Monitoring Devices

IF CONTACT MONITORING (FRCM)TYPE (C1B)



F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	ZONE ASSIGNMENT(C1A2)	F5	DEFAULT CONFIG (C15)
F3	COPY ADDRESS (C1A3)	F6	DEFAULT MESSAGE
ESC	RETURN (C)	ENT	ACCEPT CHANGE (C1)
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's	DATA ENTRY	HLP	HELP (HL - C1)

A1-5 = LOOP NUMBER / ADDRESS
A7-12 = DEVICE TYPE {=FRCM}
A14-20 = FUNCTION (MANREL, ABORT, RESET, DETECT, MANALRM, WATERFL, SUPER, (NONE LATCHING), PROCESS, DRILL, TROUBLE, REL-WCT, ZNE-DIS, SILENCE SUPER-L) (LATCHING)
B1-20 = DEVICE CUSTOM MESSAGE (EDIT BY NUMERIC KEYPAD)
F6 FOR DEFAULT MESSAGE
D10 = CONTACT TYPE: (NO OR NC) {NORMALLY OPEN OR NORMALLY CLOSED}

NO ONLY	NO/NC
REL-WCT	DRILL
DETECT	TROUBLE
MANALRM	SUPER
WATERFL	PROCESS
MANREL	ZONE-DIS
ABORT	SILENCE
RESET	SUPER-L

D20 = DEVICE ENABLED/DISABLED (E/D)

From this display, zones can be assigned via F2 per 11.3.2.2 description.

11.3.4 SRM Releasing Output Devices

IF ARM/SOLENOID (SRM) TYPE (C1C)

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	ZONE ASSIGNMENT(C1A2)	F5	DEFAULT CONFIG (C15)
F3	COPY ADDRESS(C1A3)	F6	DEFAULT MESSAGE
ESC	RETURN (C)	ENT	ACCEPT CHANGE (C1)
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's	DATA ENTRY	HLP	HELP (HL - C1)

A1-5 = LOOP NUMBER / ADDRESS
A7-11 = DEVICE TYPE {=SRM}
A17-20 = ACTIVATION STATE (ALRM, PRED, RELE, WMST) {LATCHING STATES}
B1-20 = DEVICE CUSTOM MESSAGE (EDIT BY NUMERIC KEYPAD)
F6 FOR DEFAULT MESSAGE
C15-20 = FUNCTION TYPES (ARM, 12VSOL,24VSOL, CITY T FOR CITY TIE/MASTERBOX) SETS WIRING/SUPERVISION LIMITS
D6-9 = SOLENOID "ON" TIME 1-127 SEC, IN 1 SEC INCREMENTS
10-1270 SEC IN 10 SEC INCREMENTS
CONTIN = CONTINUOUS OPERATION
D20 = DEVICE ENABLED/DISABLED (E/D)

Note: "Solenoid on time" is the duration the solenoid is activated upon entering the release state. Reset of the system over-rides this value. Always use "TO DEV" after completing configuration information on SRM, SOM, & R2M devices.

Note: Each "releasing" zone must have at least one SRM, one manual release and be programmed for the release function. See Section 11.3.3 for programming a manual release input and Section 11.4.1 for programming zone for release function.

Note: When configured for 12VSOL operation, the SRM will output 24V in order to activate 2 12V solenoids in series. Refer to Section 14.7 for wiring diagrams.

11.3.5 SOM Output Devices

11.3.5.1 General SOM & R2M Information.

The SOM and R2M devices are setup to respond in a powerful, event driven manner. Chapter 5 describes these powerful setup features. Setup is accomplished through the following displays.

SOM and R2M devices do not have unique custom messages, rather they are assigned to a zone's custom message. This need not be a zone the device is assigned to (or used in the system). Therefore, with 250 unique zone messages, many options are available.

Note: Use "TO DEV" if CONFIGURATION FAULT is encountered on SRM, SOM, & R2M devices, or if patterns are changed after configuration.

11.3.5.2 SOM Configuration Video

IF SUPERVISED OUTPUT (SOM) TYPE (C1D)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	Y	-	Y	Y	Y		T	T	T		M	Z	X	X	X		W	E		D
B	Z	O	N	E		C	U	S	T	O	M		M	E	S	S	A	G	E	
C	I	#		S	T	A	T		Z	N	E		P	T		O		S		R
D	X	X		X	X	X	X		X	X	X		X	X		X		X		X

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	MULTI-ZONE TABLE (C1D2)	F5	TO DEFAULT (C15)
F3	COPY ADDRESS (C1A3)	F6	
ESC	RETURN (C)	ENT	ACCEPT CHANGE (C1)
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's	DATA ENTRY	HLP	HELP (HL - C1)

A1-5 = LOOP NUMBER / ADDRESS
A7-9 = DEVICE TYPE {=SOM}
A13-15 = POINTER TO ZONE # FOR CUSTOM MESSAGE EDITING.
A17-18 = DEVICE WALK-TESTABLE (WE= ENABLED ,WD=DISABLED)
A20 = DEVICE ENABLED/ DISABLED (E,D)
B1-20 = CUSTOM MESSAGE, SHARED WITH ZONES. SELECT WITH POINTER @ A13-15
D1-2 = PRIORITY TABLE INDEX POSITION (0-15)
D4-7 = STATE FOR PRIORITY TABLE INDEX (NONE, PROCESS, TRB, SUPR, DRLL, ABRT, PAL1, PAL2, ALRM, PRED, RELE, WMST)
D9-11 = ZONE FOR PRIORITY TABLE INDEX (1-240, 255 = ALL ZONE, 254 = MUTLTIZONE)
D13-14 = PATTERN FOR PRIORITY TABLE INDEX (0-15) (See chapter 7.5.4 for programming patterns)
D16 = OP CODE FOR PRIORITY TABLE INDEX (0-3, 0 USED FOR MOST APPLICATIONS) *see below
D18 = SILENCEABLE (Y/N)
D20 = RESOUND AFTER NEW EVENT (Y/N)

*OP CODES:

0 = Use Index number as priority level, ranging from 0 to 15, with 0 being the lowest priority and 15 the highest.
1 = Assigns this index number to have the same priority as the next indext number. (OR)
2 = This index number and the next index number must both be active for the device to use the pattern. (AND) The device uses the pattern of the first index number where the AND begins.
3 = This OP code is used to show the end of an AND function.

11.3.5.3 SOM & R2M Multi-Zone Table Setup. (F2 from Device Screen)

SOM & R2M MULTI-ZONE TABLES (C1D2)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	Y	-	Y	Y	Y		S	O	M		Z	N	:	Z	Z	Z	-	Z	Z	Z
B	D	E	V	.		C	U	S	T	O	M		M	E	S	S	A	G	E	
C	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
D	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3	COPY ADDRESS (C1A3)	F6	
ESC	RETURN (C1D or C1E)	ENT	ACCEPT CHANGE
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's		HLP	HELP (HL - C1D2)

A1-5 = LOOP NUMBER / ADDRESS
A7-9 = DEVICE TYPE {= SOM OR R2M)
A14-20 = ZONE GROUP (20 ZONES) DISPLAYED @ D1-D20 ON LOWEST LINE.
B1-20 = DEVICE CUSTOM MESSAGE
D1-20 = INDICATION IF ZONE IS IN MULTI-ZONE TABLE (Y=YES, N= NO)

11.3.6 R2M Relay Devices

IF RELAY (R2M) TYPE (C1E)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	Y	-	Y	Y	Y		T	T	T		M	Z	X	X	X		W	E		D
B	Z	O	N	E		C	U	S	T	O	M		M	E	S	S	A	G	E	
C	I	#		S	T	A	T		Z	N	E		R	1		R	2			0
D	X	X		X	X	X	X		X	X	X		X	X		X				X

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	MULTI-ZONE TABLE (C1D2)	F5	TO DEFAULT CONFIG (C15)
F3	COPY ADDRESS (C1A3)	F6	
ESC	RETURN (C)	ENT	ACCEPT CHANGE
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's	DATA ENTRY	HLP	HELP (HL - C1)

A1-5 = LOOP NUMBER / ADDRESS
A7-9 = DEVICE TYPE {=SOM}
A13-15 = POINTER TO ZONE # FOR CUSTOM MESSAGE EDITING.
A17-18 = DEVICE WALK-TESTABLE (WE= ENABLED ,WD=DISABLED)
A20 = DEVICE ENABLED/ DISABLED (E,D)
B1-20 = CUSTOM MESSAGE, SHARED WITH ZONES. SELECT WITH POINTER @ A13-15
D1-2 = PRIORITY TABLE INDEX POSITION (0-15)
D4-7 = STATE FOR PRIORITY TABLE INDEX (NONE, PROCESS, TRB, SUPR, DRLL, ABRT, PAL1, PAL2, ALRM, PRED, RELE, WMST)
D9-11 = ZONE FOR PRIORITY TABLE INDEX (1-240, 255 = ALL ZONE, 254 = MUTLTIZONE)
D14 = STATUS OF RELAY COIL #1 FOR INDEX POSITION Y = ON N = OFF
D17 = STATUS OF RELAY COIL #2 FOR INDEX POSITION Y = ON N = OFF
D20 = OP CODE FOR PRIORITY TABLE INDEX 0-3, 0 USED FOR MOST APPLICATIONS) *see below

*OP CODES:

0 = Use Index number as priority level, ranging from 0 to 15, with 0 being the lowest priority and 15 the highest.
1 = Assigns this index number to have the same priority as the next indext number. (OR)
2 = This index number and the next index number must both be active for the device to use the pattern. (AND) The device uses the pattern of the first index number where the AND begins.
3 = This OP code is used to show the end of AND function.

11.4 CONFIGURE ZONES

11.4.1 Configure Zone Video Information

Pressing F2 from the Configuration display allows access to the "Zone Configuration" display. It supports entry and storage of zone configurations into CSC Controller memory. The displays third and fourth lines differ depending upon the "zone type" selected in the display top line. Configuration requires selection of zone number in the upper left of the display. Next, with the cursor in the display (A10) top center; use F1 and F2 to cycle through the displays of zone types allowed.

11.4.2 Suppression Zones (SUP) C2A

11.4.3 Alarm-Only Zones (ALM) (C2B)

Zones require configuration data entry on this primary display. Zones often have similar configurations. Setup of one zone (of each type), then use of the 11.4.2.2 zone copy video is an efficient method to configure such systems. Also, use of the F6 key to enter a default message for each zone can be efficient.

Note: Assigning of devices to particular zones is via the device configuration display, not in the Zone Config display of this section.

ZONE CONFIGURATION (C2)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	Z	N	E	:	X	X	X		T	T	T	-	F	F	F	F	F	F		
B	C	U	S	T	O	M		M	E	S	S	A	G	E						
C																				
D															E	N	A	B	:	X

F1	DECR. FIELD @ CURSOR	F4	DECR. FIELD @ CURSOR
F2	WMST CYCLE (C22)	F5	
F3	COPY ZONE DATA (C2A3)	F6	DEFAULT MESSAGE
ESC	RETURN (C)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's	DATA ENTRY	HLP	HELP (HL - C2)

SELECTING TYPE ADVANCES TO EITHER C2A OR C2B SCREEN.
A5-7 = ZONE NUMBER (EDIT BY NUMERIC KEYPAD) ZONES 1 - 240 EDITABLE
A9-11 = ZONE TYPE (SUP, ALM)
A13-18 = ZONE DETECTION FUNCTION (SUP = COUNTZ, CROSSZ, SINREL/ALM = ALARM
B1-20 = ZONE CUSTOM MESSAGE (EDIT BY NUMERIC KEYPAD) F6 FOR DEFAULT
D = ENABLED (E) DISBLED (D)

11.4.2 Suppression Zones

11.4.2.1 Suppression Zone configuration

IF SUPPRESSION ZONE TYPE (C2A)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	Z	N	E	:	X	X	X		T	T	T	-	F	F	F	F	F	F		
B	C	U	S	T	O	M		M	E	S	S	A	G	E	-	-	-	-	-	-
C	D	E	L	A	Y		M	A	N	:	X	X		A	U	T	O	:	X	X
D	A	B	O	R	T	:	X		M	R	:	X			E	N	A	B	:	X

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	WMST CYCLE (C22)	F5	
F3	COPY ZONE DATA (C2A3)	F6	DEFAULT MESSAGE
ESC	RETURN (C2)	ENT	
⇐	MOVE CURSOR TO LEFT	⇒	MOVE CURSOR RIGHT
# 's	DATA ENTRY	HLP	HELP (HL - C2)

SELECT ENTER TO ACCEPT ADVANCES ADDRESS COUNTER AND RETURNS TO C1 MENU.
A5-7 = ZONE NUMBER (EDIT BY NUMERIC KEYPAD) ZONES 1 - 240 EDITABLE
A9-11 = ZONE TYPE {=SUP}
A13-16 = ZONE DETECTION FUNCTION (CROSSZ, COUNTZ, SINREL)
B1-20 = ZONE CUSTOM MESSAGE
C11-12 = MANUAL PREDISCHARGE DELAY (00-30) (RELEASE CAUSED BY REL-WCT INPUT)
C19-20 = AUTOMATIC PREDISCHARGE DELAY (00-60)(RELEASE CAUSED BY DETECTION)
D7 = ABORT TYPE (1-6)
D12 = MANUAL RELEASE REQUIRED FOR ZONE (Y=YES, N= NO)
D20 = ZONE ENABLED/DISABLED (D, E)

Zone functions are defined as:
CrossZ - Cross Zone detection- An even and odd address must activate to enter predischarge.
CountZ - Counting Zone Detection- Two addresses on same zone must activate to enter predischarge.
SinRel - Single Sensor Release- Only one address must activate to enter predischarge.

Note : "Predischarge delay" is the predischarge duration which is time between:
a.) the start of 2nd detector alarm (or SDR) <and>
b.) the start of release (unless system is paused via an abort)

11.4.2.2 Zone Copy Configuration

This display can be used to copy zone set-up information from one zone to another. It is accessible for both suppression and alarm zones.

ZONE COPY (C2A3)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	Z	O	N	E	:	X	X	X		T	T	T	-	F	F	F	F	F	F	
B	C	O	P	Y		A	L	L		C	O	N	F	I	G		T	O	:	
C	Z	O	N	E	:	X	X	X												
D	P	R	E	S	S		E	N	T	E	R		T	O		C	O	P	Y	

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC		ENT	PERFORM ZONE COPY
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's	ADDR DATA ENTRY	HLP	HELP (HL - C2A3)

A1-5 = ZONE NUMBER WITH PERTINENT DATA
A10-19 = ZONE TYPE / FUNCTION
C1-5 = ZONE NUMBER TO COPY CONFIG DATA TO.

11.4.2.3 Watermist Zone Configuration

Watermist Releasing requires discharge operating cycles.

WATERMIST ZONE CONFIG (C22)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	C	Y	C	L	E		O	N			T	I	M	E	:			X	X	S
B	C	Y	C	L	E		O	F	F		T	I	M	E	:			-	-	S
C	C	Y	C	L	E		R	E	P	E	A	T	S	:					-	H
D	P	O	S	T		D	I	S		D	E	L	A	Y	:		-	-	-	S

F1	DECR. FIELD @ CURSOR	F4	INCR FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	CONFIG (C2)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
#'s	DATA ENTRY	HLP	HELP (HL - C22)

A18-19 = CYCLE ON TIME (00 = NO CYCLE, 5-60 SEC IN 1 SEC INCREMENTS
B18-19 = CYCLE OFF TIME (5-60 SEC IN 1 SEC INCREMENTS
C19 = NUMBER OF CYCLE REPEATS (1-4)
D17-19 = POST DISCHARGE DELAY, PRIOR TO CHECKING IF STILL IN ALARM (15-600 SEC IN 1 SEC INCREMENTS)

11.4.3 Alarm-Only Zone Configuration

IF ALARM ZONE TYPE (C2B)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	Z	N	E	:	X	X	X		T	T	T	-	F	F	F	F	F	F		
B	C	U	S	T	O	M		M	E	S	S	A	G	E	-	-	-	-	-	-
C																				
D															E	N	A	B	:	X

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	WMST CYCLE (C22)	F5	
F3	COPY ZONE DATA (C2A3)	F6	DEFAULT MESSAGE
ESC	RETURN (C)	ENT	ACCEPT CHANGE
⇐	MOVE CURSOR TO LEFT	⇒	MOVE CURSOR RIGHT
# 's	DATA ENTRY	HLP	

A5-7 = ZONE NUMBER (EDIT BY NUMERIC KEYPAD)
A9-11 = ZONE TYPE {=ALM}
A13-16 = ZONE DETECTION FUNCTION {ALARM)
B1-20 = ZONE CUSTOM MESSAGE
D20: = ZONE ENABLED/DISABLED (D, E)

11.5 CONFIGURE SYSTEM VARIABLES

11.5.1 General System Variables Information

Pressing F3 from the Configuration display allows access to the "System Variables" video. It supports entry and storage of system, circuit, and loop configurations. Pressing function keys accesses these configuration capabilities:

F1- I/O Circuits:	ASC Controller circuits	Section 11.5.2
F2- Message:	System Message (displayed on system normal)	Section 11.5.3
F3- Pattern-	Audible patterns used on SOM devices	Section 11.5.4
F4- Time Group	Time Pattern Group for alarm sensitivity setup	Section 11.5.5

SYSTEM VARIABLES (C3)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	1	-	I	/	O		C	K	T		4	-	T	I	M	E		G	R	P
B	2	-	M	E	S	S	A	G	E		5	-								
C	3	-	P	A	T	T	E	R	N		6	-								
D	S	E	L	E	C	T		F	U	N	C	T	I	O	N		K	E	Y	

F1	IN & OUT CIRCUITS (C31)	F4	TIME CONTROL (C34)
F2	PANEL MESSAGE (C32)	F5	
F3	AUDIBLE PATTERN (C33)	F6	
ESC	RETURN (C)	ENT	
⇐		⇒	
# 's		HLP	HELP (HL - C3)

11.5.2 System Circuits:

11.5.2.1 System Circuit Options

Pressing F1 from the System Variables display allows access to the "I/O Circuits" video. Pressing Function keys accesses these configuration capabilities:

F1- Outputs:	ASC two audible and 8 relay circuits	Section 11.5.3.2
F2- Loop Circuits:	Device Loop wiring options	Section 11.5.3.3
F3- Power Inputs:	Power Input configuration	Section 11.5.3.4

SYSTEM INPUT / OUTPUT CIRCUITS (C31)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	1	-	O	U	T	P	U	T	S		4	-								
B	2	-	L	O	O	P	C	K	T		5	-								
C	3	-	P	O	W	E	R	I	N		6	-								
D	S	E	L	E	C	T		F	U	N	C	T	I	O	N		K	E	Y	

F1	OUTPUTS (C311)	F4	
F2	LOOP WIRING (C312)	F5	
F3	POWER INPUTS (C313)	F6	
ESC	RETURN (C3)	ENT	
⇐		⇒	
# 's		HLP	HELP (HL - C31)

11.5.2.2 ASC Outputs:

This display allows configuration of the CSC Controller's two polarity reversal outputs, relay outputs, and the optional plug-in CRM4 relay modules. Configuration includes selection of a single state of operation, assigned zones, silencability, silenced upon abort activation, and enable /disable status.

Note: Circuits assigned to alarm, turn on (or remain on) upon entry into predischarge and release states.

Circuits assigned to predischarge, turn on (or remain on) upon entry into release states.

SYSTEM OUTPUT TYPE (C311)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	C	K	:	R	4	1	1		R	E	L	S		S		A				E
B	Z	O	N	E	:	0	1	1	-	X	X	0		Y		Y				E
C	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
D	-	-	-	-	-	Y	Y	Y	Y	-	-	-	-	Y	-	-	-	-	-	-

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	CYCLE THRU ZONES	F5	
F3		F6	
ESC	RETURN (C31)	ENT	ACCEPT CHANGE
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's		HLP	HELP (HL - C311)

A9-10 = SYSTEM OUTPUT CIRCUIT (AUD1, AUD2, P411-P414, P421-P424)
D2-5 = STATE (NONE, PROC, TRB, SUPR, DRLL, ABRT, PAL1, PAL2, ALRM, PRED, RELE, WMST)
B6-12 = ZONES DISPLAYED ON LINE D. USE F1 & F2 TO ENTER MULTIPLES OF 20 IN B6-B8.
B14 = SILENCEABLE (Y/N)
B16 = SILENCED UPON ZONE ABORT ACTIVATION (Y/N)
B20 = CIRCUIT ENABLED/ DISABLED (Y/N)
D1-20 = INDICATES IF CIRCUIT IS ACTIVE FOR GIVEN ZONES (- =NO, Y = YES)

11.5.2.3 Loop Circuit Wiring:

This display allows selection of wiring mode for device communication loops. Wiring methods are detailed in the "Definitions" and "Wiring Diagrams" sections of this manual.

LOOP CIRCUIT WIRING (C312)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	W	I	R	I	N	G					L	O	O	P	#	:	1	2	3	4
B										C	L	A	S	S	:		A	A	A	A
C									E	N	A	B	L	E	:		E	E	E	E
D																				

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	RETURN (C31)	ENT	ACCEPT CHANGE
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's		HLP	HELP (HL - C312)

A17-20 = LOOP # (1-2 ON CSC CONTROLLER; 3-4 ON OPTIONAL SLM)
B17-20 = WIRING MODE OF EACH LOOP (A= CLASS A, B= CLASS B)
C17-20 = LOOPS ENABLED / DISABLED (E, D)

11.5.2.4 Power Inputs:

This display allows selection of power inputs to the CSC Controller and the optional SPS power supply. For each of the two cards, selection shall be made:

1.) Whether AC power is to be applied to each card.
2.) Whether batteries or Aux24Vin is to be connected to battery terminals of each card.

POWER INPUTS (C313)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	P	O	W	E	R		I	N	:		A	C		2	4	V	D	C		
B	C	O	N	T	R	O	L	L	E	R		Y		B	A	T	T			
C	S	P	S	-	S	U	P	P	.			N		N	O	N	E			
D																				

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	RETURN (C31)	ENT	ACCEPT CHANGE
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's		HLP	HELP (HL - C313)

B12,C12= USE (AND SUPERVISION) OF AC POWER ON CSC AND OPTIONAL SPS CARD.
B14-18 = USE OF 24VDC INPUT TERMINALS ON CSC. (BATT, AUXIN, NONE)
C14-18 = USE OF 24VDC INPUT TERMINALS ON SPS. (BATT, AUXIN, NONE)

11.5.3 System Custom Message

Pressing F2 from the System Variables display allows access to the "System Custom Message" display.

SYSTEM MESSAGE (C32)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	S	Y	S		C	U	S	T	O	M		M	E	S	S	A	G	E	:	
B																				
C																				
D																				

F1		F4	
F2		F5	
F3		F6	DEFAULT MESSAGE
ESC	RETURN (C3)	ENT	ACCEPT CHANGE (C32)
⇐	MOVE CURSOR TO LEFT	⇒	MOVE CURSOR RIGHT
# 's	DATA ENTRY	HLP	HELP (HL - C32)

B1-20 = SYSTEM MESSAGE
C1-20 = SYSTEM MESSAGE

11.5.4 System Pattern Tables

Pressing F3 from the System Variables display allows access to the "System Pattern Tables". SOM's use these patterns to provide audible (or visible) pattern outputs per Chapter 5. Setup of these patterns is by sixteen unique pattern indexes.

Each index has a 16 bit pattern. Each bit represents a quarter second. The entire pattern represents 4 seconds. The 16 bit pattern is then repeated upon completion. The pattern leftmost bit occurs first. Patterns indexes 5 through 15 are programmable. Pattern index's 0 - 4 are hard-coded (not editable) as:

Index:	Pattern:	Use:
0	0000 0000 0000 0000	Steady Off
1	1111 1111 1111 1111	Steady On
2	1100 1100 1100 0000	Temporal Pattern
3	1100 1100 1100 1100	Chirp Pattern
4	1010 1010 1010 1010	March Time

SYSTEM PATTERN TABLE (C33)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	P	A	T	T	E	R	N		T	A	B	L	E							
B	X	X		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
C	X	X		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
D	X	X		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	RETURN (C3)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's	DATA ENTRY	HLP	HELP (HL - C33)

B1-2 = PATTERN INDEX (PATTERNS 05-15 ARE EDITABLE)
B4-19 = PATTERN FOR INDEX B1-2; B4 IS FIRST BIT OUT, 0.25 SEC EACH BIT.
C1-2 = PATTERN INDEX (B1+ 1)
C4-19 = PATTERN ASSOCIATED WITH INDEX C1-2
D1-2 = PATTERN INDEX (B1 + 2)
D4-19 = PATTERN ASSOCIATED WITH INDEX D1-2

Note: Patterns are only editable on line B

11.5.5.2 Time Based Group Display

TIME BASE CONTROL GROUPS (C34)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	T	I	M	E		C	O	N	T	R	O	L		G	R	P		X	X	
B	O	N	-	X	X	:	X	X	Y		O	F	F	-	X	X	:	X	X	Y
C		S	M	T	W	R	F	S		H	O	L								
D		X	X	X	X	X	X	X			X									

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	HOLIDAY SCHEDULE(C342)	F5	
F3		F6	
ESC	RETURN (C3)	ENT	
⇐	CURSOR LEFT	⇒	CURSOR RIGHT
# 's		HLP	HELP (HL - C34)

A18-19= TIME CONTROL GROUP INDEX (1-15; CYCLE WITH F1 & F4)
B4-9 = ALARM SENSITIVITY #2 TURN ON TIME (S2)
B15-20 = ALARM SENSITIVITY #2 TURN OFF TIME (S2)
D3-8 = DAILY SCHEDULE (1=ALARM1 SENS. ONLY (S1), 2= ALARM2 AT SELECTED TIME) (S2)
D10 = HOLIDAY SCHEDULE (Y= USED , N =NOT USED)

EXAMPLE: SYSTEM TIME BASE CONTROL GROUPS (C34)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	T	I	M	E		C	O	N	T	R	O	L		G	R	P		1	1	
B	O	N	-	0	8	:	0	0	A		O	F	F	-	0	5	:	3	0	P
C		S	M	T	W	R	F	S		H										
D		1	2	2	2	2	2	1		Y										

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	HOLIDAY SCHEDULE	F5	
F3		F6	
ESC	RETURN (C3)	ENT	
⇐		⇒	
# 's		HLP	

EXAMPLE SENSOR IS IN TIME GROUP 11 WITH SENSITIVITIES MAINTAINED IN SENSOR CONFIGURATION OF (ALARM1= 10) AND (ALARM2 =25). AT 8:00AM EVERY WEEKDAY, THE SENSITIVITY CHANGES TO (ALARM2= 25). AT 5:30PM EVERY WEEKDAY, THE SENSITIVITY CHANGES BACK TO (ALARM1=10). THE SENSITIVITY IS SET TO (ALARM1= 10) AT 5:30PM FRIDAY AND NOT CHANGED UNTIL MONDAY MORNING. SINCE THE HOLIDAY SCHEDULE IS ENABLED WITH 'Y', THE ALARM2 SENSITIVITY IS NOT USED ON THE HOLIDAYS LISTED IN THE C342 MENU.

11.5.5.3 Holiday Schedule Display

This display (as described above) is accessible by pressing F2 from the "Time Base Group" display.

HOLIDAY SCHEDULE (C342)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	H	O	L	I	D	A	Y		S	C	H	E	D	U	L	E	-	X		
B	M	M	-	D	D			M	M	-	D	D			M	M	-	D	D	
C	M	M	-	D	D			M	M	-	D	D			M	M	-	D	D	
D	M	M	-	D	D			M	M	-	D	D			M	M	-	D	D	

F1	DECR. FIELD @ CURSOR	F4	DECR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	RETURN (C34)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's		HLP	HELP (HL-C342)

A18 = CYCLE THRU HOLIDAYS 1-9 (0) AND 10-18 (1) WITH F1 & F2 @ A18
FIELDS ARE MONTHS AND DAYS THAT ALARM 2 SENSITIVITY IS NOT USED.
SYSTEM ALLOWS UP TO 18 HOLIDAYS. THEY ARE SHARED BY ALL TIME-BASE GROUPS.

11.6 LEARN MODE (Configure)

11.6.1 Learn Mode Display Information

Pressing F4 from the Configuration display accesses the "Learn Mode" display. There are multiple displays available in the learn mode depending if the mode desired is to either:

F2- Display current address being polled on loop

The learn mode allows system operators to minimize configuration time. Either entire system programming or additional device programming is easily facilitated. It uses a default configuration as shown below.

DEVICE LEARN (C4)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	L	E	A	R	N		A	D	D	R		R	A	N	G	E	S			
B	1	-	X	X	X	:	Y	Y	Y			2	-	X	X	X	:	Y	Y	Y
C	3	-	X	X	X	:	Y	Y	Y			4	-	X	X	X	:	Y	Y	Y
D	P	R	E	S	S		E	N	T	E	R		T	O		L	E	A	R	N

F1	DECR. FIELD @ CURSOR	F4	DECR. FIELD @ CURSOR
F2	CURRENT POLL (C42)	F5	
F3		F6	
ESC	RETURN (C)	ENT	PERFORM LEARN
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's	ADDR DATA ENTRY	HLP	HELP (HL - C4)

B3-5 LOOP 1 START ADDRESS LEARN
B6-8 LOOP 1 END ADDRESS LEARN
B14-16 LOOP 2 START ADDRESS LEARN
B17-19 LOOP 2 END ADDRESS LEARN
C3-5 LOOP 3 START ADDRESS LEARN
C6-8 LOOP 3 END ADDRESS LEARN
C14-16 LOOP 4 START ADDRESS LEARN
C18-20 LOOP 4 END ADDRESS LEARN

CURRENT POLL (C42)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	L	E	A	R	N		A	D	D	R		R	A	N	G	E	S			
B	1	-	X	X	X							2	-	X	X	X				
C	3	-	X	X	X							4	-	X	X	X				
D	P	R	E	S	S		E	N	T	E	R		T	O		L	E	A	R	N

F1		F4	
F2	RETURN (C4)	F5	
F3		F6	
ESC	RETURN (C)	ENT	
⇐		⇒	
# 's		HLP	

B3-5 LOOP 1 CURRENT ADDRESS BEING POLLED
B14-16 LOOP 2 CURRENT ADDRESS BEING POLLED
C3-5 LOOP 3 CURRENT ADDRESS BEING POLLED
C14-16 LOOP 4 CURRENT ADDRESS BEING POLLED

Note: When ENTER is pressed, "TO LEARN" on line D is replaced with *XXXL*, where XXX is the total number of devices to learn. It will count-down to 001 until all devices are learned. If there are any outputs to learn it will slow at the total number of outputs with *XXXC*. The learn is complete when line D returns to "TO LEARN".

FACTORY DEFAULTS - LEARN MODE

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	X	-	Y	Y	Y		I	O	N					D	E	T	E	C	T	
B																				
C	S	1	<	S	2	<	P	1	<	P	2	<	A	V		T	B		D	E
D	8	0		8	0		8	0		8	0		N	O		0	0		Y	E

F 2 (ZONE 1)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	X	-	X	Y	Y		P	H	O	T	O	L		D	E	T	E	C	T	
B																				
C	S	1	<	S	2	<	P	1	<	P	2	<	A	V		T	B		D	E
D	2	5		2	5		2	5		2	5		N	O		0	0		Y	E

F 2 (ZONE 1)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	X	-	Y	Y	Y		H	E	A	T				D	E	T	E	C	T	
B																				
C	S	1	<	S	2	<	P	1	<	P	2	<	A	V		T	B		D	E
D	4	0		4	0		4	0		4	0		N	O		0	0		Y	E

F 2 (ZONE 1)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	X	-	Y	Y	Y		F	R	C	M				M	A	N	A	L	R	M
B																				
C	F	2		T	O		S	E	L	E	C	T		Z	O	N	E	S		
D	C	O	N	T	A	C	T	:	N	O					E	N	A	B	:	E

F 2 (ZONE 1)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	X	-	Y	Y	Y		S	R	M					S	T	:				
B																				
C	F	2	-	Z	O	N	E	S			D	E	V	:	2	4	V	S	O	L
D	T	I	M	E	:	C	O	N	T	I	N				E	N	A	B	:	D

F 2 (ZONE 1)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	X	-	Y	Y	Y		S	O	M		M	Z	0	0	1					E
B																				
C	I	#		S	T	A	T		Z	N	E		P	T		O		S		R
D	0	0		A	L	R	M		0	0	1		0	1		0		Y		Y

F 2 (ZONE 1)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	X	-	Y	Y	Y		R	2	M		M	Z	0	0	1		W	E		E
B																				
C	I	#		S	T	A	T		Z	N	E		R	1		R	2			R
D	0	0		A	L	R	M		0	0	1			Y			Y			0

F 2 (ZONE 1)

11.7 DOWNLOAD TO DEVICES (Configure)

11.7.1 Download to Device Information

Pressing F5 from the Configuration display accesses the "Download to Devices" display. After configuring of devices per earlier sections of this chapter, this "Download" operation can be used to copy the information from the CSC memory to the individual devices. This operation can take several minutes due to the timing delays to write to device EE memory. Missing devices, incorrect addresses in devices, missing device power, and other errors can cause system error messages to be displayed on the LCD and recorded in "EVENT" history. Consult the Troubleshooting Section for more thorough error descriptions. Downloading to devices is performed when configuring individual devices (when enter is pressed). If the device reports a "CONFIG FAULT", performing a "TO DEV" function is recommended.

To run device download operations, selecting one of these function keys selects whether to download all or some of the configuration data:

F1 - To download all device configuration data
F2- To download devices changed since last System OK
F3- To download a selectable range of addresses.
F4- To display a list of modified addresses.

DOWNLOAD TO DEVICES (C51)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	1	-	A	L	L		D	E	V		4	-	S	H	O	W		M	O	D
B	2	-	M	O	D		D	E	V		5	-	X	X	X					
C	3	-	R	A	N	G	E				6	-								
D	S	E	L	E	C	T		F	U	N	C	T	I	O	N		K	E	Y	

F1	SEND ALL DEVICES(C51)	F4	SHOW MODIFIED DEV-C54
F2	SEND MODIFIED DEV (C52)	F5	
F3	SEND DEV. RANGE (C53)	F6	
ESC	RETURN (C)	ENT	
⇐		⇒	
# 's		HLP	HELP (HL - C51)

ALL DEVICES
B13-17 = DISPLAYS TOTAL NUMBER OF OUTPUT MODULES TO CONFIGURE, THEN COUNTS DOWN AS THEY ARE COMPLETED.

Note: This will create a "RECONFIG ADDR" event for each address configured.

MODIFIED DEVICES (C52)

Same as above (C51) with the exception that it only performs on devices changed since last System OK.

11.7.2

DOWNLOAD TO RANGE OF ADDRESSES (C53)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	S	E	L	E	C	T		C	O	N	F	G		R	A	N	G	E	S	
B	1	-	X	X	X	:	Y	Y	Y			2	-	X	X	X	-	Y	Y	Y
C	3	-	X	X	X	:	Y	Y	Y			4	-	X	X	X	-	Y	Y	Y
D	P	R	E	S	S		E	N	T	E	R		T	O		C	O	N	F	G

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	CURRENT ADR POLLING	F5	
F3		F6	
ESC	RETURN (C5)	ENT	CONFIGURE RANGE SELECTED
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's	ADDR. DATA ENTRY	HLP	HELP (HL - C53)

B3-5/7-9	LOOP 1	START ADDRESS/END ADDRESS TO CONFIGURE
B14-16/18-20	LOOP 2	START ADDRESS/END ADDRESS TO CONFIGURE
C3-5/7-9	LOOP 3	START ADDRESS/END ADDRESS TO CONFIGURE
C14-16/18-20	LOOP 4	START ADDRESS/END ADDRESS TO CONFIGURE

Note: Pressing F2 will display current device being polled per loop.

11.7.3

SHOW MODIFIED DEVICE (C54)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	M	O	D	S					D	E	V	X	-	X	X	X	-	Y	Y	Y
B	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
C																				
D																				

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	RETURN (C5)	ENT	
⇐	LEFT	⇒	RIGHT
# 's		HLP	HELP (HL - C54)

A12 LOOP NUMBER OF DEVICES DISPLAYED IN ROW C
A14-16/18-20 START ADDRESS-END ADDRESS OF DEVICES DISPL. IN ROW C
C DEVICE TYPE AT ADDRESS LOCATION:
P = PHOTO, I = ION, H = HEAT, F = FRCM, O = SOM, S = SRM, R = R2M
lower case = disabled
D U = UNMODIFIED, M = MODIFIED

11.8 Special Configuration Functions

11.8.1 Special Features

Pressing F6 from the configuration screen allows access to this "Specials" display.

SPECIAL (C6)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	1	-	C	A	L		S	E	N		4	-	D	E	V		A	D	D	R
B	2	-	T	I	M	E	O	U	T		5	-	C	A	L		T	I	M	E
C	3	-	E	R	R		C	H	K		6	-	P	C		T	R		C	L
D	S	E	L	E	C	T		F	U	N	C	T	I	O	N		K	E	Y	

F1	CAL SENSE (C61)	F4	DEV ADDR CHANGE (C64)
F2	TIMEOUT (C62)	F5	SET CALIBRATE TIME (C65)
F3	CLEAN LEVEL RESET(C63)	F6	PC TRBL CLR
ESC	RETURN (C)	ENT	
⇐		⇒	
# 's		HLP	HELP (HL - C6)

SENSOR CALIBRATION (C61)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	S	E	N	S	O	R		C	A	L	I	B	R	A	T	I	O	N	?	?
B	F	2		T	O		R	E	S	E	T		C	L	E	A	N	S		
C	F	3		T	O		C	A	L		F	I	R	E	-	L	E	V	E	L
D	O	T	H	E	R		K	E	Y	S	-		C	A	N	C	E	L		

F1	RETURN TO SPECIAL (C6)	F4	RETURN TO SPECIAL C6)
F2	RESET CLEAN LEVEL(C612)	F5	RETURN TO SPECIAL (C6)
F3	CAL LED FIRELEVEL (C613)	F6	RETURN TO SPECIAL (C6)
ESC	RETURN TO SPECIAL (C6)	ENT	
⇐		⇒	
# 's		HLP	HELP (HL - C61)

RESET CLEANS RANGE (C612)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	R	E	S	E	T		C	L	E	A	N		R	A	N	G	E	S		
B	1	-	X	X	X	:	Y	Y	Y			2	-	X	X	X	:	Y	Y	Y
C	3	-	X	X	X	:	Y	Y	Y			4	-	X	X	X	:	Y	Y	Y
D	P	R	E	S	S		E	N	T	E	R		T	O		R	E	S	E	T

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	CURRENT ADR POLL	F5	
F3		F6	
ESC	RETURN (C61)	ENT	RESET CLEANS
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's	ADDR DATA ENTRY	HLP	HELP (HL - C612)

B3-5:7-9 LOOP 1 START: END ADDRESS TO RESET CLEAN LEVELS
B14-16:18-20 LOOP 2 START: END ADDRESS TO RESET CLEAN LEVELS
C3-5:7-9 LOOP 3 START: END ADDRESS TO RESET CLEAN LEVELS
C14-16:18-20 LOOP 4 START: END ADDRESS TO RESET CLEAN LEVELS

Note: When enter is pressed, "RESET" in row D is replaced by *****. Where *** is the number of PHOTO's, IONS or HEATS to reset clean levels. This value counts down as the clean level is reset. The number is removed as the process is complete.

CALIBRATION RANGES (C613)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	C	A	L	I	B	R	A	T	I	O	N		R	A	N	G	E	S		
B	1	-	X	X	X	:	Y	Y	Y			2	-	X	X	X	:	Y	Y	Y
C	3	-	X	X	X	:	Y	Y	Y			4	-	X	X	X	:	Y	Y	Y
D	P	R	E	S	S		E	N	T	E	R		T	O		C	A	L	I	B

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	CURRENT POLL (C42)	F5	
F3		F6	
ESC	RETURN (C61	ENT	CAL. FIRE LEVEL
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's	ADDR DATA ENTRY	HLP	

B3-5:7-9 LOOP 1 START: END ADDRESS TO CALIBRATE (LED FIRE TEST)
B14-16:18-20 LOOP 2 START: END ADDRESS TO CALIBRATE (LED FIRE TEST)
C3-5:7-9 LOOP 3 START: END ADDRESS TO CALIBRATE (LED FIRE TEST)
C14-16:18-20 LOOP 4 START: END ADDRESS TO CALIBRATE (LED FIRE TEST)

Note: Pressing F2 will display current device being polled per loop, similar to C42. When enter is pressed, "CALIB" in row D is replaced by *****. Where *** is the number of PHOTO's, IONs or HEATS to calibrate FIRE TEST LED. This value counts down as the calibrate FIRE TEST LED is reset. The number is removed as the process is complete.

PASSWORD TIMEOUT (C62)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A		P	A	S	S	W	O	R	D		T	I	M	E	O	U	T			
B																				
C					X	X	X		M	I	N	U	T	E	S					
D																				

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	RETURN (C6)	ENT	PERFORM CHANGE
⇐	LEFT	⇒	RIGHT
# 's	DATA ENTRY	HLP	HELP (HL - C62)

C5-7 = PASSWORD TIMEOUT (5-250 MINUTES IN 1 MINUTE INCREMENTS)

ERR CHK (C63)

There are two places where the system performs an error check:

1. When the panel return to the SYSTEM MESSAGE SCREEN.
2. When F3 is pressed from the SPECIAL MENU (C6)

SET DEVICE ADDRESS (C64)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	L	O	O	P	:	X		C	H	A	N	G	E		A	D	D	R		
B	C	H	A	N	G	E		A	D	R		F	R	O	M	:	X	X	X	Y
C														T	O	:	X	X	X	Y
D	P	R	E	S	S		E	N	T	E	R		T	O		C	O	P	Y	

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	FIND DEVICE	F5	GLOBAL SEARCH
F3	VIEW F2 RESULTS	F6	
ESC		ENT	PERFORM CHANGE
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's	ADDR DATA ENTRY	HLP	HELP (HL - C64)

A6 = LOOP WITH DEVICE TO CHANGE ADDRESS(1-4).
B17-19 = ADDRESS OF DEVICE TO BE CHANGED.
B20 = TYPE OF DEVICE @ ADDRESS FROM SHOWN (" " = NOTHING, F = FRCM, S = SRM, 0 = SOM, R = R2M, P = PHOTO, I = ION, H = HEAT)
C17-19 = NEW ADDRESS OF DEVICE.
C20 = TYPE OF DEVICE @ TO ADDRESS SHOWN (DEVICES SAME AS B20)

Note: This changes the device address. It does not copy device configuration information, it uses default configuration information. To find a device address, install a single device on an empty loop and press F2 while in this screen. Pressing F3 will allow viewing of the Find device results, displaying Address/Data/Checksum on line C.

CALIBRATION TIME & DATE (C65)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	C	A	L	I	B	R	A	T	E		T	I	M	E		&		D	A	Y
B	T	I	M	E		0	8	:	0	0	:	0	0		A	M				
C	D	A	Y	:		W	E	D												
D																				

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	RETURN (C6)	ENT	
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
# 's		HLP	HELP (HL - C65)

B6-7 = HOURS (1-12)
B9-10 = MINUTES (00-59)
B12-13 = SECONDS (00-59)
B12 = CLOCK SETTING (A, P)
C6-7 = DAY (SUN, MON, TUE, WED, THU, FRI, SAT)
THIS SELECTS TIME OF THE WEEKLY SENSOR CALIBRATE TEST (LED-FIRE TEST)

PC TR CL (PC TROUBLE CLEAR)

Pressing F6 from CONFIG SPECIALS menu will clear an error that is reported when the PC has trouble configuring panel.

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CHAPTER 12 Operation (Level 4 password - System Administrator)

Upon entry of a valid Level 4 password in the password screen, pressing F2 will allow access to edit password.

EDIT PASSWORD (A2)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	E	D	I	T		P	A	S	S	W	O	R	D	S						
B	L	:	X		#	X	X		Y	Y	Y	Y	Y		Z	Z	Z	Z	Z	Z
C	S	Y	S	A	D	M		X	X	X	X	X								
D																				

F1	DECR. FIELD @ CUSOR	F4	INCR. FIELD @ CURSOR
F2		F5	
F3		F6	
ESC	RETURN TO PASSWORD (A)	ENT	ACCEPT PASSWORD
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
#'s	PASSWORD ENTRY	HLP	

The controller is shipped with a factory default Level 4 password of 10000. It is recommended to change this password to prevent others from these higher level accesses.

B3 = PASSWORD LEVEL (2 OR 3)
B9-13 = A FIVE DIGIT PASSWORD
B16-17 = PASSWORD NUMBER (01-16), 16 DIFFERENT PASSSWORDS AVAILABLE FOR LEVEL 2 AND 3
B15-20 = A SIX POSITION ALPHANUMERIC DESCRIBING PASSWORD
C8-12 = A FIVE DIGIT NUMBER FOR PASSWORD LEVEL 4 SYSTEM ADMINISTRATOR

ERASE HISTORY (H6)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	E	R	A	S	E		H	I	S	T	O	R	Y		?	?	?			
B	P	R	E	S	S		F	2		T	O		C	O	N	F	I	R	M	
C	P	R	E	S	S		F	3		T	O		U	N	E	R	A	S	E	
D	P	R	E	S	S		E	S	C		T	O		C	A	N	C	E	L	

F1	RETURN TO HISTORY (H)	F4	RETURN TO HISTORY (H)
F2	ERASE HISTORY	F5	RETURN TO HISTORY (H)
F3	RETURN TO HISTORY (H)	F6	RETURN TO HISTORY (H)
ESC	RETURN TO HISTORY (H)	ENT	RETURN TO HISTORY (H)
⇐	RETURN TO HISTORY (H)	⇒	RETURN TO HISTORY (H)
#'s	RETURN TO HISTORY (H)	HLP	HELP (HL - H6)

MESSAGE TEST (P55551)

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
A	Z	O	N	E	-	S	T	A	T	E	:		X	X	X	-	Z	Z	Z	Z
B	T	E	S	T		I	N	T	E	R	V	A	L	:		Y	Y	Y	S	
C	N	U	M	B	E	R		O	F		T	E	S	T	S	:		X	X	X
D	P	R	E	S	S		E	N	T	E	R		T	O		S	T	A	R	T

F1	DECR. FIELD @ CURSOR	F4	INCR. FIELD @ CURSOR
F2	PAUSE TEST	F5	PAUSE TEST
F3	PAUSE TEST	F6	PAUSE TEST
ESC	DIAG 4 (P5555)	ENT	START TEST
⇐	MOVE CURSOR LEFT	⇒	MOVE CURSOR RIGHT
#'s	DATA ENTRY	HLP	HELP (HL - P55551)

Tests zone message to R2M and SOM modules.

A13-15 = ZONE NUMBER OF BROADCAST MESSAGE
A17-20 = STATE TO BROADCAST
B16-18 = NUMBER OF SECONDS FOR BROADCAST

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CHAPTER 13 Specifications

CHEETAH MAIN BOARD (CSC)
MAIN POWER (P1)
120Vac (02-3936), 208/240Vac (02-3938), 2.0A, 50/60 Hz
Supervised, non-power-limited
Supports max. 1.0 A (external power) normal standby and 5.0 A (external power) alarm

SECONDARY POWER (P1)
24 Vdc, max 65 AH of batteries, max charge current 3A, max discharge current 15A
System may be powered completely by a Listed Uninterruptable Power Supply (UPS) rated 120Vac or 24Vdc

RELAY CONTACTS (P2)
Alarm, trouble, supervisory dry contracts rated 30Vdc, 2A or 110Vac, 0.5A
May connect to power-limited or non power-limited sources. One terminal must be left vacant to separate power-limited from non power-limited if both used.

RS-232/RS-485 (P3) (P4)
Used for Vesda, Graphic Annunciator and Cheetah Tracker. Refer to their manuals for specific parameters.

AUXILIARY POWER (P4)(P5)
Resettable auxiliary power (P4) rated 24Vdc, 2A (max) Power-limited
Non resettable auxiliary power (P5) rated 24Vdc, 2A (max) (each), Power-limited

COMMUNICATION LOOP (P6)(P7)
Max 127 devices per loop, style 4, 6 or 7, 50 ohms total line impedance (max)
40Vdc, 100 mA (max) current (each), Power-limited, Supervised

NOTIFICATION CIRCUITS (P8)(P9)
24Vdc, 2A (max) (each), style Y (requires 100k eol p/n 10-2238) or style Z

SUPPLEMENTAL POWER SUPPLY (SPS)
MAIN POWER (P21)
120Vac (02-3936), 208/240Vac (02-3938) @ 2.0A, 50/60 Hz
Supervised, non-power-limited
Increases max. external normal standby current to 2.0A and max. external alarm current to 10.0A

SECONDARY POWER (P21)
24 Vdc, max 65 AH of batteries, max charge current 3A, max discharge current 15A.

AUXILIARY POWER (P22)
Non resettable auxiliary power rated 24 Vdc, 2A max (each), power-limited

SUPPLEMENTAL LOOP MODULE (SLM)
COMMUNICATION LOOP
Max 127 devices per loop, style 4 or 6, 50 ohms total line impedance (max)
40Vdc, 100 mA (max) current (each), Power-limited, Supervised

CHEETAH RELAY MODULE (CRM4)
RELAY CONTACTS
Dry contacts, rated 30Vdc, 2A or 110Vac, 0.5 A
May connect to power-limited or non power limited sources, if both used on same terminal block, one terminal must be left vacant to provide required separation between sources.

FAST RESPONSE CONTACT MODULE (FRCM)
INPUT CIRCUIT
50 ohms max line impedance, monitors normally open or normally closed contacts.
requires 100k end of line resistor (p/n 0400-01044)
power-limited, supervised

SUPERVISED OUTPUT MODULE (SOM)
NOTIFICATION CIRCUIT
30Vdc, 2A (max), 50 ohms (max) line impedance
requires 10K EOL (p/n 0400-01046).
power-limited, supervised

SOLENOID RELEASING MODULE (SRM)
ARM/SOLENOID CIRCUIT
30Vdc, 2A(max), supervised, power-limited
can be configured either for ARM, solenoid or master box use

ARM (squib) CIRCUIT
connects to 6 (max) Auxiliary Releasing Modules (ARM)
requires 2.7K EOL (p/n 0400-01057)

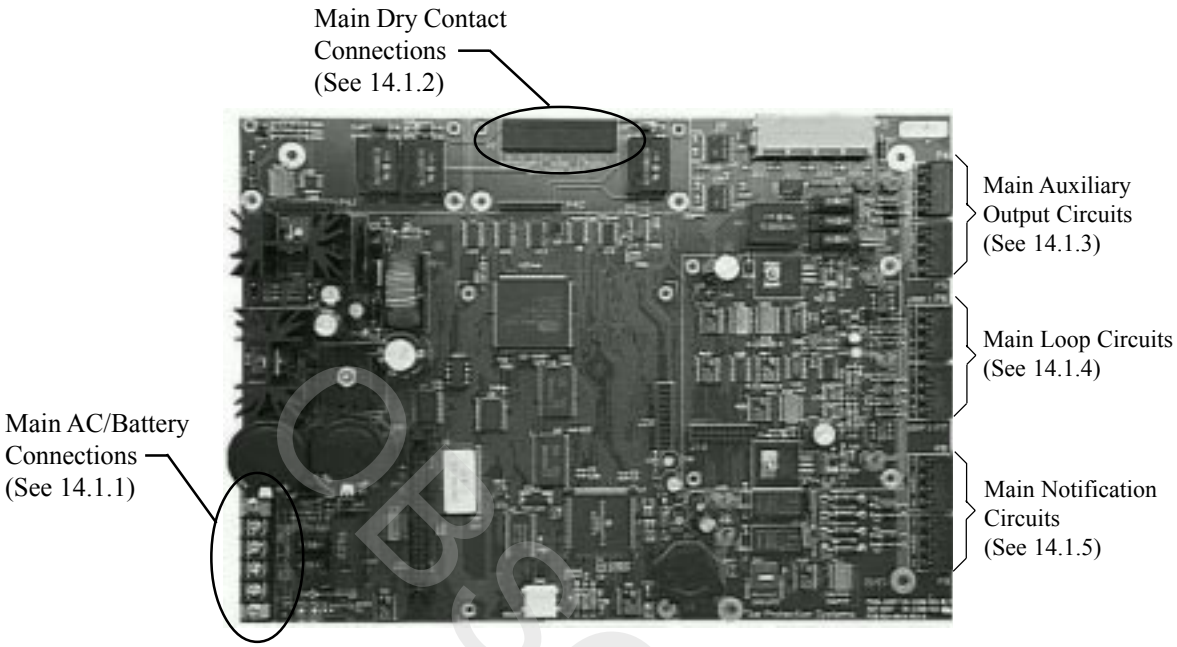
SOLENOID CIRCUIT
connects to compatible solenoids, refer to Section 1.7

CITY TIE CIRCUIT
rated for 1500' of 18 A.W.G.
Trip Coil rated 14.5 ohms

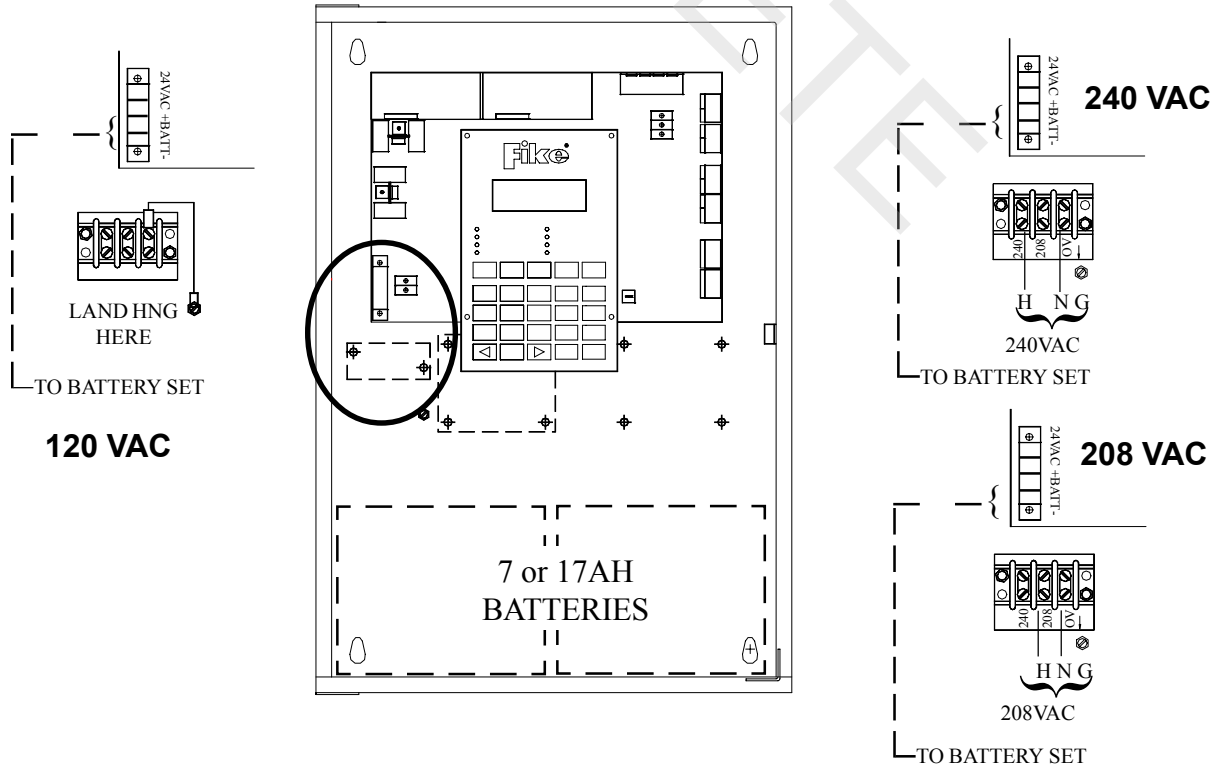
DUAL RELAY MODULE (R2M)
RELAY CONTACTS
Dry contacts, 30Vdc, 2A (max) or 110 Vac, 0.5a (max)
May connect to power-limited or non power limited sources, if both used on same terminal block, one terminal must be left vacant to provide required separation between sources.

CHAPTER 14 WIRING DIAGRAMS

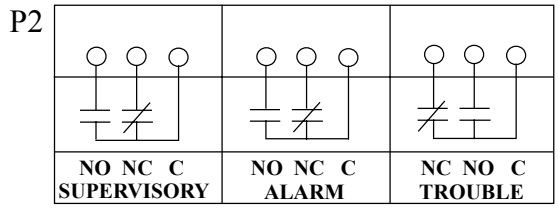
14.1 Cheetah Control Board



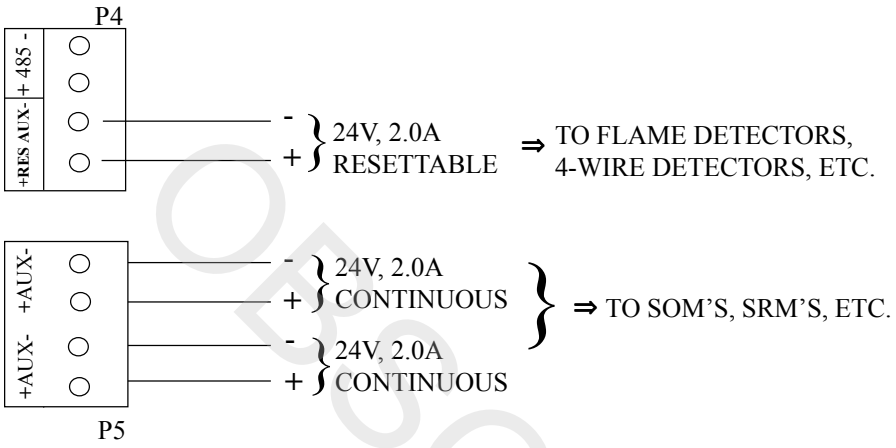
14.1.1 Main AC/Battery Connections



14.1.2 MAIN DRY CONTACT CONNECTIONS

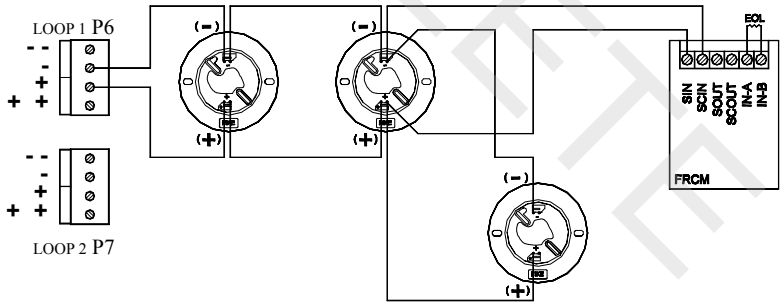


14.1.3 MAIN AUX OUTPUT CIRCUITS

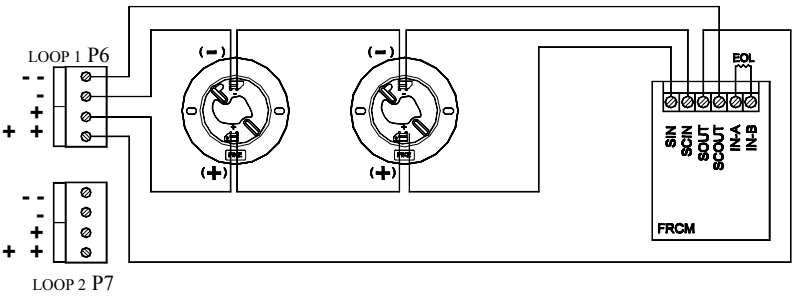


14.1.4 MAIN LOOP CIRCUITS

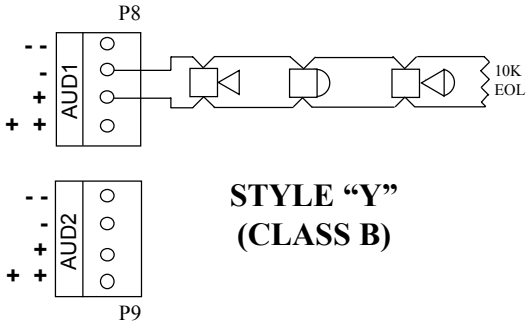
STYLE "4"



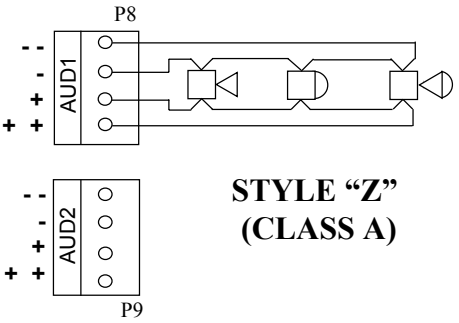
STYLE "6"



14.1.5 MAIN NOTIFICATION CIRCUITS

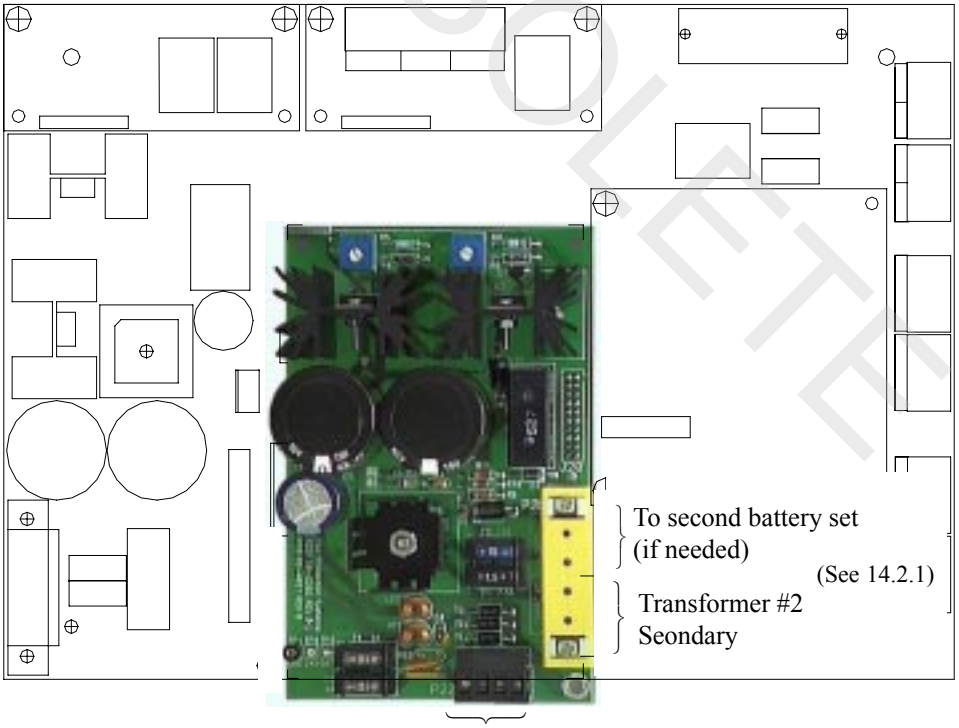


STYLE "Y"
(CLASS B)

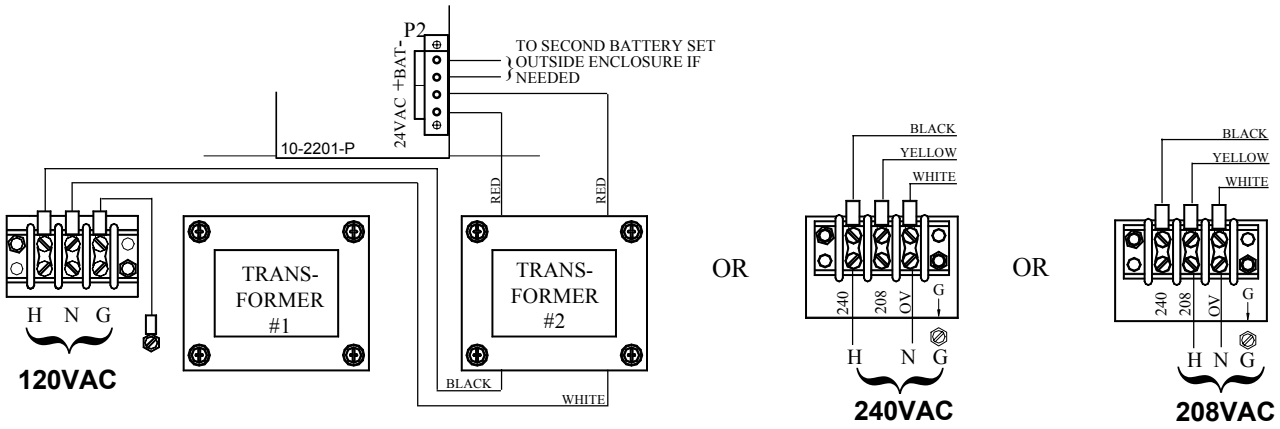


STYLE "Z"
(CLASS A)

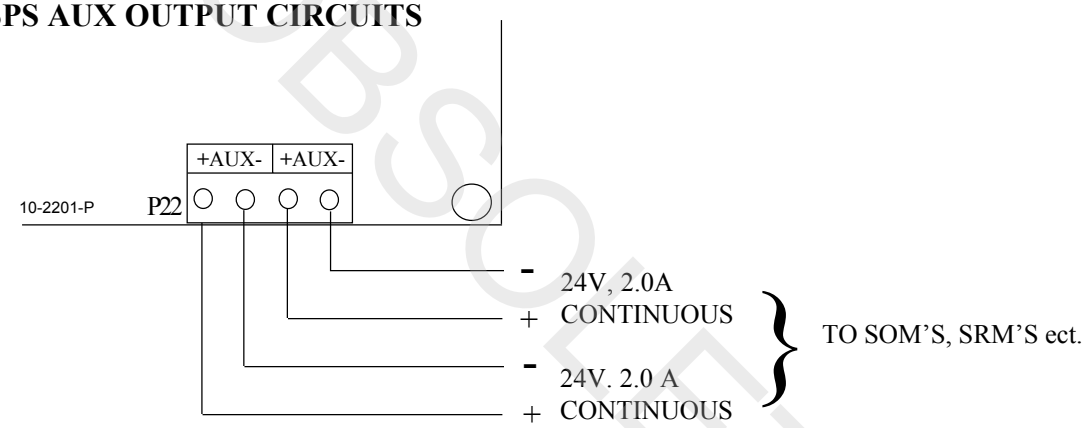
14.2 SUPPLEMENTAL POWER SUPPLY (SPS) 10-2201-p



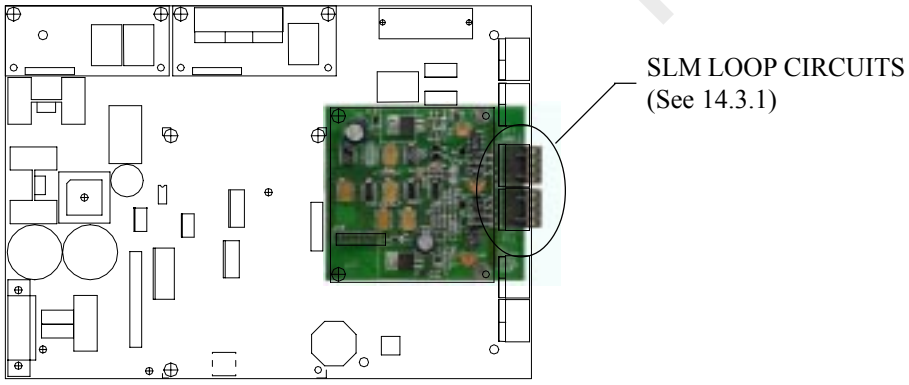
14.2.1 SPS AC/BATT CONNECTIONS



14.2.2 SPS AUX OUTPUT CIRCUITS

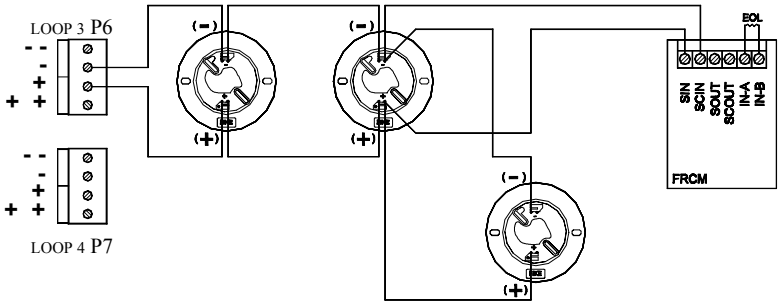


14.3 SUPPLEMENTAL LOOP MODULE, (SLM) P/N 10-2203

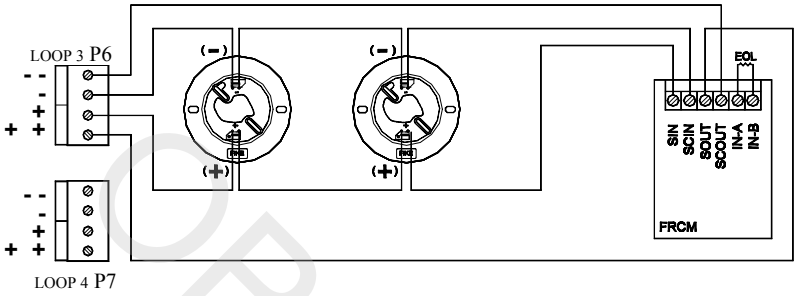


14.3.1 SUPPLEMENTAL MODULE LOOP CIRCUITS

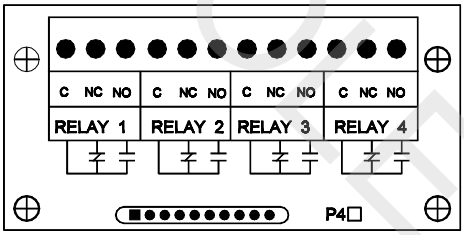
STYLE "4"



STYLE "6"

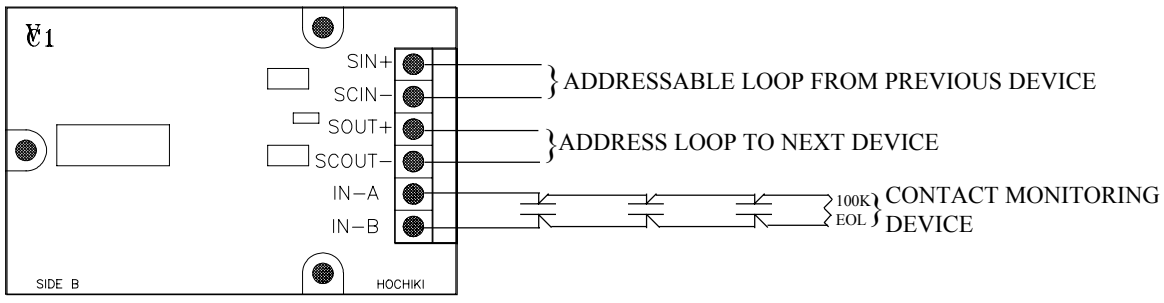


14.4 CHEETAH RELAY MODULE, (CRM4) P/N 10-2204



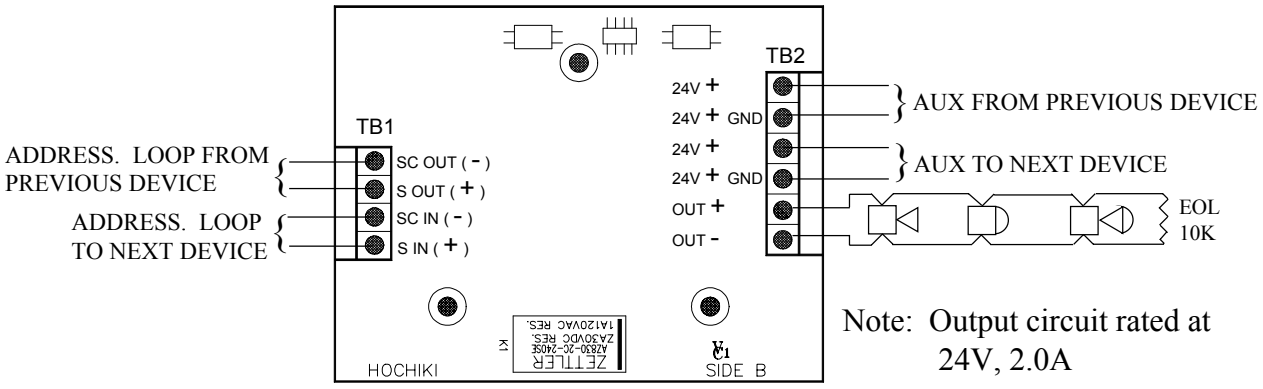
14.5 FAST RESPONSE CONTACT MONITOR

55-019 MOUNTED TO 4" BOX
55-020 SHRINK WRAPPED

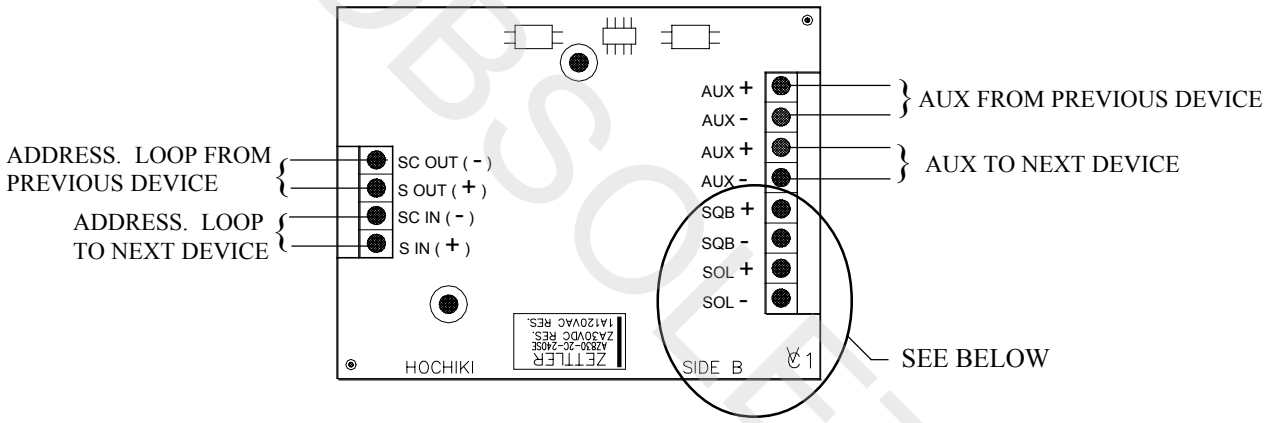


Note: Only use momentary switches if programmed for ABORT or RESET

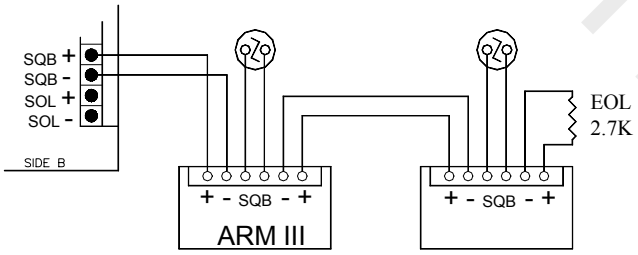
14.6 SUPERVISED OUTPUT MODULE, (SOM) P/N 55-021



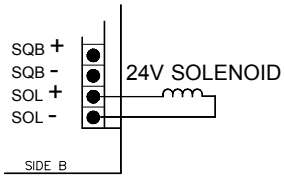
14.7 SOLENOID RELEASING MODULE, (SRM) P/N 55-022



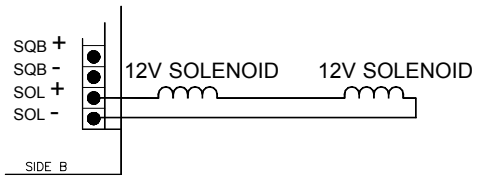
AGENT RELEASE MODE



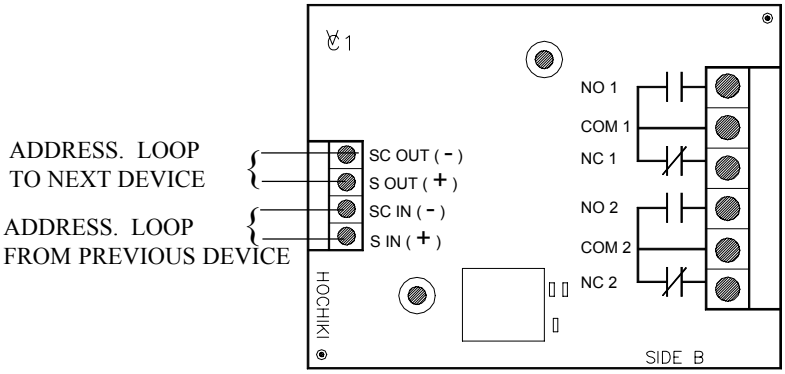
24V SOLENOID MODE



12V SOLENOID MODE



14.8 RELAY DUAL MODULE, (R2M) P/N 55-023

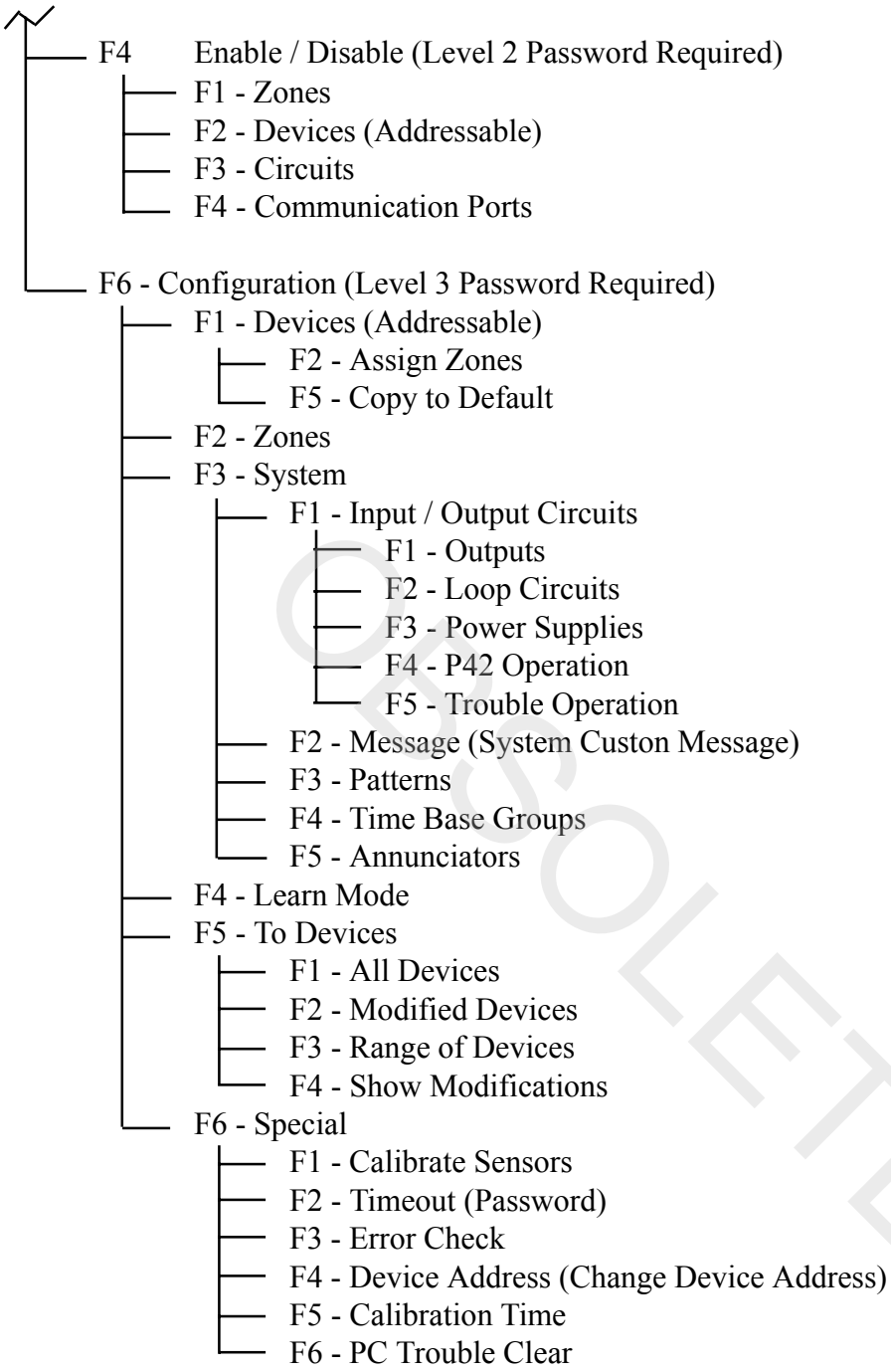


APPENDIX 1

Menu Structure

Main Menu (root menu) Hit any Function Key

- F1 - History (No Password Required)
  - F1 - Alarm History
  - F2 - Event History
  - F3 - Zone History
  - F4 - Current History (Event history since reset)
  - F6 - Erase History (Level 4 Password Required)
    - F2 - Confirm Erase History
    - F3 - Unerase History
- F2 - Passwords
  - F2 - Edit Passwords
- F3 - Specials (Level 2 Password Required)
  - F1 - Sensitivities
  - F2 - Alarm Levels
  - F3 - Set Time
  - F4 - Walktest Mode
  - F5 - Diagnostics
    - F1 - Address Location
    - F2 - Supplemental Outputs
    - F3 - Supplemental Relays
    - F4 - Ground Fault
    - F6 - Loop Classification
    - F5 - More
      - F1 - Buzzer
      - F2 - LEDs
      - F3 - Power A (Main Board Power Supply)
      - F4 - Power B (Supplemental Power Supply)
      - F6 - Zone Message Test
      - F5 - More
        - F1 - Address Data
        - F2 - Addressable Outputs
        - F3 - Output Check
        - F4 - Backlight
        - F6 - Keypad
        - F5 - More
          - F1 - Addressable Fire Test
          - F2 - System Power
          - F3 - Process Interrupts
          - F4 - Jack Test
          - F5 - More


F4 Enable / Disable (Level 2 Password Required)
F1 - Zones
F2 - Devices (Addressable)
F3 - Circuits
F4 - Communication Ports
F6 - Configuration (Level 3 Password Required)
F1 - Devices (Addressable)
F2 - Assign Zones
F5 - Copy to Default
F2 - Zones
F3 - System
F1 - Input / Output Circuits
F1 - Outputs
F2 - Loop Circuits
F3 - Power Supplies
F4 - P42 Operation
F5 - Trouble Operation
F2 - Message (System Custon Message)
F3 - Patterns
F4 - Time Base Groups
F5 - Annunciators
F4 - Learn Mode
F5 - To Devices
F1 - All Devices
F2 - Modified Devices
F3 - Range of Devices
F4 - Show Modifications
F6 - Special
F1 - Calibrate Sensors
F2 - Timeout (Password)
F3 - Error Check
F4 - Device Address (Change Device Address)
F5 - Calibration Time
F6 - PC Trouble Clear

APPENDIX - 2 - CHEETAH CONTROLLER MESSAGES

STATUS CHANGE MESSAGES - No local piezo with event. If this message appears, and no other events are present, the display will return to the SYSTEM MESSAGE screen.

"ACKNOWLEDGE SWITCH "	ACKnowledge switch pressed
"ALARM SILENCE "	All alarm states silenced for all zones.
"ALARM UNSILENCE"	All alarm states unsilenced for all zones.
"EXTERNAL RESET "	Reset record when external reset switch pressed or ESD hit
"LOOP 1 CALIBRATION "	All configured analog devices on loop 1 have been calibrated
"LOOP 2 CALIBRATION "	All configured analog devices on loop 2 have been calibrated
"LOOP 3 CALIBRATION "	All configured analog devices on loop 3 have been calibrated
"LOOP 4 CALIBRATION "	All configured analog devices on loop 4 have been calibrated
"NO RECORD "	No Event
"PASSWORD LEVEL 1"	Password level 1 entered
"PASSWORD LEVEL 2 "	Password level 2 entered
"PASSWORD LEVEL 3 "	Password level 3 entered
"PASSWORD LEVEL 4 "	Password level 4 entered
"PASSWORD LEVEL 5 "	Password level 5 entered
"PASSWORD EXPIRED"	Password has timed-out
"POWER-UP RESET "	Reset record when panel is powered up (Cold Start)
"RECONFIGURED DEVICE"	Addressable device has been configured
"REMOTE RESET RELEASE "	Remote reset function input released
"SUPERVISRY SILENCE "	All supervisory silenced for all zones
"SUPERVISRY UNSILENCE"	All supervisory unsilenced for all zones
"SYSTEM RESET "	Manual reset at the controller (red display button)
"TROUBLE SILENCE "	All troubles silenced for all zones
"TROUBLE UNSILENCE "	All troubles unsilenced for all zones

LATCHING EVENTS - Local piezo with event.
Event latches and requires operator intervention

"ALARM PRESENT "	Alarm state for this zone activated
"ALARM ACTIVE -----"	Device has reached the alarm threshold (analog data)
"AUX POWER UNCONFIG"	Auxilliary Power Module present but unconfigured
"CONFIG MENU ACCESSED"	Trouble stored when the configuration menu is entered
"CONTAMINATED DEVICE "	Analog device is contaminated
"DIAGNOSTICS ENTERED"	Diagnostics menu entered
"KEYWORD ERROR "	Erroneous program flow
"MANUAL ALARM "	Manual pull function input present
"MANUAL PRE-DISCHARGE "	Manual release with count-down function input present
"MANUAL RELEASE "	Manual release function input present
"PRE-DISCHARGE "	Pre-discharge state for this zone activated
"RELEASE "	Release state for this zone activated
"SOFTWARE ERROR "	Erroneous Interrupt source or illegal programming instruction fetched(board related trouble)
"TEST POINT BAD "	Addr. Analog device fire test point is out of acceptable range

NON-LATCHING EVENTS - Local piezo with event. If event clears and no other events are present, the panel logs the event restore and returns to the SYSTEM MESSAGE screen.

"ABORT PRESENT"	Abort state for this zone activated
"ABORT RESTORED"	Abort state for this zone de-activated
"ABORT PRESSED "	Abort function input present, panel is in alarm state or higher
"ABORT RELEASED "	Abort function input restored
"AC1 POWER TROUBLE"	AC for main board input mising/brownout
"AC1 POWER RESTORED"	AC for main board input restored
"AC2 POWER TROUBLE"	AC for power module (SPS) input mising/brownout
"AC2 POWER RESTORED"	AC for power module (SPS) input restored
"AUD1 OPEN TROUBLE"	Audible #1 open circuit
"AUD1 SHORT TROUBLE"	Audible #1 short circuit
"AUD1 TRB RESTORED"	Audible #1 restored
"AUD2 OPEN TROUBLE"	Audible #2 open circuit
"AUD2 SHORT TROUBLE"	Audible #2 short circuit
"AUD2 TRB RESTORED"	Audible #2 restored
"AUD SWITCH DISABLED"	Enable/disable switch for audibles is in the disable position
"AUD SWITCH RESTORED"	Audible enable/disable switch returned to the enable position
"AUX POWER MISSING"	Auxilliary Power Module(SPS) not present but configured
"AUX POWER CORRECTED"	Auxilliary Power Module(SPS) replaced after being missing
"CONFIGURE FAULT "	Fault detected when configuring SOM/R2M/SRM
"CONFIGURE RESTORED"	Fault restored from SOM/R2M/SRM configuration
"AUX1 POWER TROUBLE"	Auxiliary input power (connected to BAT) trouble
"AUX1 POWER RESTORED"	Auxiliary input power restore
"AUX2 POWER TROUBLE"	Auxiliary SPS input power (connected to BAT on SPS) trouble
"AUX2 POWER RESTORED"	Auxiliary SPS input power restore
"BAT1 CHARGE VOLT LOW"	Battery charger for main board has low voltage output
"BAT1 CHARGE RESTORED"	Battery charger for main board has returned to normal
"BAT2 CHARGE VOLT LOW"	Battery charger for SPS board has low voltage output
"BAT2 CHARGE RESTORED"	Battery charger for SPS board has returned to normal
"BATTERY1 TROUBLE "	Battery for main board input missing
"BATTERY1 RESTORED "	Battery for main board input restored
"BATTERY2 TROUBLE "	Battery for power module(SPS) input missing
"BATTERY2 RESTORED "	Battery for power module (SPS) input restored
"BAD COMMUNICATION"	Communication to device has errors (parity, checksum, etc.)
"COMMUN RESTORED"	Communication to device has returned to normal
"CALIBRATION FAULT"	Fault detected during calibration of this address
"CALIBRATION RESTORED"	Calibration fault has been restored. Device now has valid data.
"CFG ERROR 1: MR-----"	Configuration error #1 - suppression zone requires manual release (zone number appended to this message)
"CFG RESTO 1: MR-----"	Configuration error #1 restored
"CONFIG ERROR 2: IN/O"	Configuration error #2 - every input needs an associated output
"CONFIG RESTO 2: IN/O"	Configuration error #2 restored
"CONFIG ERROR 3: AL V"	Configuration error #3 - no analog device with alarm verification delay can be assigned to a suppression zone
"CONFIG RESTO 3: AL V"	Configuration error #3 restored

"CONFIG ERROR 4:SENS"	Configuration error #4 - Photo sensor has too high alarm sensitivity
"CONFIG RESTO 4:SENS"	Configuration error #4 restored
"CFG ERROR 5: W------"	Configuration error #5 - Watermist zone needs an SRM (zone#)
"CFG RESTO 5: W ------"	Confiugration error #5 restored
"CFG ERROR 6: W ------"	Configuration error #6 - Watermist zone has an abort (zone#)
"CFG RESTO 6: W ------"	Configuration error #6 restored
"CFG ERROR 7: ON TIME"	Configuration error #7 - SRM assigned to Watermist and zone has no “on-time”
"CFG RESTO 7: ON TIME"	Configuration error #7 restored
"CFG ERROR 8: ZN-TYPE"	Configuration error #8 - SRM assigned to Watermist and alarm type of zone
"CFG RESTO 8: ZN-TYPE"	Configuration error #8 restored
"CHECKSUM ERROR -----"	Configuration checksum error, board level (circuit number)
"CHECKSUM OK -----"	Checksum error restored (circuit number)
"CHECKSUM ERROR -----"	Zone configuration checksum error (zone number)
"CHECKSUM OK -----"	Zone checksum error restored (zone number)
"CIRCUIT SHORT "	Supervised output circuit shorted
"CIRCUIT OPEN "	Supervised output circuit open
"RESTORE CIRCUIT"	Supervised output circuit restored from fault
"DRILL INPUT ACTIVE"	Drill function input activated
"DRILL INPUT RESTORED"	Drill function input restored
"DRILL PRESENT"	Drill state for this zone activated
"DRILL RESTORED"	Drill state for this zone restored
"DEVICE MISSING "	Device was polled but not found
"DEVICE PRESENT "	Device returns, cancelling MISSING trouble
"DISABLED ZONE -----"	Zone disabled (zone #)
"ENABLED ZONE -----"	Zone enabled (zone #)
"DISABLED CKT -----"	Board circuit has been disabled (circuit #)
"ENABLED CKT -----"	Circuit has been enabled (circuit #)
"DISABLED DEVICE"	Device has been disabled
"ENABLED DEVICE "	Device has been re-enabled
"DISABLED LOOP 1"	Loop 1 has been disabled
"ENABLED LOOP 1 "	Loop 1 has been enabled
"DISABLED LOOP 2"	Loop 2 has been disabled
"ENABLED LOOP 2 "	Loop 2 has been enabled
"DISABLED LOOP 3"	Loop 3 has been disabled
"ENABLED LOOP 3 "	Loop 3 has been enabled
"DISABLED LOOP 4"	Loop 4 has been disabled
"ENABLED LOOP 4 "	Loop 4 has been enabled
"GND FLT PRESENT"	Ground fault present.
"GND FLT RESTORED"	Ground fault trouble restored to normal

"INTERNAL FAULT "	Addressable device trouble (Hochiki polling command (08))
"INT FAULT RESTORED"	Internal fault trouble restored
"INVALID ABORT ACTIVE"	Abort switch pressed in zone, no alarms present
"INV ABORT RESTORED"	Abort switch released in zone, no alarms present
"LOOP MODULE MISSNG"	Loop module not in place but devices are configured on them
"LOOP MODULE RESTORED"	LOOP MODULE MISSING trouble has cleared
"L1 OPEN CLASS A"	Loop 1 has open circuit on class A wiring
"L1 CLASS A RESTORED"	Loop 1 class A open circuit is restored
"L2 OPEN CLASS A"	Loop 2 has open circuit on class A wiring
"L2 CLASS A RESTORED"	Loop 2 class A open circuit is restored
"L3 OPEN CLASS A"	Loop 3 has open circuit on class A wiring
"L3 CLASS A RESTORED"	Loop 3 class A open circuit is restored
"L4 OPEN CLASS A"	Loop 4 has open circuit on class A wiring
"L4 CLASS A RESTORED"	Loop 4 class A open circuit is restored
"MULTIPLE DEVICES "	Multiple devices detected at this address
"RESTORED MULTIPLE"	Multiple devices trouble has cleared
"PALARM1 ACTIVE -----"	Device above pre-alarm1 threshold (analog data)
"PALARM1 RESTORE -----"	Device restored below pre-alarm1 threshold (analog data)
"PRE-ALARM1 PRESENT"	Pre-Alarm1 state for this zone activated
"PRE-ALARM1 RESTORED"	Pre-Alarm1 state for this zone de-activated
"PALARM2 ACTIVE -----"	Device above pre-alarm2 threshold (analog data)
"PALARM2 RESTORE -----"	Device restored below pre-alarm2 threshold (analog data)
"PRE-ALARM2 PRESENT"	Pre-Alarm2 state for this zone activated
"PRE-ALARM2 RESTORED"	Pre-Alarm2 state for this zone de-activated
"PC COMMUNICATION ERR"	The PC was interrupted during a configuration process
"PC COMMUNICATION OK"	The PC communication trouble has cleared
"PC CONFIGURING PANEL"	Configuration is currently being changed by the PC
"PC CONFIGURING DONE"	The PC has finished configuring the panel
"PROCESS INPUT ACTIVE"	Process control function input present
"PROCESS RESTORE"	Process control function input restored
"PROCESS PRESENT"	Process state for this zone activated
"PROCESS RESTORED"	Process state for this zone de-activated
"REMOTE RESET ACTIVE"	Remote reset switch activated and not released
"SUPERVISORY ACTIVE"	Supervisory function input present
"SUPERVISORY RESTORED"	Supervisory function input restored
"SUPERVISORY PRESENT"	Supervisory state for this zone activated
"SUPERVISORY RESTORED"	Supervisory state for this zone de-activated
"SYSTEM POWER LOW"	System 24 volt dc power is below limit for reliable operation
"SYSTEM POWER OK"	System 24 volt dc power is returned to normal limit
"TROUBLE INPUT ACTIVE”	Trouble function input present
"TROUBLE RESTORED"	Trouble function input restored
"TROUBLE PRESENT"	Trouble state for this zone activated
"TROUBLE RESTORED"	Trouble state for this zone de-activated
"UART FAILURE"	UART has been corrupted by ESD and then re-initialized
"UART RESTORED"	UART failure trouble is restored

"WALKTEST ACTIVE"	Walktest is activated
"WALKTEST EXPIRED"	Walktest timeout expired
"WATERFLOW ACTIVE"	Waterflow input activated
"WATERFLOW RESTORED"	Waterflow input de-activated
"WATERFLOW PRESENT"	Waterflow state for this zone activated
"WATERFLOW RESTORED"	Waterflow state for this zone de-activated
"WATERMIST ACTIVE"	Watermist input activated
"WATERMIST INACTIVE"	Watermist input de-activated
"WIRING FAULT-OPEN "	Open circuit fault on FRCM
"WIRING FAULT-SHORT "	Short circuit fault on FRCM
"WIRING FAULT RESTORE"	Wiring fault on FRCM has returned to normal
"WRONG DEVICE KIND "	Wrong KIND of devices has been found
"RESTORED DEVICE KIND"	Correct KIND of device has been restored to this address
"ZONE DISABLE ACTIVE"	Zone disable input activated
"ZONE DISABLE RESTORE"	Zone disable input de-activated

APPENDIX 3 - CHEETAH Battery Calculation Form

	Standby Current		Alarm Current
1. CSC	0.250 A		0.250 A
2. SLM (if installed)	0.075 A		0.075 A
3. CRM4 (0.010A per relay)	0.000 A		_____A
4. Communication Loop (CSC + SLM)	_____A	<SAME#>	_____A (note 4)
5. Auxiliary Power (CSC + SPS)	_____A (note 1)		_____A (note 2,4)
6. Notification Circuits	0.000 A		_____A (note 2)
	_____A Total (1)		_____A Total (2)

Addressable Device Current		Communication Loop (#used)(current)=total	Auxiliary Power (#used)(current)=total
55-020	FRCM	(_____)(0.46 mA)=_____	n/a
55-021	SOM	(_____)(0.32 mA)=_____	(_____)(0.53 mA)=_____(note4)
55-022	SRM	(_____)(0.27 mA)=_____	(_____)(mA)=_____(note4)
55-023	R2M	(_____)(0.54 mA)=_____	n/a
60-1028	Thermal detector	(_____)(0.50 mA)=_____	n/a
60-1021	Photo detector	(_____)(0.50 mA)=_____	n/a
60-1032	Ion detector	(_____)(0.50 mA)=_____	n/a

Notification model (#used)(mA each) = Total Current (A)

_____

_____

_____

_____

_____

Standby Capacity = [Total (1)] x [standby time] + [Total (2)] x [0.083] (note 5)

Minimum Battery Size = [Standby Capacity] x [1.2] =_____Ah (note 3,5)

NOTES:

1. - Auxiliary Power cannot exceed 1.0A (CSC only), or 2.0A (CSC+SPS) in normal standby condition.
2. - Auxiliary Power plus Notification Power cannot exceed 5.0A (CSC only), and 10.0A (CSC+SPS).
3. - CSC can support up to 65 Ah of standby batteries. SPS can support up to an additional 65 Ah of standby batteries for a system total of 130 Ah.
4. - Addressable device currents above are identical for Normal Standby and Alarm Condition. Auxiliary Power does not include current delivered to SRM or SOM output circuits during alarm condition. SRM's auxiliary power consumption is 10.0 mA when using an ARM module and 1.2 mA when using a solenoid.
5. - Standby time should be 24, 60 or 90. 0.083 represents 5 minutes of alarm. 1.2 represents battery derating factor.

APPENDIX - 4 - CONFIGUATION FORMS

TIME BASE CONTROL GROUP										
	ON	OFF	S	M	T	W	T	F	S	H
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										

HOLIDAY (H) = UP TO 18 HOLIDAYS

OUTPUT STATES SELECTABLE
NONE
PROC
TRB
SUPR
DRLL
ABRT
PAL1
PAL2
ALRM
PRED
RELE
WMST

PATTERNS					
INDEX	PATTERN				USE
0	0000	0000	0000	0000	STEADY OFF
1	1111	1111	1111	1111	STEADY ON
2	1100	1100	1100	0000	TEMPORAL
3	1100	1100	1100	1100	SLOW PULSE
4	1010	1010	1010	1010	MARCH TIME
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

LOOP CIRCUIT		
	CLASS A/B	ENABLE E/D
LOOP1		
LOOP2		
LOOP3		
LOOP4		

POWER-IN		
	AC	24VDC
	Y/N	BATT/AUXIN/NONE
MAIN		
SPS		

ZONES

ZONE#	ALARM	SUP				DELAY			E/D	ZONE NOTES
		CROSSZ		COUNTZ	SINREL	MAN	AUTO	ABORT (1-6)		

PHOTO/ION/HEAT											
LOOP-ADDRESS	TYPE	ALARM1	ALM-DAY	PRE-ALM	PRE-ALM	ALMVER	TIMEBAS	DRIFT	ENABLE	ZONE(S)	CUSTOM MESSAGE
	PHOTO/	S1	S2	P1*	P2*	AV(10-60)	TB(0-15)	Y/N	E/D	UP TO 32	
	ION/HEAT	PHOTO=8-35 ION=80 HEAT=35-50				or N					

* Pre-Alarm values for photo sensors 01-35

FRCM

LOOP-	DETECT	MANALRM	WATERFL	SUPER	PROCESS	MANREL	ABORT	SUPER-L	SILENCE	ZONE-DIS	RESET	DRILL	TROUBLE	REL-WCT		ZONES	CUSTOM MESSAGE
ADDRESS	NO	NO	NO	NO/NC	NO/NC	NO	NO	NO/NC	NO/NC	NO/NC	NO	NO/NC	NO/NC	NO	E/D	UP TO 32	

SOM & R2M										
LOOP-ADDRESS	WALK TEST E/D	ENABLE E/D	INDEX # (0LO-15HI)	STATE	ZONE	PATTERN (0-15)	OP CODE (0-3)	SILENCE Y/N	RESOUND Y/N	CUSTOM MESSAGE

OUTPUT STATES SELECTABLE
NONE, PROC, TRB, SUPR, DRLL, ABRT, PAL1, PAL2, ALRM, PRED, RELE, WMST

SRM						
LOOP-ADDRESS	STATE ALRM/PRED RELE/WMST	DEV 24VSOL/ARM 12VSOL	TIME CONT or 1-1270 SEC	ENAB E/D	ZONES UP TO 32	CUSTOM MESSAGE

APPENDIX - 5 - ABORT TYPES

These abort types are programmable by zone using configuration menu. Countdown does not begin until the system is in the predischarge state.

TYPE 1: Abort is effective only if active upon entry into predischarge state. Countdown continues during abort activation. Upon abort deactivation (during predischarge), the release cannot again be aborted, so release occurs upon countdown completion. Conforms to Industrial Risk Insurers (IRI) requirements.

TYPE 2: Countdown continues during abort activation. Release occurs when both the countdown is completed and the abort is deactivated.

TYPE 3: If the abort is active during predischarge, release occurs upon abort deactivation.

TYPE 4: If the abort is active during predischarge, release occurs 10 seconds after abort deactivation. If counter was below 10 seconds upon abort activation, then.....

TYPE 5: Upon abort deactivation, countdown occurs from the full programmed countdown time. Prior to countdown completion, abort activation extends the countdown time to the programmed length. Does not conform to UL requirements, but is allowed by some Local Authority having Jurisdiction.

TYPE 6: Upon abort deactivation, system operates in “NYC mode” which has a 9 second verification delay, then a 30 second countdown. Prior to countdown completion, abort activation again extends the countdown time. During 120 second verification delay, the system emulates continuous abort activation. After a 90 second delay, the system starts a 30 second predischarge delay. Does not conform to UL requirements, but is allowed by some Local Authority having Jurisdiction.

NOTE: The ABORT switch delays releases initiated by automatic detection schemes. Releases initiated by activated Manual Release input circuits override the Abort Switch.

APPENDIX - 6 - ANTI-STATIC PROCEDURE

!!! WARNING !!! Always wear a grounding strap when handling modules.

Handle modules by the edges only and avoid touching the integrated circuits. Wearing natural fibers such as cotton can also help reduce static buildup. It is possible to build up to a 30,000 volt potential (or greater) between yourself and other surfaces. Static discharges of 3000 volts are not perceptible to the touch. Discharging voltages much smaller than this into electronic circuits can cause damage.

Damage due to electrostatic discharge is often not immediately fatal to circuitry, but rather causes latent failures which degrade components causing erratic operation and possible failure at some later time. Keep all modules in protective static bags except when they are installed in the enclosure. Handle them carefully (keeping yourself grounded) while installing modules. If the installer is grounded at all times, damage due to static discharge will not occur.

The preferable ground point is chassis ground. This can be obtained at the green wires attached to enclosure studs. There does not have to be “zero” ohms between the installer and ground to be considered “grounded”. In fact, most ground straps have a characteristic impedance of 1000 to 1,000,000 ohms to protect the installer from shock potential.

APPENDIX - 7 - ERROR CHECKING CODES

CONFIGURATION RULE TEST #1
Every suppression zone must have at least one manual release input assigned to that zone. If the man_release bit is set then this rule does not apply.

CONFIGURATION RULE TEST #2
Every input must have an associated output, regardless of the state assigned by the function of that input. Since all analog devices will activate the on-board supplemental relay assigned to alarm, only FRCM's need be checked. Only those FRCM's assigned a function which does not activate an on-board supplemental relay need be checked for an SOM or supervised circuit matchup.

CONFIGURATION RULE TEST #3
No analog device witha an alarm verification delay can be assigned to a suppression zone.

CONFIGURATION RULE TEST #4
No analog photo with the high velocity selection can have a sensitivity greater than 2.5%.

CONFIGURATION RULE TEST #5
Every watermist zone must have an SRM assigned to it.

CONFIGURATION RULE TEST #6
No watermist zone must have an abort assigned to it.

CONFIGURATION RULE TEST #7
An SRM assigned to watermist state must have a zone with an on-time.

CONFIGURATION RULE TEST #8
An SRM assigned to watermist state must be assigned to a suppression zone.

APPENDIX - 8 - OPERATION SPEED OPTION

To minimize response times, the system uses an interrupt driven response to inputs. For extreme speed optimization, particular "faster" addresses can be used. For these extreme high speed systems, a good design methodology is to set critical devices to addresses that are queried first after an interrupt.

The first level of priority is to use low addresses. In general, devices at addresses 1-8 are the first addresses searched for an interrupt. However, many low order addresses at or immediately above multiples of 8 also offer excellent speed performance. (such as 8-11, 16-18, 24-25, 32)

Best addresses, in approximate order of speed performance after an interrupt are:
1, 2, 8, 3, 9, 16, 4, 10, 17, 24, 5, 11, 18, 25, 32, 6, 12, 19, 26, 33, 40, 7, 13, 20 etc.

If high speed is required, another technique is to use multiple loops to minimize the number of devices per loop. Using four loops versus two loops can provide approximately twice the speed performance.

APPENDIX - 9 - SYSTEM OPERATION POSTING

P/N 02-4207

OPERATING INSTRUCTIONS
FIKE PROTECTION SYSTEMS
10-052 CHEETAH CONTROL SYSTEM

OPERATIONAL CONDITIONS

SYSTEM STATUS	LED's ON	AUDIBLE STATUS	LCD DISPLAY
Normal Standby:	AC Power LED on	All audibles off	System OK
Loss/Low AC	AC Power LED off Trouble LED flashes	Local piezo on	AC1 or AC2 power trouble
System Trouble:	Trouble LED flashes	Local piezo on	Trouble Type Trouble output(s) on
Supervisory Alarm:	Supervisory LED flashes	Local piezo warbles	Supervisory Type Supervisory output(s) on
Pre-Alarm:	Pre-Alarm LED flashes	Local piezo chirps	Pre-Alarm Type Pre-Alarm output(s) on
System Alarm:	Fire Alarm LED flashes	Local piezo chirps	Alarm Type Alarm output(s) on
Predischarge:	Fire Alarm LED flashes	Local piezo chirps	Predischarge Type Predischarge output(s) on
Release:	Fire Alarm LED flashes	Local piezo chirps	Release Type Release output(s) on

To Silence Panel:	Open Door Press the Acknowledge button
To Reset Panel:	Open Door Press Reset button
To Silence Outputs:	Open Door Press Alarm Silence button

CAUTION: Remove AC and battery power before servicing equipment

IN CASE OF TROUBLE CONTACT:

_____
_____
_____
Phone # _____

<OR>

Customer Service Department
Fike Protection Systems
Division of Fike Corporation
(816) 229 - 3405

Refer to Fike Installation, Operation and Maintenance Manual #06-149

Frame this sheet and place adjacent to control equipment.