Installation Manual

10-068, Cheetah® Xi

Addressable Fire Suppression Control System

P/N 06-356
(Rev. 11 / March, 2024)

Fike®

SOLUTIONS

- Fire Protection
- Explosion Protection
- Overpressure Protection
- Pressure Activation

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REVISION HISTORY

Document Title: Cheetah Xi Fire Suppression Control System Installation Manual

Document Reorder Number: 06-356

Revision	Section	Date	Reason for Change
0	All Sections	07/2005	Initial Release
1	All Sections	11/2007	Product Update, Firmware Version 3.00
2	2.4, 3.1, 3.8, 6.7, 7.4, 8.3, 8.5	04/2008	Release of new system modules
3	1, 2, 3, 4, 7 & Appendix	08/2008	Release of 20 Zone Remote Annunciator
4	1, 2, 3, 6 & 8	03/2010	Added IRM Compatibility
5	All Sections	04/2012	Separated manual into separate Installation, Operation and Programming Manuals, updated compatible peripheral bus devices, and added FAAST detector
6	All Sections	08/2014	Added FAAST XT aspirating smoke detector
7	Section 3.9 and Appendix A	02/2015	Added 3.9.4.1 and updated Appendix A battery calculation
8	All Sections	09/2015	Clarifications and General Updates
9	All Sections	10/2016	Added VESDA Modbus HLI and new FAAST detectors; Firmware V7.20
10	Sections 1, 4 and Appendix A	12/2019	Revised to include FM installation requirements
11	All Sections	03/2024	Revised to include minor board changes and updated class/style designations in accordance with UL 9th Ed.

LIST OF EXHIBITS

1.1 ABOUT THIS MANUAL

This manual is intended for those individuals who are responsible for the installation of the Fike Cheetah Xi Addressable Fire Suppression Control System. Others such as architects, engineers, sales and marketing personnel, etc. will find the information useful as well. It also allows those parties responsible for verifying the system design to determine if the design parameters have been met.

The first-time installer and/or user should thoroughly read and understand the instructions contained within this manual before using this device. These instructions must be followed to avoid damage to the equipment itself or adverse operating conditions caused by improper installation, operation, and servicing.

1.2 PRODUCT SUPPORT

If you have a question or encounter a problem not covered in this manual, you should first try to contact the distributor that installed the protection system. Fike has a worldwide distribution network. Each distributor sells, installs, and services Fike equipment. Look on the inside of the door, left side, there should be a sticker with an indication of the distributor who sold the system. If you can not locate the distributor, please call Fike Customer Service for locating your nearest distributor, or go to our web-site at www.fike.com. If you are unable to contact your installing distributor or you simply do not know who installed the system you can contact Fike Product Support at (800) 979-FIKE (3453) Option 21, Monday through Friday, 8:00 AM to 4:30 PM CST.

1.3 SAFETY INFORMATION

Important safety admonishments are used throughout this manual to warn of possible hazards to persons or equipment.

WARNING

Warnings are used to indicate the presence of a hazard which will or may cause personal injury or death, or loss of service if safety instructions are not followed or if the hazard is not avoided.

Caution

Cautions are used to indicate the presence of a hazard which will or may case damage to the equipment if safety instructions are not followed or if the hazard is not avoided.

Notes: Notes indicate the message is important, but is not of a Warning or Caution category. These notes can be of great benefit to the user and should be read.

1.4 TERMS USED IN THIS MANUAL

The following are various terms used in this manual with a brief description of each.

Ω - Symbol for “ohm”. Unit of resistance.

Abort State - (“Abort” Yellow LED ON, local panel sounder (Piezo) emits a modulated fast pattern). The Abort occurs when an input circuit configured for abort operation has been activated while an alarm condition is present. The abort state is a non-latching event and is intended for preventing a suppression zone from advancing to the release state.

AC Normal State - (“AC Normal” Green LED ON). The system is in the AC Normal state when appropriate AC power is being applied to the system.

Alarm State - (“Alarm” Red LED ON, piezo emits a slow pulse pattern). The alarm occurs when an input circuit configured for alarm operation has been activated. Activation typically initiated by a detector or contact device. The alarm state is a latching event in the Cheetah Xi. The operator will be required to RESET the Cheetah Xi in order for the panel to exit/clear the alarm state.

Initiating Device - A system component that originates transmission of a change-of-state condition, such as in a smoke detector, manual fire alarm box, or supervisory switch. This manual interchanges the terms initiating device and input device.

Initiating Device Circuit - A circuit to which automatic or manual initiating devices are connected where the signal received does not identify the individual device operated. This manual interchanges the terms initiating device circuit and input circuit.

Normal State - (“Trouble” Yellow LED OFF). The system is in the normal state when the power supply and all circuits are configured properly, connected, and responding properly. The system remains in normal state until a trouble condition occurs.

Notification Appliance - A fire alarm system component such as a bell, horn, speaker, light, or textual display that provides audible, tactile, or visible output, or any combination thereof. The device notifies building occupants of system status. This manual interchanges the terms notification and audible appliance.

Notification Appliance Circuit - A circuit or path directly connected to a notification appliance(s). This manual interchanges the terms notification appliance circuit and audible circuit.

Non-power-Limited - A circuit designation given for wiring purposes. The amount of current flowing through the circuit is unlimited vs. being limited, or power-limited. AC power and Battery wiring is non-power-limited.

Power-Limited - A circuit designation given for wiring purposes. The amount of current flowing through the circuit is limited (typically by fuse) vs. being unlimited, or non-power-limited. The Cheetah Xi addressable loops and output circuits are power-limited. The circuit has a maximum power that flows through it or it current limits and opens the circuit.

Pre-Discharge State - (“Pre-Discharge” Red LED ON, Piezo emits a slow pulse pattern). Pre-Discharge occurs when an input circuit configured for alarm operation has been activated and the Suppression Pre-Discharge type is satisfied. The Pre-Discharge state is a latching event in the Cheetah Xi 50. The operator will be required to RESET the panel in order for the panel to exit/clear the release state.

Release State - (“Release” Red LED ON, Piezo emits a slow pulse pattern). Release occurs when an input circuit configured for manual release operation has been activated or the Pre-Discharge automatic countdown has expired with no Abort input active. The release state is a latching event and will follow the status of the supervisory input contact.

Supervisory State - (“Supervisory” Yellow LED ON, Piezo emits a fast pulse pattern). The supervisory state occurs upon activation of a supervisory input circuit. The supervisory state is non-latching and will follow the status of the supervisory input contact.

Trouble State - (“Trouble” Yellow LED ON, Piezo Constant). The trouble state occurs upon any detectable condition which could impair system operation including connection problems, ground faults, hardware problems, power problems, or configuration problems. Certain trouble conditions are latching; others allow the system to reset upon trouble condition removal. Depending upon the type of trouble condition, the system may or may not remain operational. When the system is in trouble state, it is not in the normal state.

1.5 RELATED DOCUMENTATION

To obtain a complete understanding of the specific features of the Cheetah Xi or to become familiar with related functions in general, refer to the documentation listed below. Please reference the most current version or the version noted on the label located on the product.

Exhibit 1-1: Related Documentation

Document Title	Part Number
Device Compatibility Document	06-186
DACT (P/N 10-2528 & 10-2476) Installation Instructions	06-479
Supplemental Power Supply Module (P/N 10-2474) Installation Instructions	06-340
Supplemental Loop Module (P/N 10-2473) Installation Instructions	06-339
CRM4 Relay Module (P/N 10-2204) Installation Instructions	06-345
Reverse Polarity Module (P/N 10-2254) Installation Instructions	06-156
RS485 Network Module (P/N 10-2482) Installation Instructions	06-349
Fiber Optic Network Module (P/N 10-2624) Installation Instructions	06-387
Remote Display Unit Product Manual (RDU2, RDU10 and RDU14)	06-610
Ethernet Module (P/N 10-2627) Product Manual	06-388
Multi-Interface Module (P/N 10-2583) Product Manual	06-367
Intelligent Graphic Annunciator Product Manual	06-231
Twenty Zone Remote Annunciator (P/N 10-2667) Product Manual	06-453
Relay Control Assembly (P/N 10-2777) Installation Instructions	06-580
HPM4 Relay Module (P/N 10-2770) Installation Instructions	06-443
Relay Card (P/N 10-2785) Installation Instructions	06-586
3 Card Remote Equipment Enclosure (P/N 10-2780) Installation Document	06-590
5 Card Remote Equipment Enclosure (P/N 10-2781) Installation Document	06-591
Class A Peripheral Bus Card (P/N 10-2792) Installation Instructions	06-606
Class A Peripheral Bus Card Assembly (P/N 10-080) Installation Instructions	06-609
Solenoid Supervision and Protection Assembly (P/N 10-2360) Installation	06-344
Masterbox Supervisor (P/N 10-2413) Installation Instructions	06-229
VESDA High Level Interface (P/N 68-023) Product Manual	06-158
VESDA Modbus High Level Interface (P/N 68-517) Product Manual	06-823
Hand Held Programmer (P/N 10-2648) Operating Instructions	06-390
C-Linx Panel Configuration Software Manual	06-448
33 AH Battery Enclosure Installation Instructions	06-534
75 AH Battery Enclosure Installation Instructions	06-535
Enclosure Installation Instructions	06-426
Agent Release Module (ARM III)	06-106
Impulse Release Module (IRM)	06-552
Surge Suppressor Compatibility Document	06-588
Suppression Disconnect Switch (P/N 10-2698 & 10-2699)	06-472

Reserved for future use.

2.1 SYSTEM DESCRIPTION

The Fike Cheetah Xi (P/N 10-068) is a state of the art, true addressable peer-to-peer fire suppression control system. It provides the latest technology in detection communication with extensive programmability in one cost effective system. Its intelligence has every device communicating as a peer on the signaling line circuit. This intelligence provides speed with response times as little as one-quarter second between manual pull station activation to notification appliance sounding.

Its flexibility provides you the freedom to attach the devices you require for your specific installation. The Cheetah Xi (P/N 10-068) is equipped with two signaling line circuits, each capable of communicating with 254 devices in any combination. An optional loop card can be added to increase the total number of signaling line circuits to four. This increases the total system capacity to 1,016 devices. Each Cheetah Xi is capable of being networked (up to 128 panels total) providing 130,048 devices total.

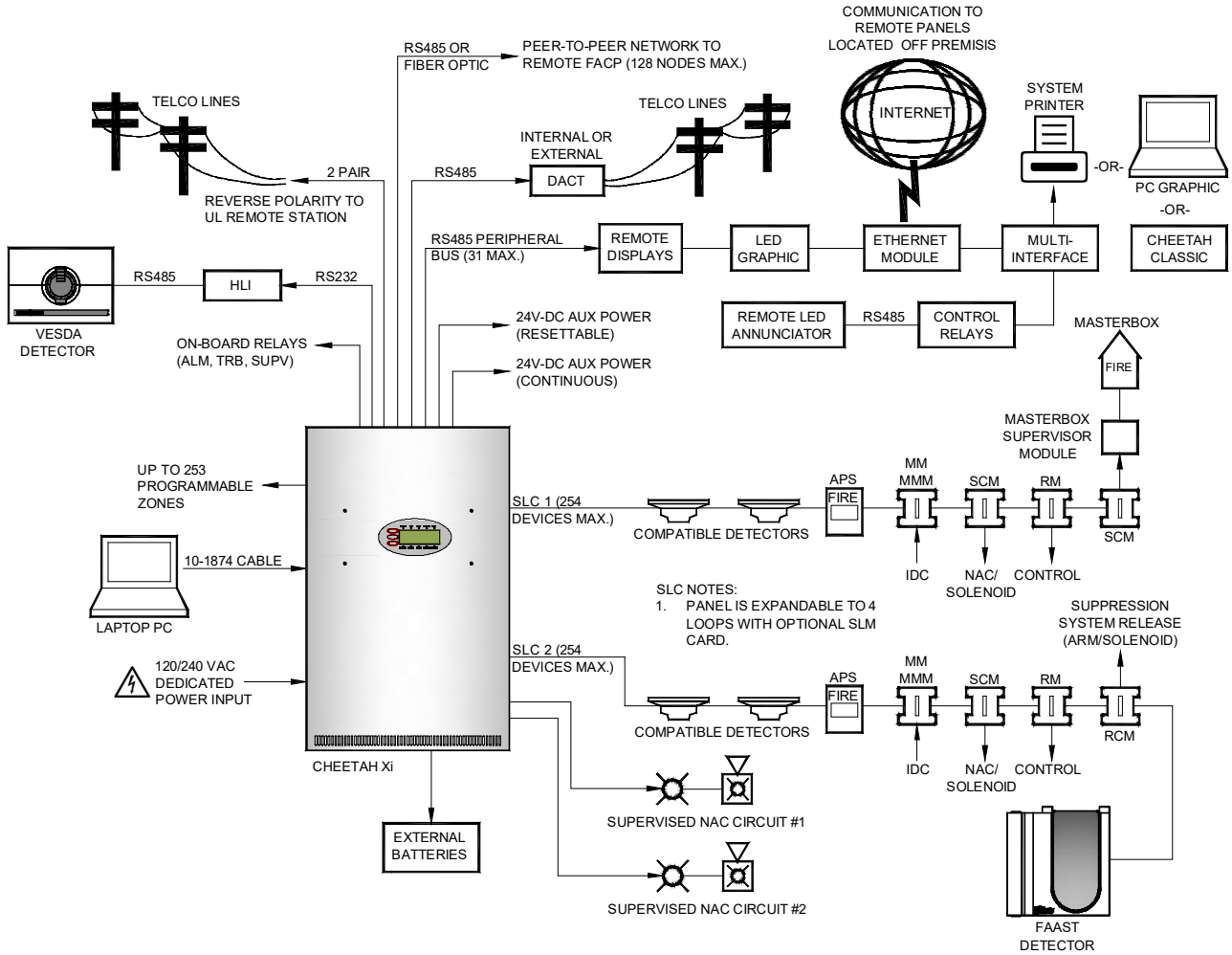


Exhibit 2-1: Cheetah Xi Block Diagram

2.1.1 CHEETAH Xi FEATURES

GENERAL

- Two 24V DC, 2A NAC (audible) circuits on main board with integrated synchronization and fused protection
- 253 user defined zones
- 80 character, backlit LCD display
- Real time clock
- 3200 event history buffer
- Critical process monitoring
- One-person Walktest capability
- Disable by point/circuit or zone
- Drill function at panel and remote displays
- Provides solenoid releasing operation
- Alarm verification
- Easy to add/remove devices
- Diagnostic menus
- Removable terminal blocks for field wiring
- Local panel sounder (piezo) with distinct event tones
- 10 Status LED's to easily identify system status
- Available with and without integral **SERIAL, Point ID** DACT interface
- Supports up to 31 peripheral devices (i.e. Remote Display, LED Graphics, etc.)
- Supports ability to network up to 128 nodes (each could be Cheetah Xi or CyberCat)

POWER

- 6 amps useable alarm power, 1.5A standby, expandable to 12 amps alarm power, 3A standby
- Operation from 120VAC/ 60 Hz or 240VAC 50 /60Hz
- Two 24V DC, 2A continuous auxiliary power outputs, expandable to 5 circuits with SPS
- One 24V DC, 2A resettable auxiliary power output
- Supports up to 75 AH of batteries, expandable to 150 AH using SPS

SIGNALING LINE CIRCUIT

- Address devices with Infrared (IR) tool, similar to remote control device, non-listed.
- Two addressable loops expandable to four, 254 devices per loop, maximum 1016 devices.
- Loops can be wired NFPA Class B (Style 4), Class A (Style 6), or Class X (Class A/Style 7) with isolator devices.
- True peer-to-peer digital protocol for extremely fast and reliable communications
- Addressable Device "learn" and "auto-program" functions
- Automatic day/night sensitivity adjustment
- Automatic holiday sensitivity adjustment
- Acclimate operation for detectors
- IR Tool provides ability to read sensitivity levels or perform remote test of device
- Devices contain multi-color LED for quick reference of device status
- Detectors provide early warning pre-alarm detection and can also provide a summing feature (up to 8 detectors), non-listed.
- Sounder or Relay Bases fully programmable
- Optional Remote LED can be added to a detector base, programmable for any device, zone/state

ENCLOSURE

- 18 gauge steel enclosure, red or black finish
- Surface or flush mounting
- Removable door for ease of installation

2.1.2 LISTINGS AND APPROVALS

Approval Agency	File Number
Underwriters Laboratories	S2203
Type: Local, Remote Station (PPU), Central Station (PPU), Proprietary Supervising Station (PPU/SSU)	
Service Type: A-Automatic Fire Alarm, M-Manual Fire Alarm, Releasing Device Service, WF-Water-flow alarm, SS-Sprinkler Supervisory Service, DACT	
Type Signaling: Non-coded	
Factory Mutual (FM)	Approved
California State Fire Marshall (CSFM)	7165-0900:149
City of New York (COA)	#6119
City of Denver	Approved

2.1.3 AGENCY STANDARDS AND COMPLIANCE

This Fire Alarm Control Panel complies with the following NFPA and UL standards:

NFPA 72 – National Fire Alarm Code
UL 864 – Standard for Control Units and Accessories for Fire Alarm Systems
UL 2017 – General Purpose Signaling Devices and Systems

The installer should also be familiar with the following documents and standards:

National Fire Protection Association (NFPA) Codes:

NFPA 12 – Carbon Dioxide Extinguishing Systems
NFPA 12A – Halon Fire Extinguishing Systems
NFPA 13 – Sprinkler Systems
NFPA 15 – Water Spray Fixed Systems
NFPA 16 – Deluge, Foam-water and Foam-water Spray Systems
NFPA 70 – National Electrical Code (NEC)
NFPA 70 – Article 300 – Wiring Methods
NFPA 70 – Article 760 – Fire Protective Signaling Systems
NFPA 72 – National Fire Alarm and Signaling Code
NFPA 101 – Life Safety Code
NFPA 110 – Emergency Standby Power Systems
NFPA 750 – Standard on Water Mist Fire Protection Systems
NFPA 2001 – Clean Agent Extinguishing Systems

Underwriters Laboratories (UL) Standards:

UL 38 – Manually Actuated Signaling Boxes
UL 217 – Smoke Detectors, Single and Multiple Station
UL 228 – Door Closers – Holders for Fire Protective Signaling Systems
UL 268 – Smoke Detectors for Fire Protective Signaling Systems
UL 268A – Smoke Detectors for Duct Applications
UL 346 – Waterflow Indicators for Fire Protective Signaling Systems
UL 464 – Audible Signaling Appliances
UL 521 – Heat Detectors for Fire Protective Signaling Systems
UL 1481 – Power Supplies for Fire Protective Signaling Systems
UL 1638 – Visual Signaling Appliances
UL 1971 – Visual Signaling Appliances

Factory Mutual (FM) Standards:

FMRC 1011 and 1012 – Deluge and Pre-action Sprinkler Systems
Applicable Local and State Building Codes
Requirements of the Local Authority Having Jurisdiction

2.1.4 MINIMUM SYSTEM CONFIGURATIONS

Exhibit 2-2: MINIMUM SYSTEM CONFIGURATIONS

This table indicates the minimum components needed to meet the intended applications. Y = Yes N = No O = Optional		Protected Premises (Local)	Central Station (PPU)	Remote Supervising Station (PPU)	Proprietary Supervising Station (PPU/SSU)	Releasing Service	UL Listed	FM Approved
Part Number	**Description**							
10-2542	Cheetah Xi Controller	Y	Y	Y	Y	Y	Y	Y
10-2541	Cheetah Xi Enclosure	Y	Y	Y	Y	Y	Y	Y
02-10881 *(Note 1)*	120VAC Primary Transformer	Y	Y	Y	Y	Y	Y	Y
02-10882 *(Note 1)*	240VAC Primary Transformer	O	O	O	O	O	Y	Y
10-2528 *(Note 2)*	5-Zone DACT (Bosch FPT-DACT-LC), internal	O	Y	Y	O	O	Y	Y
10-2476 *(Note 2)*	5-Zone DACT (Bosch FPT-DACT), external	O	O	O	O	O	Y	Y
10-2474	Supplemental Power Supply (SPS)	O	O	O	O	O	Y	Y
10-2473	Supplemental Loop Module (SLM)	O	O	O	O	O	Y	Y
10-2204	CRM4 Relay Module	O	O	O	O	O	Y	Y
10-2254	CRPM Reverse Polarity Module	O	O	Y	O	O	Y	Y
10-2482	Network Module (RS485)	O	O	O	O	O	Y	Y
10-2624	Multi-Mode Fiber Optic Network Module	O	O	O	O	O	Y	Y
10-2792 *(Note 3)*	Class A Peripheral Bus Card	O	O	O	O	O	Y	Y
10-2646	14 Button Remote Display	O	O	O	O	O	Y	N
10-2631	10 Button Remote Display	O	O	O	O	O	Y	N
10-2630	2 Button Remote Display	O	O	O	O	O	Y	N
68-023	VESDA Open Protocol High Level Interface (HLI)	O	O	O	O	O	Y	Y
68-517	VESDA Modbus High Level Interface (HLI)	O	O	O	O	O	Y	Y
10-2627	Ethernet Module	O	O	O	Y	O	Y	Y
10-2583	Multi-Interface Module	O	O	O	Y	O	Y	Y
10-1XX	Intelligent LED Graphic Annunciator	O	O	O	O	O	Y	N
10-2667	20-Zone Remote Annunciator	O	O	O	O	O	Y	N
10-2154	Battery Enclosure, 33 AH maximum	O	O	O	O	O	Y	Y
10-2236	Battery Enclosure, 75 AH maximum	O	O	O	O	O	Y	Y
10-2780	Remote Equipment Enclosure, 3 Card	O	O	O	O	O	Y	Y
10-2781	Remote Equipment Enclosure, 5 Card	O	O	O	O	O	Y	Y
10-2770	HPM4 Relay Module	O	O	O	O	O	Y	Y
10-2777	Relay Control Assembly	O	O	O	O	O	Y	N
10-2785	Relay Card	O	O	O	O	O	Y	N

Notes:
1. *Only one transformer (120VAC or 240VAC) can be used.*
2. *DACT must be purchased from Fike for proper operation with the CyberCat panel.*
3. *Included in 10-080 Class A Peripheral Bus Assembly.*

Exhibit 2-3: MINIMUM SYSTEM CONFIGURATIONS – CONT.

This table indicates the minimum components needed to meet the intended applications. Y = Yes N = No O = Optional		Protected Premises (Local)	Central Station (PPU)	Remote Supervising Station (PPU)	Proprietary Supervising Station (PPU/SSU)	Releasing Service	UL Listed	FM Approved
Part Number	**Description**							
63-1052	Photoelectric Detector	O	O	O	O	O	Y	Y
63-1058	Photoelectric Detector, Isolator Version	O	O	O	O	O	Y	Y
67-033	Ionization Detector	O	O	O	O	O	Y	Y
67-034	Ionization Detector, Isolator Version	O	O	O	O	O	Y	Y
63-1053	Combination Photo/135°F Heat Detector	O	O	O	O	O	Y	Y
63-1059	Combination Photo/135°F Heat Detector, Isolator Version	O	O	O	O	O	Y	Y
60-1039	Heat Detector, 135°F-190°F (57-88°C) FT/RR	O	O	O	O	O	Y	Y
60-1040	Heat Detector, 135°F-190°F (57-88°C) FT/RR, Isolator	O	O	O	O	O	Y	Y
63-1054 (EBF)	Detector Base, 6-inch	O	O	O	O	O	Y	Y
63-1060 (EBFI)	Detector Base, 6-inch, Isolator Version	O	O	O	O	O	Y	Y
63-1055 (EB)	Detector Base, 4-inch	O	O	O	O	O	Y	Y
63-1061 (EBI)	Detector Base, 4-inch, Isolator Version	O	O	O	O	O	Y	Y
63-1064 (EBS)	Sounder Base, 6-inch	O	O	O	O	O	Y	Y
63-1063 (EBR)	Relay Base, 6-inch	O	O	O	O	O	Y	Y
55-045 *(Note 1)*	MMM – Mini Monitor Module	O	O	O	O	Y	Y	Y
55-050 *(Note 1)*	MMM – Mini Monitor Module, Isolator Version	O	O	O	O	Y	Y	Y
55-041 *(Note 1)*	MM – Monitor Module 4-inch	O	O	O	O	Y	Y	Y
55-046 *(Note 1)*	MM – Monitor Module 4-inch, Isolator Version	O	O	O	O	Y	Y	Y
20-1063	APS – Addressable Pull Station	O	O	O	O	O	Y	Y
20-1064	APS – Addressable Pull Station, Isolator Version	O	O	O	O	O	Y	Y
55-052	RCM – Release Control Module	O	O	O	O	O	Y	Y
55-053	RCM – Release Control Module, Isolator Version	O	O	O	O	O	Y	Y
55-042	SCM – Supervised Control Module	O	O	O	O	Y	Y	Y
55-047	SCM – Supervised Control Module, Isolator Version	O	O	O	O	Y	Y	Y
10-2360	Series Solenoid Diode/Resistor	O	O	O	O	Y	Y	Y
10-2413	Masterbox Interface	O	O	O	O	O	Y	Y
55-043	RM – Relay Module	O	O	O	O	O	Y	Y
55-048	RM – Relay Module, Isolator Version	O	O	O	O	O	Y	Y
63-1057	Photo Duct Detector	O	O	O	O	O	Y	Y
63-1062	Photo Duct Detector, Isolator Version	O	O	O	O	O	Y	Y
63-1158	Duct Detector Housing (isolator base)	O	O	O	O	O	Y	Y
68-140	FAAST XM Aspirating Smoke Detector	O	O	O	O	O	Y	Y
68-302	FAAST XT Aspirating Smoke Detector	O	O	O	O	O	Y	Y
68-509	FAAST XS Aspirating Smoke Detector	O	O	O	O	O	Y	Y

Notes: 1. Module is required to monitor sprinkler system components (e.g. Waterflow, Tamper, Low Air, etc.).

Reserved for future use.

3.1 BASIC EQUIPMENT PACKAGES

The Cheetah Xi system (P/N 10-068) includes the equipment enclosure, Cheetah Xi control board, transformer, and necessary mounting hardware. Components such as the cabinet color, transformer power requirements, and cabinet requirements are custom configured to suit your specific project requirements. Exhibit 3-2 shows the available ordering options for the Cheetah Xi equipment packages.

Cheetah Xi 10-068-c-p-L	
Enclosure Color **c:**	**R** = Red, **G** = Grey
Transformer Power **p:**	**1** = 120V, **2** = 240V
Lexan Cover **L:**	**L** = Lexan required over display opening

Exhibit 3-2: System Ordering Formats

Exhibit 3-1: Cheetah Xi System Package

Additional system components such as batteries, detectors, modules, cards, peripheral devices, etc. must be ordered separately to suit your specific project requirements.

3.2 CHEETAH Xi CONTROLLER

The heart of the Cheetah Xi system is the controller P/N 10-2542 (See Exhibit 3-3). The system controller consists of a printed circuit board (PCB) that incorporates a 6 amp primary power supply with battery charger, system microprocessors, hardware interface terminals and system display. The controller is the central hub for communication between the systems intelligent, addressable field devices that are connected to the panel's signaling line circuits. The controller is also used for system timing, user interface, power delivery and system history archive.

Exhibit 3-3: Cheetah Xi System Controller with Display

The system display is an integral part of the Cheetah Xi controller. It is mounted directly to the controller and provides the function and navigation buttons that are used to operate and program the system.

Exhibit 3-4 shows the location of the various connectors on the Cheetah Xi control board. The function and specifications for each connection is listed in order of terminal block designation (P) on the following pages.

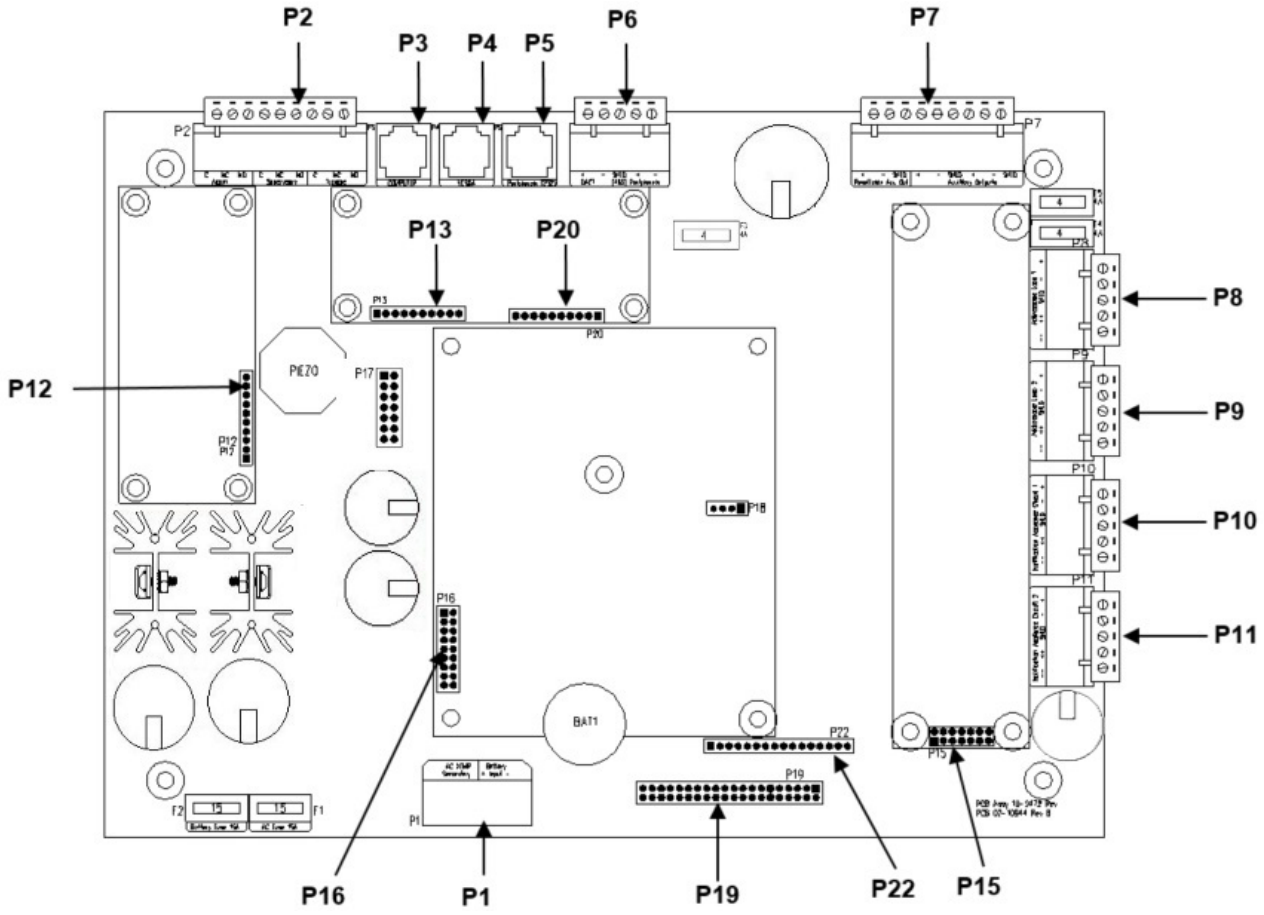


Exhibit 3-4: Cheetah Xi Controller Terminal Locations

Controller Specifications:

Controller Dimensions (H x W x D):	8 in. x 11 in. x 3 in. (20.3 cm x 27.9 cm x 7.6 cm)
Display Dimensions (H x W):	7 in. x 6.25 in. (17.8 cm x 15.9 cm)
Weight:	1.2 lbs. (0.54 kg.)
Power Output: with 10-2474-p SPS:	1.5 Amps (Normal Standby) 6 Amps (Alarm) 3 Amps (Normal Standby) 12 Amps (Alarm)
Power Consumption:	275 mA (Normal Standby)
Operating Environment:	+32°-120°F (0°-49°C), 93% relative humidity

Exhibit 3-5: Cheetah Xi Controller Terminal Specifications

Terminal Block	Terminal Labels	Function and Electrical Ratings/Requirements	Wiring Requirements
P1	AC XFMR Secondary	• 120 VAC Transformer P/N 02-10881 Standby = 3A @ 25.35 VAC Alarm = 6A @ 25 VAC • 240 VAC Transformer P/N 02-10882 Standby = 3A @ 25.4 VAC Alarm = 6A @ 25 VAC • Fused by F1, 15A field replaceable fuse, P/N 02-4174 • Non-power limited and supervised	16 AWG THHN wiring minimum Terminal block accepts 12 AWG – 16 AWG wire 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 Alarm.” ⚠**CAUTION:** It is critical that AC line power is applied to the left terminals of P1 and not the battery terminals. Doing so could cause damage to the controller.
	Battery Input (+ -)	• 24 VDC nominal standby battery input (Two 12 VDC batteries, sealed lead acid only) • 75 amp-hour maximum charging capacity • 4 Amps @ 27 VDC max. charge current • 12 Amps @ 27 VDC max. supply current • Fused by F2, 15A field replaceable fuse, P/N 02-4174 • Non-power limited and supervised	Batteries larger than 18 AH must be mounted in external battery enclosure. Use 14 AWG minimum wire (max. length of 10 ft. [3m] to connect batteries to controller)
P2	Alarm (Relay 1)	• Terminals C, NC, NO • SPDT Form C relay contact • DC Operation: 2 amps @ 30 VDC (pf-.35) • AC Operation: 0.5 amps @ 120 VAC (pf=.35) • Default alarm operation (configurable)	All connections shall be power limited or non-power limited, not both
	Supervisory (Relay 2)	• Terminals C, NC, NO • SPDT Form C relay contact • DC Operation: 2 amps @ 30 VDC (pf-.35) • AC Operation: 0.5 amps @ 120 VAC (pf=.35) • Default supervisory operation (configurable)	All connections shall be power limited or non-power limited, not both
	Troube (Relay 3)	• Terminals C, NC, NO • SPDT Form C relay contact • DC Operation: 2 amps @ 30 VDC (pf-.35) • AC Operation: 0.5 amps @ 120 VAC (pf=.35) • Default trouble operation	All connections shall be power limited or non-power limited, not both Relay contacts are normally energized and contacts are shown with power applied and no Troubles present on the system.
P3	Computer	• RS232 port, power limited and supervised • Used for panel programming, peripheral device configuration, and data retrieval using C-Linx software • Not intended for continuous connection • Do not connect the PC if a ground fault is present on the controller	Use communication cable P/N 10-1874A or B to connect programming computer to P3 50 ft. (15m) maximum cable length. PC communication: 19200 Baud, 8 data bits, no parity, 1 stop bit

Exhibit 3-6: Cheetah Xi Controller Terminal Specifications – Cont.

Terminal Block	Terminal Labels	Function and Electrical Ratings/Requirements	Wiring Requirements
P4	VESDA	• RS232 port, power limited and supervised • VESDA High Level Interface (HLI) P/N 68-023 and 68-517 connection point • Intelligently links Xtralis VESDA detectors to the Cheetah Xi by zone number. Does not require SLC address • HLI must be located in the same room as the panel and be located within 20 ft. (6.1m).	68-023 and 68-517 includes a 20 ft. (6.1m) RS232 cable P/N 02-15802 for connection to the Cheetah Xi controller P4. Cable must be in conduit or equivalently protected against mechanical injury. HLI must be powered from the Cheetah Xi auxiliary power outputs or a ground fault condition could occur.
P5	Peripherals (232)	• RS232 port, power limited and supervised • Interface point for Fike Guard voice evacuation system • C-Linx connection point for programming RS485 peripheral devices	Fike Guard voice evacuation system must be installed in same room as the Cheetah Xi panel within 50 ft. (15m) maximum
P6	DACT (+ -)	• Power limited and supervised • Interface point for Digital Alarm Communicator Transmitter (Point ID communication) • DACT can be mounted inside the panel or external in a separate enclosure	Terminal blocks accept 12 – 24 AWG
	Peripherals (485) (shld,+ , -)	• Power limited and supervised • Connects to RS485 peripheral devices • 31 peripheral devices maximum • Typical circuit voltage will vary between 0 – 1 VDC. It should never be a constant voltage or 0 VDC • Peripheral devices must be configured as supervised if 2-way communication is required	RS485 wiring: Belden 9841 or equal. Use Belden 82841, 82842, or 89841 for plenum applications Maximum wire length of 4000 ft. (1219m), 9600 bps, 5 VDC, 1mA Maximum wire impedance 110Ω Maximum wire capacitance 0.05uF 100Ω termination resistor is required on the last device on circuit, P/N 02-2519 (supplied with each device) T-tapping of circuit is NOT allowed Terminal blocks accept 12 – 24 AWG
P7	Resettable Aux Out (+, -, shld)	• Power limited and supervised • Regulated auxiliary power output rated 24 VDC @ 2A maximum, regulated 28 volts maximum • Fused by F3 for short circuit, 4A field replaceable fuse, P/N 02-11412 • Turns off momentarily during system reset • Used to power field devices requiring 24 VDC for operation	The Cheetah Xi controller has a total power capability of 6 amps expandable to 12 amps with the addition of the 10-2474, Supplemental Power Supply Terminal blocks accept 12 – 24 AWG **FM Requirement Only:** 20.4 VDC must be supplied to the last device on a releasing circuit under all conditions.
	Auxiliary Outputs (+, -, shld)	• Power limited and supervised • Continuous, regulated auxiliary power output rated 24 VDC @ 2A maximum, regulated 28 volts maximum • Fused by F4 and F5 for short circuit, 4A field replaceable fuse, P/N 02-11412 • Used to power field devices requiring 24 VDC for operation	The Cheetah Xi controller has a total power capability of 6 amps expandable to 12 amps with the addition of the 10-2474, Supplemental Power Supply Terminal blocks accept 12 – 24 AWG **FM Requirement Only:** 20.4 VDC must be supplied to the last device on a releasing circuit under all conditions.

Exhibit 3-7: Cheetah Xi Controller Terminal Specifications – Cont.

Terminal Block	Terminal Labels	Function and Electrical Ratings/Requirements	Wiring Requirements
P8	Addressable Loop 1 (+, -, shld, -, +)	• Power limited and supervised • Supports up to 254 addressable devices (only those listed in this manual) • Supports Class B (Style 4), Class A (Style 6) or Class X (Class A/Style 7) if using isolator devices • Maximum loop current draw: 100 mA @ 28 VDC • Typical circuit voltage will range from 24 VDC nominal to 0 – 5 VDC during data communication pulse. It should never be a constant 0 VDC • FM Approved Deluge and Pre-action Sprinkler operation requirements include Class A initiating circuits only, must be wired to FM Listed/Approved devices and must incorporate maximum wiring distances and losses to maintain the required 20.4 VDC at the solenoid.	12,000 ft. (3,657m) maximum wire length from panel to last device using 14 AWG Shielded cable should be used for electrically noisy environments Maximum resistance 70Ω (35Ω per leg) Maximum capacitance 0.60uF If using Class X wiring, the first and last isolator device shall be mounted within conduit, within the same room as the control panel, and no more than 20 ft. (6.1m) from the control panel Terminal blocks accept 12 – 24 AWG
P9	Addressable Loop 2 (+, -, shld, -, +)	• Power limited and supervised • Supports up to 254 addressable devices (only those listed in this manual) • Supports Class B (Style 4), Class A (Style 6) or Class X (Class A/Style 7) if using isolator devices • Maximum loop current draw: 100 mA @ 28 VDC • Typical circuit voltage will range from 24 VDC nominal to 0 – 5 VDC during data communication pulse. It should never be a constant 0 VDC • FM Approved Deluge and Pre-action Sprinkler operation requirements include Class A initiating circuits only, must be wired to FM Listed/Approved devices and must incorporate maximum wiring distances and losses to maintain the required 20.4 VDC at the solenoid.	12,000 ft. (3657m) maximum wire length from panel to last device using 14 AWG Shielded cable should be used for electrically noisy environments Maximum resistance 70Ω (35Ω per leg) Maximum capacitance 0.60uF If using Class X wiring, the first and last isolator device shall be mounted within conduit, within the same room as the control panel, and no more than 20 ft. (6.1m) from the control panel Terminal blocks accept 12 – 24 AWG
P10 and P11	Notification Appliance Circuit 1 (--, ++, shld, -, +)	• Power limited and supervised • Fused by F6 and F7, 4A field replaceable fuse, P/N 297004 • Continuous, regulated 24 VDC @ 2A maximum, regulated 28 volts maximum • Supports Class B (Style Y) using 1.2KΩ EOL resistor, P/N 10-2570 or Class A (Style Z) using redundant wiring • Can be programmed for Gentex or System Sensor synchronization protocols. • Once sync is selected, programmable for selective silence (strobes remain ON) or silence both horn and strobe simultaneously.	T-tapping of circuit is NOT allowed If using the synchronization protocol option, both circuits must use the same protocol (i.e. Gentex or System Sensor) The circuits are either ON or OFF and can not be configured for modulation patterns. Refer to Fike document 06-186, “Compatible Notification Appliances and Releasing Devices Manual” for a list of compatible NAC devices Terminal blocks accept 12 – 24 AWG
P12		• Provides connection point for an optional CRM4 relay module (P/N 10-2204) or an RPM reverse polarity module (P/N 10-2254) • If the internal mount dialer (P/N 10-2528) is installed, this module mounting space is not available	All CRM4 connections shall be power limited or non-power limited, not both See Section 4.11.

Exhibit 3-8: Cheetah Xi Controller Terminal Specifications – Cont.

Terminal Block	Terminal Labels	Function and Electrical Ratings/Requirements	Wiring Requirements
P13		• Provides connection point for an optional CRM4 relay module (P/N 10-2204) or an RPM reverse polarity module (P/N 10-2254) • If P20 is occupied by a Network module, the P13 terminal is not available	All CRM4 connections shall be power limited or non-power limited, not both See Section 4.11
P14	No Connection		
P15		• Connects optional Supplemental Loop Module, P/N 10-2473 to the Cheetah Xi controller	See Section 4.11
P16		• Connects optional Supplemental Power Supply Module, P/N 10-2474-P to the Cheetah Xi controller	See Section 4.11
P17		• For Fike use only	
P18		• For Fike use only	
P19		• Controller display interface (keypad and LEDs)	
P20		• Provides connection point for an optional RS485 network module (P/N 10-2482) or Fiber Optic network module (P/N 10-2624) • If P13 is occupied by a CRM4 or RPM module, the P20 terminal is not available	See Section 4.11
P21	No Connection		
P22		• Controller display interface (LCD only)	
P23		• For Fike use only	
TP1		• Cheetah Xi controller ground reference test point • Use when making DC voltage measurements on the control board • Normal ground fault limits (TP1 to Chassis): 2.17 VDC nominal for Level 1 and 5 VDC nominal for Level 2. If a ground fault is present, voltage will sway in either direction.	Ground fault detection impedances are 60K Ω between power ground and chassis ground or 1M Ω between main power and chassis ground
TP2		• Positive (+) side of the Cheetah Xi controller 24 VDC power bus • To verify controller voltage, connect positive lead of voltmeter to TP2 and ground lead of voltmeter to TP1	

3.3 SYSTEM ENCLOSURE

The Cheetah Xi system enclosure is designed to allow mounting of the controller board, AC power transformer, optional DACT, up to two 18 AH batteries, as well as one of the following optional cards and modules as required to suit your specific project requirements.

- Ethernet Module, P/N 10-2627
- Multi-Interface Module, P/N 10-2583
- Class A Peripheral Bus Card, P/N 10-2792
- Masterbox Interface, P/N 10-2413

The enclosure can be ordered as part of the basic equipment package as shown in Exhibit 3-2 or separately as shown in Exhibit 3-10.

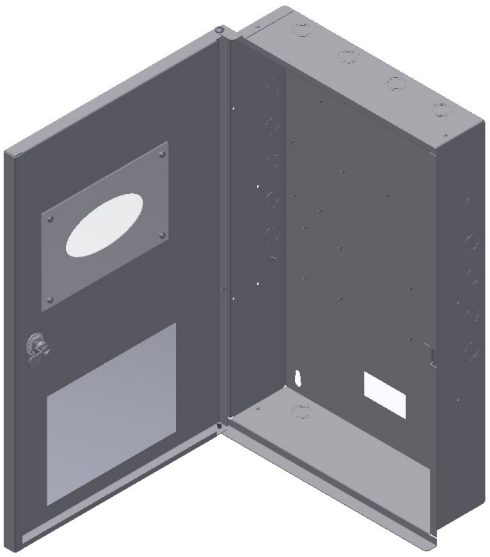


Exhibit 3-9: Cheetah Xi Enclosure

Enclosure Features

- Made of 18 gauge steel with baked on enamel finish.
- Each enclosure is suitable for surface or flush mounting.
- Numerous conduit knockouts are provided in the back box for easy access to the cabinet during system installation.
- Press-studs supplied in enclosure back-box for easy installation of system components (i.e., Cheetah Xi control board, transformers, DACT, etc.).
- The removable exterior door mounts on the left side of the cabinet only and is equipped with a key-lock and display viewing window. Doors open a full 180 degrees.
- A Lexan cover is installed over the exterior door viewing window(s) to prevent access to the panel interior.

Cheetah Xi 10-2541-c-L	
Enclosure Color **c:**	**R** = Red, **B** = Black
Lexan Cover **L:**	**L** = Lexan required over display opening

Exhibit 3-10: Enclosure Ordering Formats

Refer to Section 4 Installation for complete dimensional specifications of the enclosure.

3.4 OPTIONAL CIRCUIT MODULES

Several optional circuit modules can be installed onto the Cheetah Xi controller to expand its operational capabilities. A brief description of each module and its functionality is provided in this section for reference purposes. For a complete description of each module's functionality, installation and wiring, refer to the devices installation sheet.

3.4.1 DACT, 5 ZONE WITH SERIAL INTERFACE P/N 10-2528 (BOSCH FPT-DACT-LC), INTERNAL MOUNT P/N 10-2476 (BOSCH FPT-DACT), EXTERNAL MOUNT

The Digital Alarm Communicator Transmitter (See Exhibit 3-11) is used where point identification of alarm, supervisory and trouble events is required at a Central or Remote Receiving Station. The Cheetah Xi transmits all system information to the DACT via an RS485 connection. In addition, the DACT includes five programmable point inputs that can be individually configured to indicate seven types of system conditions: Fire Alarm, Waterflow Alarm, Supervisory, Monitor Alarm, System Fault, AC Failure and Low Battery. These inputs can be used in place of the intelligent RS485 connection to provide simple alarm monitoring where the receiving station is not capable of receiving point ID information.

Refer to Fike document 06-479, for further more information.

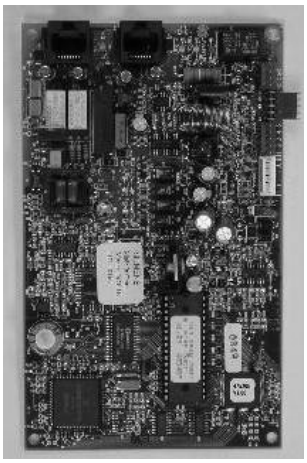


Exhibit 3-11: DACT

3.4.1.1 DACT KEYPAD PROGRAMMER, P/N 10-2477 (BOSCH FMR-DACT-KEYPAD)

This DACT Programmer (See Exhibit 3-12) is necessary for configuring the 10-2528 and 10-2476 dialers referenced above.

Refer to BOSCH document FPT-DACT "Operation & Installation Guide" for more information.

Exhibit 3-12: DACT Programmer

3.4.2 SUPPLEMENTAL POWER SUPPLY (SPS), P/N 10-2474-P

The Supplemental Power Supply (See Exhibit 3-13) can be added to a base Cheetah Xi 1016 system to double the power capacity. It includes a power supply circuit board and secondary transformer (-1 for 120VAC primary; -2 for 240VAC primary), which adds 1.5A external standby power and 6A alarm power to the system. This increases the total system power to 3A standby / 12A alarm total. The SPS interfaces to P16 on the Cheetah Xi controller behind the LCD using the four standoffs and hardware supplied with the SPS.

Refer to Fike document 06-340, for further more information.

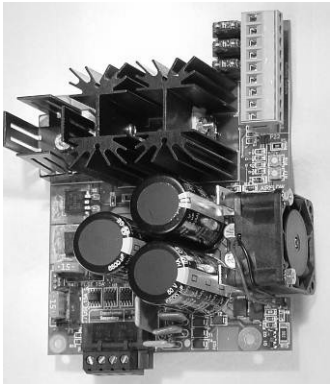


Exhibit 3-13: SPS

3.4.3 SUPPLEMENTAL LOOP MODULE (SLM), P/N 10-2473

The Supplemental Loop Module (See Exhibit 3-14) can be added to a base Cheetah Xi 1016 system to double the addressable loop capacity from 508 devices to 1016. Loop specifications and wiring for P31 and P32 are same as P8 and P9 from the main controller. It interfaces to P15 on the Cheetah Xi controller using four standoffs supplied with the SLM.

Refer to Fike document 06-339, for further more information.

Note: The SLM firmware version must match the main controller firmware version. Each module has a sticker that identifies the version. The controller's firmware version can be checked electronically through the main control panel Diagnostics Menu.

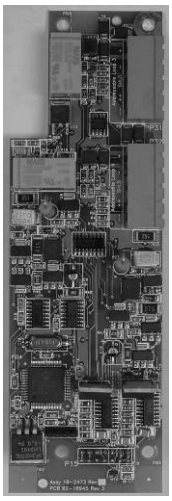


Exhibit 3-14: SLM

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

The CRM4 Relay Module (See Exhibit 3-15) is an optional module that can be added to the Cheetah Xi controller to provide four additional, independently programmable relays. The Cheetah Xi controller supports up to two CRM4 modules (if other options are not used) at main controller P12 and P13. Each Relay may be wired across Normally Open or Normally Closed contacts.

Refer to Fike document 06-345, for more information.

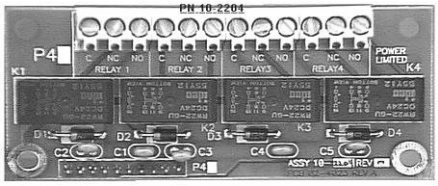


Exhibit 3-15: CRM4

3.4.5 REVERSE POLARITY MODULE (RPM), P/N 10-2254

The Reverse Polarity Module (See Exhibit 3-16) provides two individual non-supervised, reverse polarity contacts intended for connection to a polarity reversal circuit of a remote station receiving unit having compatible ratings. It interfaces to P12 on the Cheetah Xi controller using four standoffs supplied with the RPM.

Refer to Fike document 06-156, for more information.

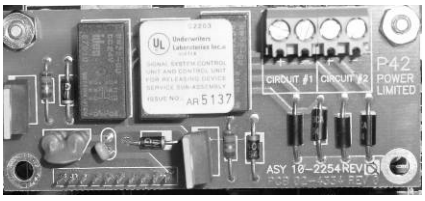


Exhibit 3-16: CRPM

3.4.6 RS485 NETWORK MODULE, P/N 10-2482

The RS485 Network Module (See Exhibit 3-17) provides an intelligent interface between other networked devices. The network is designed to operate with 128 network nodes (panels) which operate in a peer-to-peer communication. The communication protocol is designed using RS485 communication with repeaters in each network module. It interfaces to P20 on the Cheetah Xi controller using four standoffs supplied with the Network Module.

Refer to Fike document 06-349, for more information.

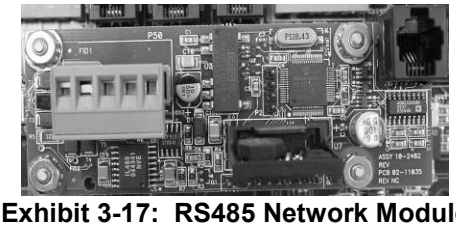


Exhibit 3-17: RS485 Network Module

3.4.7 FIBER OPTIC NETWORK MODULE, P/N 10-2624

The Fiber Optic Network Module (See Exhibit 3-18) provides intelligent interface between other network devices. The network is designed to operate with 128 network nodes (panels) which operate in a peer-to-peer communication. The communication protocol is designed using fiber communication with repeaters in each fiber optic network module. It interfaces to P20 using four standoffs supplied with the Fiber Optic Network Module.

Refer to Fike document 06-387, for more information.

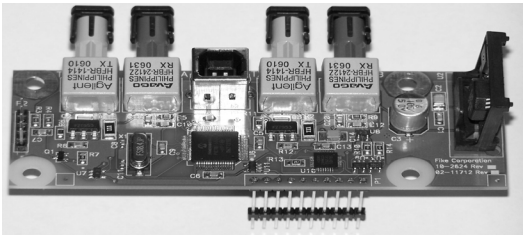


Exhibit 3-18: Fiber Optic Network Module

3.5 PERIHERAL BUS DEVICES

Several optional components can be installed on the Cheetah Xi controller's RS485 peripheral bus (31 devices maximum) to provide remote annunciation and control of system events, and to expand the systems operational capabilities. A brief description of each component and its functionality is provided in this section for reference purposes. For a complete description of each module's functionality, installation and wiring, refer to the referenced installation sheet/manual.

3.5.1 FOURTEEN BUTTON REMOTE DISPLAY UNIT, P/N 10-2646 [NOT FM APPROVED]

The Fourteen Button Remote Display Unit (See Exhibit 3-19) provides a 4x20 character LCD that mimics the host control panel's display. This allows system status information to be displayed at a remote location. The unit is equipped with eight programmable buttons that can be used to perform system control functions such as Reset, Silence, Acknowledge, etc. Switch functions are protected by the unit's integral security access key. In addition, the RDU is equipped with an internal piezo and five status LEDs that provide instant audible and visual notification of system status changes.

Exhibit 3-19: Fourteen Button Remote Display Unit

Refer to Fike document 06-610, for more information.

Note: This unit can only be used on systems with panel firmware V3.0 or higher.

3.5.2 TEN BUTTON REMOTE DISPLAY UNIT, P/N 10-2631 [NOT FM APPROVED]

The Ten Button Remote Display Unit (See Exhibit 3-20) provides a 4x20 character LCD that mimics the host control panel's display. This allows system status information to be displayed at a remote location. The unit is equipped with four control switches that allow initiation of system Drill, Acknowledge, Silence and Reset functions from the unit. Switch functions are protected by the unit's integral security access key. In addition, the RDU is equipped with an internal piezo and five status LEDs that provide instant audible and visual notification of system status changes.

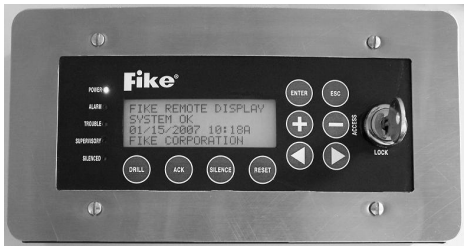


Exhibit 3-20: Ten Button Remote Display Unit

Refer to Fike document 06-610, for more information.

Note: This unit can only be used on systems with panel firmware V3.0 or higher.

3.5.3 TWO BUTTON REMOTE DISPLAY UNIT, P/N 10-2630 [NOT FM APPROVED]

The Two Button Remote Display Unit (See Exhibit 3-21) provides a 4x20 character LCD that mimics the host control panel's display. This allows system status information to be displayed at a remote location. The unit is equipped with an internal piezo and five status LEDs that provide instant audible and visual notification of system status changes.

Refer to Fike document 06-610, for more information.

Note: This unit can only be used on systems with panel firmware V3.0 or higher.

Exhibit 3-21: Two Button Remote Display Unit

3.5.4 ETHERNET MODULE, P/N 10-2627 ETHERNET MODULE W/ ENCLOSURE, P/N 10-074

The Ethernet Module (See Exhibit 3-22) provides a means to connect the associated control panel to the Ethernet (LAN/WAN). This connection allows the associated control panel to send its history events to a remote monitoring panel that can be located either on or off the protected premises.

The module can be mounted inside the Cheetah Xi enclosure or it can be mounted remotely by ordering the custom mounting enclosure.

Refer to Fike document 06-388, for more information.

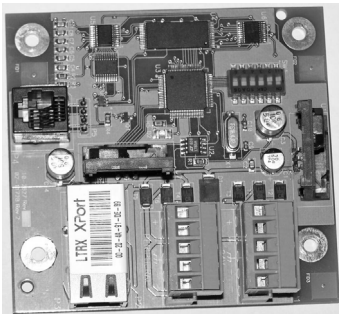


Exhibit 3-22: Ethernet Module

3.5.5 MULTI-INTERFACE MODULE, P/N 10-2583 MULTI-INTERFACE MODULE W/ ENCLOSURE, P/N 10-069

The Multi-Interface Module (See Exhibit 3-23) provides an interface point that allows connection of the following ancillary devices to the host control panel:

1. Cheetah Classic panel – this interface allows the MIM to act as a network card on the Cheetah Classic network (feature not available in V7.00 firmware and higher).
2. Parallel Printer – this interface allows a parallel printer that is listed for "Fire Protective Signaling Use" to be connected to the host control panel.
3. Serial Printer – this interface allows a Keltron 90-series printer to be connected to the host control panel.
4. PC Graphic – this interface allows a PC Graphic workstation to be connected to the host control panel.

The module can be mounted inside the Cheetah Xi enclosure or it can be mounted remotely by ordering the custom mounting enclosure.

Refer to Fike document 06-367, for more information.

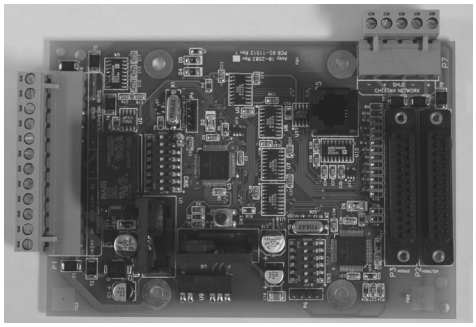


Exhibit 3-23: Multi-Interface Module (MIM)

3.5.6 INTELLIGENT GRAPHIC ANNUNCIATOR [NOT FM APPROVED]

The LED Graphic (See Exhibit 3-24) is a custom made graphic display that provides a specific building layout pictorial with the actual fire alarm devices indicated with a color status LED (red, green, yellow or orange). When an event occurs, the intelligent data will be transferred via the RS485 output to the graphic and the specific device or zone LED will light as programmed.

Refer to Fike document 06-231, for more information.

Exhibit 3-24: Graphic Annunciator

3.5.7 TWENTY ZONE REMOTE ANNUNCIATOR, P/N 10-2667 [NOT FM APPROVED]

The Twenty Zone Remote Annunciator (See Exhibit 3-25) is a tabular based display equipped with 40 LEDs (twenty red and twenty yellow). Each LED can be individually configured to annunciate the status of the host control panel or an individual zone/state event.

Refer to Fike document 06-453, for more information.

Exhibit 3-25: Twenty Zone Remote Annunciator

3.5.8 RELAY CONTROL ASSEMBLY, P/N 10-2777 [NOT FM APPROVED]

The Relay Control Assembly (See Exhibit 3-26) provides a mounting location for up to six (6) CRM4 (P/N 10-2204) and/or HPM4 (P/N 10-2770) relay modules. This configuration allows up to twenty-four (24) programmable relays to be added to the system to provide system status indication, control of electrical loads, and general purpose switching.

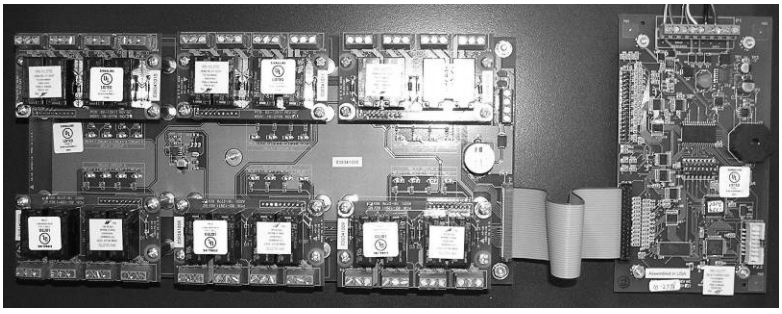


Exhibit 3-26: Relay Control Assembly

The assembly includes the Relay Control Card (P/N 10-2778), Bus Card (P/N 10-2769), and Interface Cable (P/N 10-2784). The CRM4 and HPM4 relay modules must be ordered separately.

Refer to Fike document 06-580 and 06-443, for more information.

Note: The HPM4 relay card (See Exhibit 3-27) is compatible with the Relay Control Assembly only. Do NOT mount the HPM4 relay card to the Cheetah Xi controller.

Exhibit 3-27: HPM4 Relay Card

3.5.9 RELAY CARD, P/N 10-2785 [NOT FM APPROVED]

The Relay Card (See Exhibit 3-28) provides twelve (12) programmable relays integrated into a single card. When added to the system, the relays can be used to provide system status indication, control of electrical loads, and general purpose switching.

Refer to Fike document 06-586, for more information.

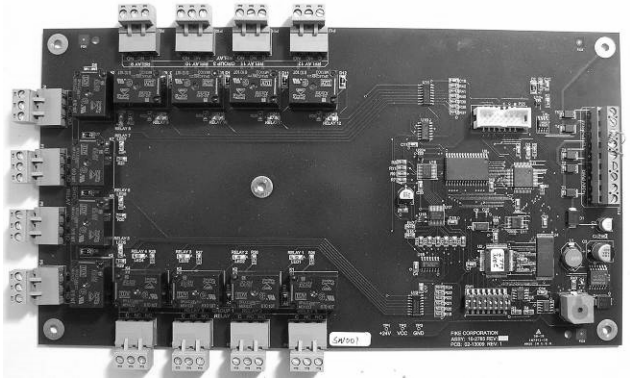


Exhibit 3-28: Relay Card

3.5.10 CLASS A PERIPHERAL BUS CARD, P/N 10-2792

The Class A Peripheral Bus Card (See Exhibit 3-29) provides a means of wiring the panel's RS485 peripheral bus and 24 VDC power output to the connected peripheral devices in a Class A (Style 6) format. The card can be mounted within the Cheetah Xi enclosure or ordered as part of an assembly that allows the card to be external to the Cheetah Xi enclosure.

Refer to Fike document 06-606 and 06-609, for more information.

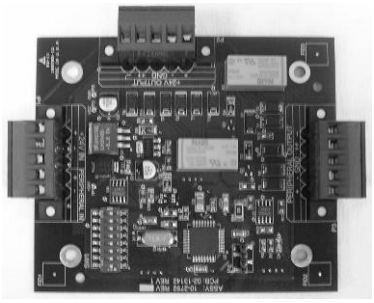


Exhibit 3-29: Class A Peripheral Bus Card

3.6 INTELLIGENT DETECTORS

The Cheetah Xi system uses intelligent detectors that not only include all necessary processing for decision making but also include the control logic for the system, greatly reducing the importance of the central controller. The operating parameters are downloaded to the devices during system configuration into nonvolatile memory.

The intelligent, addressable detectors are connected to and receive their operating power (15-30VDC) from the host control panel via the panel's signaling line circuits (SLC). Each SLC loop is capable of supporting up to 254 addressable devices in any combination of detectors and modules. Each addressable device is assigned a unique SLC address that allows it to be identified not only by the system controller for device supervision, but by other SLC devices as well to facilitate peer to peer system operation. A brief description of each intelligent detector and its features is provided in this section for reference purposes.

Refer to Fike document P/N 06-356-2, "Cheetah Xi Operations Manual" for details of detector operation and available programming features.

Refer to installation and maintenance instructions supplied with each detector for more information.

Note: Detector electronics are rated 32° - 120°F (0° - 49°C), 10- 93% relative humidity, unless otherwise noted.

3.6.1 PHOTOELECTRIC SMOKE DETECTOR, P/N 63-1052 PHOTOELECTRIC SMOKE DETECTOR WITH ISOLATOR, P/N 63-1058

The Photoelectric Smoke Detector (See Exhibit 3-30) is an intelligent, spot-type smoke detector that utilizes the light obscuration principle to detect smoke. The detector includes a tri-color LED for instant indication of device status. The isolator version provides complete short circuit isolation for NFPA Class X (Class A/Style 7) wiring when used with an isolator base.

Exhibit 3-30: Photo Detector

The following modes of operation for the detector are configurable to suit your specific project requirements:

Alarm Verification	Drift Compensation
PreAlarm 1	Walktest
PreAlarm 2	Device Summing
Acclimate	Remote Annunciator
Day/Night Sensitivity	

3.6.2 IONIZATION SMOKE DETECTOR, P/N 67-033 IONIZATION DETECTOR WITH ISOLATOR, P/N 67-034

The Ionization Smoke Detector (See Exhibit 3-31) is an intelligent, spot-type smoke detector that utilizes the ionization principle to detect smoke. The detector includes a tri-color LED for instant indication of device status. The isolator version provides complete short circuit isolation for NFPA Class X (Class A/Style 7) wiring when used with an isolator base.

Exhibit 3-31: Ion Detector

The following modes of operation for the detector are configurable to suit your specific project requirements:

Alarm Verification	Drift Compensation
PreAlarm 1	Walktest
PreAlarm 2	Device Summing
Acclimate	Remote Annunciator
Day/Night Sensitivity	Smolder

3.6.3 PHOTO/HEAT COMBINATION DETECTOR, P/N 63-1053 PHOTO/HEAT DETECTOR WITH ISOLATOR, P/N 63-1059

The Photo/Heat Detector (See Exhibit 3-32) is an intelligent, spot-type smoke detector that utilizes the light obscuration principle to detect smoke. In addition to the photoelectric sensing chamber, the detector is equipped with a thermistor based, 135°F heat detection circuit. The detector includes a tri-color LED for instant indication of device status. The isolator version provides complete short circuit isolation for NFPA Class X (Class A/Style 7) wiring when used with an isolator base.

Exhibit 3-32: Photo/Heat Detector

The following modes of operation for the detector are configurable to suit your specific project requirements:

Alarm Verification	Drift Compensation
PreAlarm 1	Walktest
PreAlarm 2	
Acclimate	Remote Annunciator
Day/Night Sensitivity	Flame Enhance

Note: Photo element of detector can be programmed as Supervisory and Heat element for Alarm.

3.6.4 HEAT DETECTOR, P/N 60-1039 HEAT DETECTOR WITH ISOLATOR, P/N 60-1040

The Heat Detector (See Exhibit 3-33) is a spot-type detector, designed to be programmable for a set-point range of 135-174°F (57.2-78.9°C) for ordinary detection or 175-190°F (79.4-87.8°C) for intermediate detection. Detectors in the ordinary range may be programmed for either fixed temperature or 15°F (9.4°C) rate of rise operation. Detectors in the intermediate range are fixed temperature only. The detection set-point is software programmable in five degree increments from 135-190°F (57.2-87.8°C). The detector includes a tri-color LED for instant indication of device status. The isolator version provides complete short circuit isolation for NFPA Class X (Class A/Style 7) wiring when used with an isolator base.

Exhibit 3-33: Heat Detector

The following modes of operation for the detector are configurable to suit your specific project requirements:

Alarm Verification	Walktest
PreAlarm 1	Remote Annunciator
PreAlarm 2	Fixed Temp/Rate-of-Rise

3.6.5 PHOTOELECTRIC DUCT DETECTOR, P/N 63-1057 PHOTOELECTRIC SMOKE DETECTOR WITH ISOLATOR, P/N 63-1062

Exhibit 3-34: Photo Duct Detector

The Photoelectric Duct Detector (See Exhibit 3-34) is an intelligent, spot-type smoke detector that utilizes the light obscuration principle to detect smoke. The detector is designed for use inside the duct detector housing only and should not be used for open area applications. The detector includes a tri-color LED for instant indication of device status. The isolator version provides complete short circuit isolation for NFPA Class X (Class A/Style 7) wiring when used with an isolator base.

The following modes of operation for the detector are configurable to suit your specific project requirements:

Alarm Verification	Drift Compensation
PreAlarm 1	Walktest
PreAlarm 2	Device Summing
Acclimate	Remote Annunciator
Day/Night Sensitivity	

Note: Photo Duct Detector can be programmed as a Supervisory input as required by some Local Authority Having Jurisdictions (AHJ).

3.6.5.1 DUCT DETECTOR HOUSING, P/N 63-1158

Exhibit 3-35: Duct Detector Housing

The Duct housing (See Exhibit 3-35) is equipped with an integral base for mounting either the P/N 63-1057 or P/N 63-1062 duct detectors. The housing provides a remote alarm output for use with auxiliary devices, such as the remote LED annunciator and remote test stations. Unlike similar DUCT detectors, separate 24VDC is NOT required.

Five different lengths of sampling tube are available for penetrating into the DUCT:

P/N 63-1159 = up to 1ft. (0.3m) ducts
P/N 63-1160 = 1ft. – 2ft. (0.3m – 0.6m) ducts
P/N 63-1161 = 2ft. – 4ft. (0.6m – 1.2m) ducts
P/N 63-1162 = 4ft. - 8ft. (1.2m – 2.4m) ducts
P/N 63-1163 = 8ft. – 12ft. (2.4m – 3.7m) ducts

Important Note: Duct Detector and Housing must ordered separately and both are required.

Refer to Section 3.8 for accessory devices that can be used in conjunction with the duct detector housing to provide remote testing and visual notification options.

3.6.6 FAAST ASPIRATING SMOKE DETECTORS

FAAST aspirating smoke detectors (See Exhibit 3-36) use a pipe network with a series of sampling holes to continuously draw air from the controlled environment to the detection chamber to monitor the environment for smoke particulate. FAAST's highly specialized detection chamber uses Dual Vision technology to detect extremely low concentrations of smoke while maintaining a high level of immunity to non-smoke particulate – enabling Very Early Warning type smoke detection in harsh and difficult environments.

The detection chamber, which utilizes a blue LED and an infrared laser to analyze the air sample, has a configurable range of 0.00029% - 6.25% Obs/ft (0.00095% - 20.5% Obs/m) and has been specifically designed to provide high sensitivity and stability. This sensitivity range can meet and exceed the requirements of Very Early Warning smoke detection, making FAAST highly customizable to meet site-specific requirements.

Exhibit 3-36: FAAST Detectors

FAAST provides multiple levels of alarm, allowing for the implementation of strategic response plans and ample time to address a smoke event before it escalates into an actual fire and causes damage and downtime.

FAAST connects directly to the Cheetah Xi panel's signaling line circuit without the need for any additional hardware or software. This allows the detector to intelligently communicate with the panel just like any other detection device on the loop. Detector conditions are displayed at the FAAST unit and at the Cheetah Xi control panel to provide clear indication of the system status, particulate levels, alarm levels, air flow and faults.

	68-509 FAAST XS	**68-140 FAAST XM**	**68-302 FAAST XT**
Coverage Area	5,000 sq. ft. (464 sq. m)	8,000 sq. ft. (743 sq. m)	28,800 sq. ft. (2,676 sq. m)
Pipe Runs	1	1	4
Max. Single Pipe Run	180 ft. (54.8 m)	262 ft. (79.8 m)	400 ft. (121.9 m)
Total Pipe Run	300 ft. (91.5 m)	450 ft. (137 m)	1,050 ft. (320 m)
Sensitivity Range	0.00029% obs/ft. to 6.25% obs/ft (0.00095% obs/m to 20.5% obs/m)		
Air Movement	0 – 4000 ft/min. (0 – 1,219 m/min.)		
Relays (Form C)	5	8	8

Refer to the product documentation supplied with the FAAST detector for installation, operation and maintenance instructions.

3.7 DETECTOR BASES

Several detector bases are available to allow connection of the addressable detectors to the panel's signaling line circuits (SLC). Each base provides a twist-lock feature for securing the detector to the base. Each base also provides a connection point for an optional Remote LED (P/N 02-3868), as described in Section 3.8.

A brief description of each detector base and its features is provided in this section for reference purposes.

3.7.1 FOUR-INCH BASE, P/N 63-1055 (System Sensor EB) BASE W/ ISOLATOR, P/N 63-1061 (System Sensor EBI)

The Four-Inch Base (See Exhibit 3-37) can be used with any of the Cheetah Xi detectors. It mounts directly to 3 1/2 inch octagon boxes and 4 inch square boxes with plaster ring, and European boxes with 50, 60, and 70 mm screw spacing. The isolator version provides complete short circuit isolation for NFPA Class X (Class A/Style 7) wiring when used with an isolator detector.

Exhibit 3-37: 4-inch Base

3.7.2 SIX-INCH BASE, P/N 63-1054 (System Sensor EBF) BASE WITH ISOLATOR, P/N 63-1060 (System Sensor EBFI)

The Six-Inch Base (See Exhibit 3-38) can be used with any of the Cheetah Xi detectors. It mounts directly to 3 1/2 inch and 4 inch octagon boxes (with or without plaster rings), and single gang boxes. The isolator version provides complete short circuit isolation for NFPA Class X (Class A/Style 7) wiring when used with an isolator detector.

Exhibit 3-38: 6-inch Base

3.7.3 SOUNDER BASE, P/N 63-1064 (System Sensor EBS)

The sounder base (See Exhibit 3-39) provides the ability to notify occupants near the detection device(s). The base includes a local 85 db sounder that can be activated upon the specific detector alarm. It is designed to follow the remote LED programming for the detector attached to the base and can be configured for 8 different sounds and/or priorities. This base requires separate 24VDC continuous auxiliary power from the main control panel.

Exhibit 3-39: Sounder Base

3.7.4 RELAY BASE, 6", P/N 63-1063 (System Sensor EBR)

The relay base (See Exhibit 3-40) provides a local dry contact relay (Form C) output that can be activated for any or multiple states or zone activation. If default programming is used, the relay will follow the remote LED programming for the detector. This base does NOT require separate 24VDC auxiliary power from the main control panel. It obtains its necessary power from the SLC.

Exhibit 3-40: Relay Base

3.8 REMOTE TESTING AND NOTIFICATION ACCESSORIES

The following accessories add functionality to the Cheetah Xi detection system by allowing quick, convenient inspections at eye level and effective audible and visual notification options.

3.8.1 REMOTE ANNUNCIATOR, P/N 02-3868 (System Sensor RA100Z)

The remote annunciator (See Exhibit 3-41) can be used with any of the Cheetah Xi detector bases, including the duct detector housing. It is fully programmable from the detector head and can light different flashes for different devices/states with up to 8 different priority rows. It mounts directly to single gang electrical box with a minimum depth of 2.5 inches or directly to a wall or ceiling. The annunciator's red LED can provide visual indication of an alarm condition.

Exhibit 3-41: Remote Annunciator

3.8.2 REMOTE TEST STATION, P/N 02-3869 (System Sensor RTS151)

The remote test station (See Exhibit 3-42) is designed to enable testing of remotely mounted duct smoke detectors from a convenient location. It mounts directly to single gang electrical box with a minimum depth of 2.5 inches or directly to a wall or ceiling. The annunciator is equipped with a red LED that provides visual indication of an alarm condition and a magnetic test function that allows remote testing of the connected detector.

Special programming is required on the associated DUCT detector when using this remote test station. See programming manual.

Exhibit 3-42: Remote Test Station

3.8.3 REMOTE TEST STATION WITH KEY, P/N 02-4998 (System Sensor RTS151KEY)

The remote test station with key (See Exhibit 3-43) is designed to enable testing of remotely mounted duct smoke detectors from a convenient location. It mounts directly to single gang electrical box with a minimum depth of 2.5 inches or directly to a wall or ceiling. The annunciator is equipped with a red LED that provides visual indication of an alarm condition and a keyed test function that allows remote testing of the connected detector.

Special programming is required on the associated DUCT detector when using this remote test station. See programming manual.

Exhibit 3-43: Remote Test Station with Key

3.9 ADDRESSABLE MODULES

The Cheetah Xi system uses intelligent input and output modules to provide an interface between the control panel and conventional notification and initiating devices. The operating parameters for each module are downloaded to the device during system configuration into nonvolatile memory. When an input device (detector or input module) determines that action should be taken, it transmits a message over the panel's SLC loops. Output devices receive this message and use their downloaded parameters to determine if they should take action. Each module is provided with a tricolor LED to indicate instant device status (green = normal; yellow=trouble; red = active).

The modules are connected to and receive their operating power (15-30VDC) from the host control panel via the panel's signaling line circuits (SLC). Each SLC loop is capable of supporting up to 254 addressable devices in any combination of detectors and modules. Each addressable device is assigned a unique SLC address that allows it to be identified not only by the system controller for device supervision, but by other SLC devices as well to facilitate peer to peer system operation. A brief description of each addressable module and its features is provided in this section for reference purposes.

Refer to Fike document 06-356-2, "Cheetah Xi Operations Manual" for details of module operation and available programming features.

Refer to installation and maintenance instructions supplied with each module for more information.

Note: Module electronics are rated 32° - 120°F (0° - 49°C), 10- 93% relative humidity, unless otherwise noted.

3.9.1 MINI MONITOR MODULE, P/N 55-045
MINI MONITOR MODULE WITH ISOLATOR, P/N 55-050

The Mini Monitor Module (See Exhibit 3-44) can be used to monitor normally open or normally closed contacts of conventional initiating devices. It is designed for mounting in a small junction box directly behind the monitored device. This module will monitor a Class B (Style B) wired input device only using the 39K ohm end of line resistor. The isolator version provides complete short circuit isolation for NFPA Class X (Class A/Style 7) wiring.

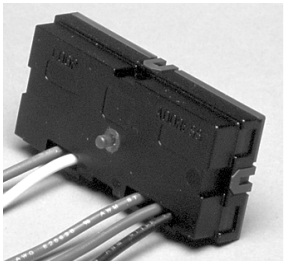


Exhibit 3-44: Mini Monitor Module

3.9.2 MONITOR MODULE, P/N 55-041
MONITOR MODULE WITH ISOLATOR, P/N 55-046

The Monitor Module (See Exhibit 3-45) is used to monitor normally open or normally closed contacts of conventional initiating devices wired either Class B (Style B) or Class A (Style D). Class B wiring requires the use of a 39K ohm end of line resistor. The isolator version provides complete short circuit isolation for NFPA Class X (Class A/Style 7) wiring. A module cover plate (not shown) is included with the module.

Exhibit 3-45: Monitor Module

3.9.3 ADDRESSABLE PULL STATION, P/N 20-1063
ADDRESSABLE PULL STATION WITH ISOLATOR, P/N 20-1064

The Addressable Pull Station (See Exhibit 3-46) is a non-coded, dual-action manual pull station. A Mini Monitor Module is housed inside the pull station to provide an alarm initiating input to the control panel. The isolator version provides complete short circuit isolation for NFPA Class X (Class A/Style 7) wiring.

Exhibit 3-46: Pull Station

3.9.4 ADDRESSABLE AGENT RELEASE PULL STATION, P/N 20-1343

The Addressable Agent Release Pull Station (See Exhibit 3-47) is a non-coded, dual-action manual release pull station. A Mini Monitor Module is housed inside the pull station to provide an alarm initiating input to the control panel. The pull station provides a manual means of discharging an automatic fire extinguishing system.

Note: No isolator version of this pull station is available.

Exhibit 3-47: Agent Release Pull Station

3.9.5 SUPERVISED CONTROL MODULE, P/N 55-042 SUPERVISED CONTROL MODULE WITH ISOLATOR, P/N 55-047

The Supervised Control Module (See Exhibit 3-48) is used to switch an external power supply or audio amplifier to notification appliances. The module monitors the external power input for loss of power and signals the Cheetah Xi panel accordingly. The module includes a tri-color LED for instant indication of device status. The module is capable of providing an optional pulsing output to signal different states, when interfaced with the Cheetah Xi addressable loop. The isolator version provides complete short circuit isolation for NFPA Class X (Class A/Style 7) wiring. A module cover plate (not shown) is included with the module.

In addition to interfacing with notification appliances, the SCM can also be used to operate either of the following interfaces:

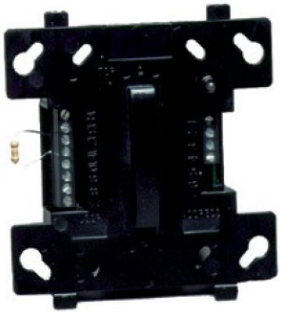


Exhibit 3-48: Supervised Control Module

3.9.5.1 SOLENOID PROTECTION ASSEMBLY, P/N 10-2360

The SCM can be connected to a single sprinkler solenoid rated up to 2 amps maximum at 24VDC. The Solenoid Protection Assembly (See Exhibit 3-49) **must** be used when connecting a solenoid to the SCM. Refer to Fike document 06-186 for compatible sprinkler solenoids (Factory Mutual Approved Groups A-G).

Refer to Fike document 06-344, for more information.

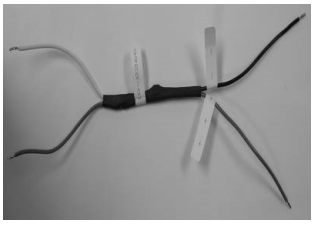


Exhibit 3-49: Solenoid Protection Assembly

3.9.5.2 MASTERBOX INTERFACE, P/N 10-2413

The Masterbox Interface (See Exhibit 3-50) provides the Cheetah Xi control panel with the ability to activate a Local Energy Type Auxiliary Fire Alarm System (as noted by NFPA 72). The Masterbox Interface **must** be used in conjunction with a Supervised Control Module (P/N 55-042).

Refer to Fike document 06-229, for more information.

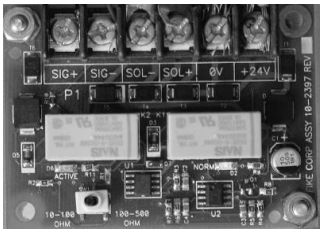


Exhibit 3-50: Masterbox Interface

3.9.6 RELAY MODULE, P/N 55-043
RELAY MODULE WITH ISOLATOR, P/N 55-048

The Relay Module (See Exhibit 3-51) provides two Form C dry contact relays configurable for single operation via the intelligent addressable loop. It contains a wide range of operating modes including multi-zone operation of up to 4 different states and multi-state programming. Optional feedback or independent contact closure input available for use on non-critical input such as monitoring the relay closure or closure from the device that it is monitoring. The isolator version provides complete short circuit isolation for NFPA Class X (Class A/Style 7) wiring. A module cover plate (not shown) is included with module.

Exhibit 3-51: Relay Module

3.9.7 RELEASING CONTROL MODULE, P/N 55-052
RELEASING CONTROL MODULE WITH ISOLATOR, P/N 55-053

The Releasing Control Module (See Exhibit 3-52) provides an interface between the suppression system solenoid, agent release module (ARM), or impulse releasing module (IRM) and the addressable loop. The module requires 24VDC continuous output power from the panel to power the selected releasing device(s). The module provides two different output connections (solenoid or release module) of which ONLY ONE can be used per module.

It contains a wide range of operating modes including multi-zone operation of up to 4 different states and multi-state programming. The isolator version provides complete short circuit isolation for NFPA Class X (Class A/Style 7) wiring. A module cover plate (not shown) is included with module.

Refer to Fike document 06-106, “Agent Release Module (ARM) Manual” and 06-552, “Impulse Release Module (IRM) Manual” for proper connections to ARM(s) or IRM(s).

Note: ARM’s and IRMs may be intermixed on the same releasing circuit.

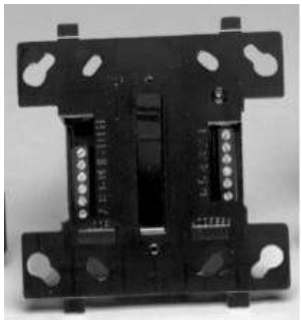


Exhibit 3-52: Releasing Module

3.9.7.1 SOLENOID PROTECTION ASSEMBLY, P/N 10-2360

The RCM can be connected to a single releasing solenoid rated up to 2 amps maximum at 24VDC. The Solenoid Protection Assembly (See Exhibit 3-53) **must** be used when connecting a solenoid to the RCM. Refer to Fike document 06-186 for compatible sprinkler solenoids (Factory Mutual Approved Groups A-G).

Refer to Fike document 06-344, for more information.

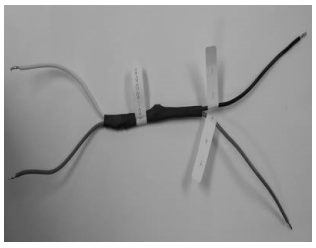


Exhibit 3-53: Solenoid Protection Assembly

3.10 VESDA HIGH LEVEL INTERFACE

The VESDA HLI (See Exhibit 3-54) is a custom device that provides an integrated interface between the Cheetah Xi panel and any VESDA detector(s) connected to the VESDA net, allowing bi-directional communication. Communication between the control panel and the HLI is made via the control panel's RS232 peripheral bus. The HLI should be powered via the Cheetah Xi panel's 24VDC continuous auxiliary power.

Exhibit 3-54: VESDA HLI

- Open Protocol HLI, P/N 68-023 (compatible with panel firmware versions 7.01 and older)
- Modbus HLI, P/N 68-517 (compatible with panel firmware versions 7.20 and newer)

Refer to Fike documents 06-158 and 06-823 for more information.

3.11 PROGRAMMING AND CONFIGURATION EQUIPMENT

The items discussed in this section are *not* UL listed; however, one or more of these items must be used to facilitate proper configuration of the Cheetah Xi system.

3.11.1 IR REMOTE TOOL, P/N 55-051

The IR Remote tool (See Exhibit 3-55) is a hand-held remote control that is designed to communicate with the panel and other devices through any selected device on the loop. It can read device information such as type, loop, address and sensitivity. It can also write device information such as loop, address, branch and service date and initiate device test. It features a 16-character liquid crystal display and a 17-button keypad.

Exhibit 3-55: IR Remote Tool

Features of the IR Remote Tool:

- Operates with 2 AA Batteries
- Communicates bi-directionally with any device
- Easily configure devices by setting the loop and address
- Quickly read sensitivity levels
- Easily test photo and ion detectors in the sub-floor, as well as duct detectors
- Immediately record the date serviced
- Instantly perform a remote test of any detector or module, if programmed for Walktest with IR
- Effortlessly complete a walk test as required
- Access and test hard-to-reach detector or module through any device

3.11.2 HAND HELD PROGRAMMER, P/N 10-2648 (NON-LISTED)

The Hand Held Programmer (See Exhibit 3-56) provides the user the ability to **address** the Fike Cheetah Xi addressable devices. The Hand Held Programmer contains the same operating code as the Cheetah Xi and can be used as a training device and/or troubleshooting tool.

Refer to Fike document 06-390, for more information.

Exhibit 3-56: Hand Held Programmer

3.11.3 C-LINX SOFTWARE, P/N 06-327

The C-Linx Software provides a computer interface to the Cheetah Xi controller. It provides the designer the tools to design a system in their office and then load the configuration at the project site. It also provides the ability to retrieve, save and print the configuration and history of events from the control panel as well as perform several diagnostic functions.

Refer to Fike document 06-448, for more information.

3.11.4 INTERFACE CABLE, P/N 10-1874A

The 10-1874A interface cable (See Exhibit 3-576) consists of a RJ11 jack, serial cable, and a RJ11 to DB9 connector (wired Fike specific). It should be used when connecting the C-Linx Software to the Cheetah Xi using a computer with a DB9 serial (com) port.

Exhibit 3-57: DB9-RJ11 Cable

3.11.5 INTERFACE CONVERTER, P/N 02-11139

The 02-11139 interface converter (See Exhibit 3-58) consists of a USB-to-DB9 converter only. This converter is included in the 10-1874B interface cable shown below. It should be used when connecting the C-Linx Software to the Cheetah Xi using a computer with a USB connector instead of a DB9 serial (com) port and would connect to the 10-1874A cable for RJ11 connection to the Cheetah Xi panel.

Exhibit 3-58: USB/DB9 Communication Cable

3.11.6 INTERFACE CABLE, P/N 10-1874B

The 10-1874B interface cable consists of the USB to RS232 (DB9) converter (P/N 02-11139) and also includes the 10-1874A interface cable. It should be used when connecting the C-Linx Software to the Cheetah Xi using a computer with a USB connector instead of a DB9 serial (com) port.

3.11.7 INTERFACE CABLE, P/N 10-2629

The 10-2629 interface cable (See Exhibit 3-59) consists of a USB 2.0 A/B Male-to-Male assembly. It should be used when programming using the C-Linx Software to 50 point panel or Handheld Programmer.

ⓘ **Note:** Requires drivers for proper operation. Drivers can be downloaded from Fike Customer Portal.

Exhibit 3-59: USB Communication Cable

3.12 BATTERIES AND BATTERY ENCLOSURES

Batteries are required for alarm systems for maintaining emergency back-up power. Refer to Appendix A for Battery Calculation form for determining required battery size for system.

3.12.1 BATTERY ASSEMBLIES

P/N 10-2626 – Two 12 AH batteries with wire harness

P/N 10-2190-2 - Two 18 AH batteries with wire harness

P/N 10-2192 – Wire harness for 7.2 AH & 18 AH batteries

P/N 10-2517 - Wire harness with battery EOL (for use if batteries give fault but load test good) (Applicable to PCB Rev B and earlier)

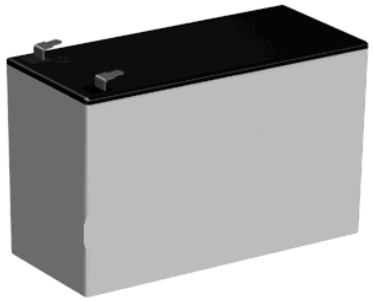


Exhibit 3-60: Sealed Batteries

3.12.2 BATTERIES

Two 12 volt batteries wired in series are required to maintain 24 Vdc backup.

P/N 02-11725	12 AH Battery
P/N 02-2820	18 AH Battery
P/N 02-3468	33 AH Battery
P/N A02-0252	40 AH Battery
P/N 02-4206	75 AH Battery

3.12.3 BATTERY ENCLOSURES

Batteries larger than 18 AH will not fit inside the Cheetah Xi panel enclosure(s); therefore, one of the following battery enclosures must be installed to house the batteries. Interconnecting cables from the battery cabinet to the Cheetah Xi enclosure shall be in installed in conduit.

3.12.3.1 33AH BATTERY ENCLOSURE

(BATTERIES NOT INCLUDED)

P/N 10-2154-c (c = **R**ed or **B**lack)

The 33AH Battery Enclosure (See Exhibit 3-61) is a heavy gauge metal enclosure designed to house two 33AH batteries. Conduit knockouts are provided to provide entry of battery wiring. The box lid is installed onto the back-box using the 4 mounting screws provided.

Refer to Fike document 06-534, for more information.

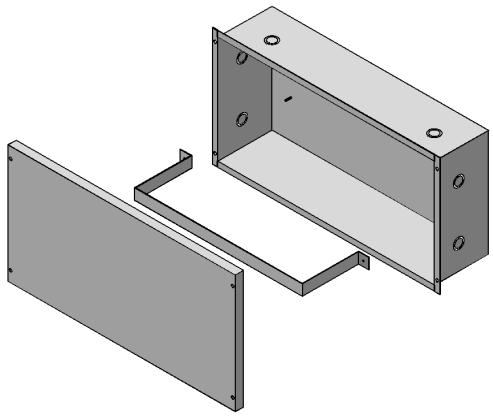


Exhibit 3-61: 33AH Battery Enclosure

3.12.3.2 75AH BATTERY ENCLOSURE

(BATTERIES NOT INCLUDED)

P/N 10-2236-c (c = **R**ed or **B**lack)

The 75AH Enclosure (See Exhibit 3-62) is a heavy gauge metal enclosure designed to house two 75AH batteries. Conduit knockouts are provided to provide entry of battery wiring. The box lid is installed onto the back-box using the 4 mounting screws provided.

Refer to Fike document 06-535, for more information.

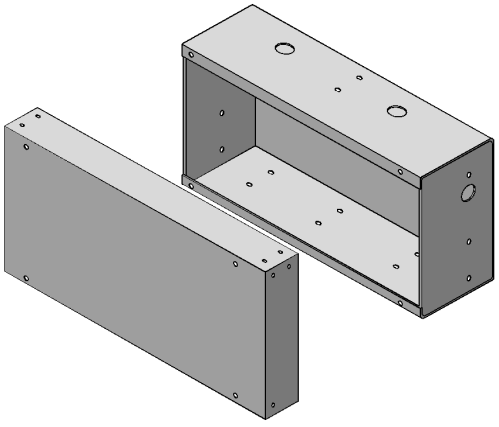


Exhibit 3-62: 75AH Battery Enclosure

4.1 SYSTEM INSTALLATION SEQUENCE

Unless otherwise detailed in this manual, or in other documents relating to this control panel, the technician shall utilize published standards and references such as NFPA 70 National Electrical Code, NFPA 72 National Fire Alarm and Signaling Code, NFPA 2001 Standard for Clean Agent Fire Extinguishing Systems, and others which may be relevant to the local authority having jurisdiction for installation of the system.

This section provides general instructions that should be adhered to when installing the Cheetah Xi system. Refer to the installation instruction sheets supplied with each component for specific installation instructions.

The following checklist is provided to assist the installer during system installation:

Task	Refer to
Select the enclosure mounting location.	Section 4.2
Select the enclosure mounting option (flush or surface).	Section 4.3
Mount the enclosure.	Section 4.4
Wire Selection	Section 4.5
Circuit Class Designations	Section 4.6
Pull field wiring into enclosure.	Section 4.7
Verify the field wiring.	Section 4.8
Install the AC power transformer(s).	Section 4.9
Connect AC power to the transformer(s), ***but do not apply AC power at this time***.	Section 4.10
Install optional circuit modules onto the controller.	Section 4.11
Install the Cheetah Xi controller into the enclosure.	Section 4.12
Connect AC power to the controller.	Section 4.13
Install batteries.	Section 4.14
Apply power to the panel.	Section 4.15
Connect field wiring.	Section 4.16
Power-up controller with field wiring connected.	Section 4.17
Configure the system.	Section 4.18
Conduct acceptance testing.	Section 4.19

4.2 SELECT THE ENCLOSURE MOUNTING LOCATION

The mounting location for the Cheetah Xi system enclosure(s) is very important. Fike recommends that all system enclosures be installed in an area that is readily accessible with sufficient room to allow easy installation and maintenance, and that is capable of maintaining a nominal room temperature of 0°-49°C / 32°-120°F, with a relative humidity of 93 percent. Do NOT install in an environment that exceeds these temperature and humidity ranges.

Additional items to consider when selecting the appropriate mounting location for the enclosure includes: vibration, dust, moisture, electromagnetic interference, and radio frequency interference. These are all types of problems that could adversely effect the successful operation and useful life of the electronic components and should be avoided if possible.

Mount the enclosure at a height that allows easy access to system electronic components for maintenance and service. Allow sufficient clearance around the enclosure for the outer door to swing freely.

4.3 SELECT THE ENCLOSURE MOUNTING OPTION

The system enclosure is designed to be surface or flush mounted. For surface mounting, you will utilize the mounting holes provided in the back of each enclosure to secure it to the wall. For flush mounting, you will need to cut an opening in the wall to fit the back-box dimensions (See Exhibit 4-1) and secure the enclosure in place by utilizing the through holes located on the sides of the box. The enclosure is designed to fit between wall framing members for flush mounting.

Note: The Cheetah Xi enclosure is NOT fire rated; do not install on or in fire rated walls unless steps are taken to maintain the fire rating of the wall.

4.4 MOUNT THE ENCLOSURE

The following general steps shall be used to install the system enclosure:

1. Disconnect the grounding wire from the enclosure door by unscrewing the hex-nut.
2. Remove the enclosure door by unscrewing the two hinge screws.
3. Determine the maximum number of conductors needed from the design and punch out the appropriate conduit knockouts. All field wiring is to be routed into the enclosure via knock-out openings. Conduit knock-outs are provided for two distinct conduit sizes. Removing just the inside hole creates a one-half inch (1/2") opening. Removing the entire opening provides a three-quarter inch (3/4") opening.

   Note: Unless otherwise detailed in this manual or in other documents relating to this control panel, the technician shall utilize published standards and references such as NFPA 70 National Electrical Code, NFPA 72 National Fire Alarm Code, and others, which may be relevant to the Local Authority Having Jurisdiction for selecting the appropriate conductor size and quantity.

   Note: If batteries are to be installed in the enclosure, do not use the conduit knock-outs in the bottom of the enclosure.
4. For surface mounting, mark and pre-drill holes in mounting surface and secure the back-box to the wall using appropriate mounting hardware.
5. For flush mounting, mark and cut an opening in the wall to fit the back-box dimensions (See Exhibit 4-1). Wall must be framed to accommodate the back box dimensions. Secure the enclosure in place by utilizing the through holes located on the sides of the box.
6. Re-install the outer door onto the enclosure.
7. Re-connect the grounding wire to the enclosure door. Check for continuity between door and back-box to complete the installation.

Note: Refer to the installation instructions supplied with the enclosure for further details.

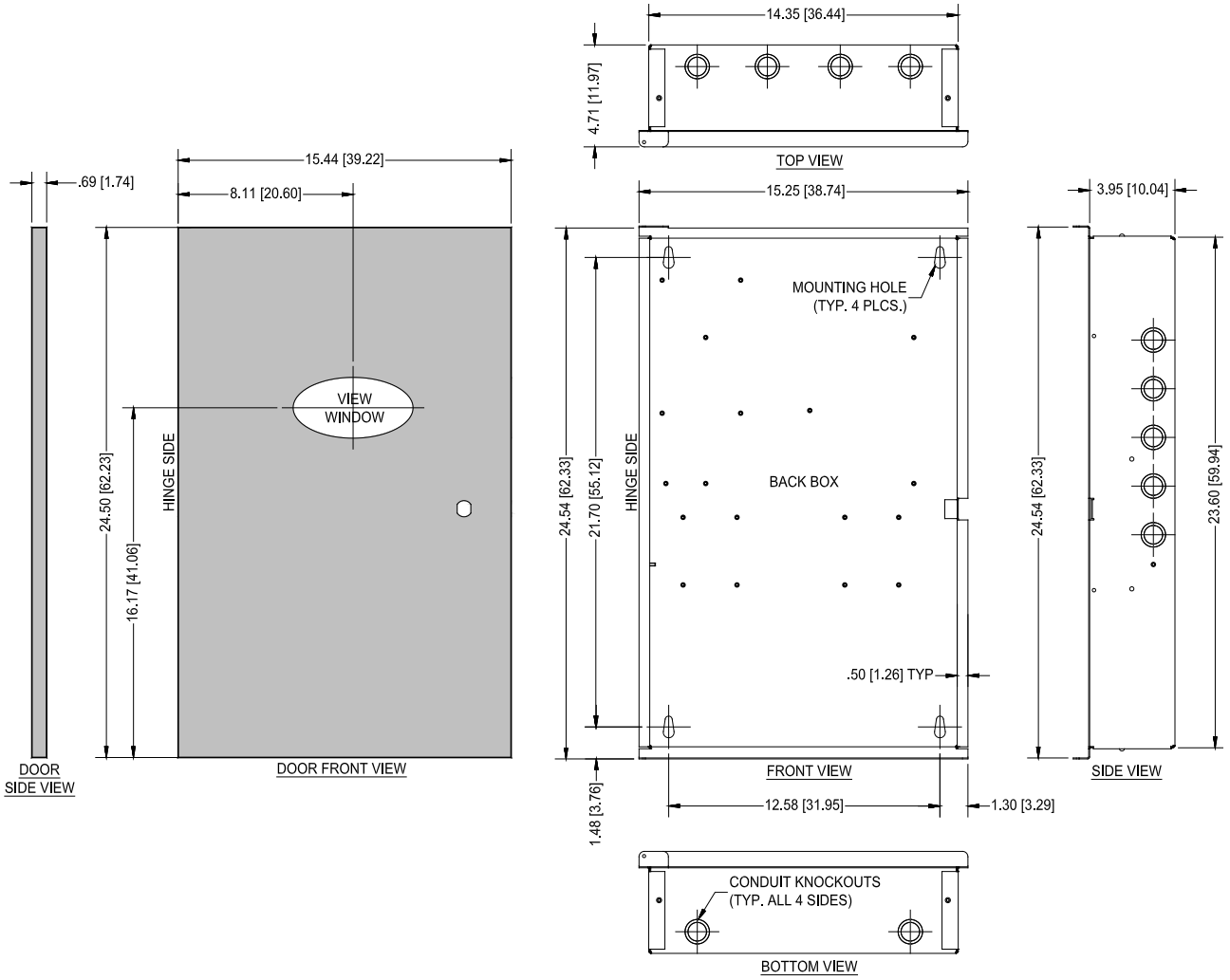


Exhibit 4-1: Cheetah Xi Enclosure Dimensions (inches/cm)

Note: Refer to Fike document 06-426, "Cheetah Xi Enclosure Installation Instructions" for further details.

4.5 WIRE SELECTION

When planning the type of wire to be used, refer to National Electrical Code (NFPA 70), wire manufacturers product specifications and National Fire Alarm and Signaling Code (NFPA 72). The wiring specifications shown in Exhibit 4-2 may be used to estimate the appropriate wire size. Completely review the System Components section for planning the appropriate wiring for each circuit and device.

Size (AWG)	Strands	Diameter		Uncoated Copper		Coated Copper	
		in.	mm	ohm/kFT	ohm/km	ohm/kFT	ohm/km
18	1	0.040	1.02	7.77	25.5	8.08	26.5
18	7	0.046	1.16	7.95	26.1	8.45	27.7
16	1	0.051	1.29	4.89	16.0	5.08	16.7
16	7	0.058	1.46	4.99	16.4	5.29	17.3
14	1	0.064	1.63	3.07	10.1	3.19	10.4
14	7	0.073	1.85	3.14	10.3	3.26	10.7

Exhibit 4-2: Conductor Properties *(excerpted from NFPA 70, Chapter 9, Table 8)*

4.6 CIRCUIT CLASS DESIGNATIONS

The circuits on the Cheetah Xi controller and its field devices can be configured for Class B (two wire) or Class A or X (four wire) operation. Class B wiring does not include a redundant path and the operational capability stops at a single open. Class A wiring includes a redundant path and the operational capability continues past a single open. Class X wiring is the same as Class A wiring, but requires the use of isolator devices in order to provide operational capabilities past a single open or short-circuit. When Class A or Class X wiring is utilized, t-tapping is not permitted and all circuits shall be installed in accordance with the requirements of NFPA 72 to provide adequate separation between outgoing and return conductors.

4.7 PULL FIELD WIRING INTO THE ENCLOSURE

The Cheetah Xi system wiring is classified as either power-limited or non-power-limited per NEC article 760. All power-limited wiring must be separated from all non-power-limited wiring by a minimum distance of 1/4 inch (6 mm) within the system enclosure. The Cheetah Xi power-limited versus non-power-limited circuits are designated as follows:

Power-Limited circuits include:

P2 – Relays (Alarm, Supervisory, Trouble)*
P3 – Computer Interface Connection
P4 – VESDA HLI Interface
P5 – Fike Guard Interface
P6 – RS-485 Peripheral Buss
P7 – Auxiliary Power
P8 & P9 – Signaling Line Circuits (1 & 2)
P10 & P11 – Notification Appliance Circuits (1 & 2)
P12 & P13 - CRM4 relay or Reverse Polarity modules*

Non-power-limited circuits include:

P1 – AC Power Supply and Batter Input
P21 – Supplemental Power Supply AC Power Input

**Connected to power-limited or non-power-limited field wiring, but not both.*

When installing optional components within the Cheetah Xi enclosure, refer to the installation instructions supplied with each component for designation of power-limited versus non-power-limited circuits. Route all field wiring through the appropriate conduit knockouts, then to the appropriate circuit terminals. Provide adequate wire length to allow strain relief.

Note: Where circuit survivability is required, equal protection shall be provided to power supply circuits.

4.8 VERIFY FIELD WIRING

The integrity of the field wiring shall be tested before installing field devices or landing the field wiring to the system controller. With the end of each circuit open, the following tests shall be conducted:

1. Verify absence of ground-fault on any field wiring prior to connecting the circuits. Refer to specifications for acceptable readings.
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 wire resistance with a short across the circuit at a point furthest from circuit start. This is typically across EOL for Class B and at the panel for Class A or Class X.

⚠ Caution

Field devices must not be connected if using a megohmmeter or any means that applies voltages in excess of device ratings to prevent damage to the devices.

⚠ Caution

Do not proceed with the installation of electronic components until the enclosure is completely free of dust and debris.

4.9 INSTALL AC POWER TRANSFORMER

The following general steps shall be used to install the AC power transformer into the back-box:

1. Locate the four threaded press studs provided in the enclosure back-box for mounting the transformer (See Exhibit 4-3).
2. Position the transformer over the press studs making sure that the transformer's H1 and H2 (AC primary input) terminals are facing to the left side of the enclosure. Secure the transformer in place with four 6-32 hex nuts and lock-washers provided with the enclosure.

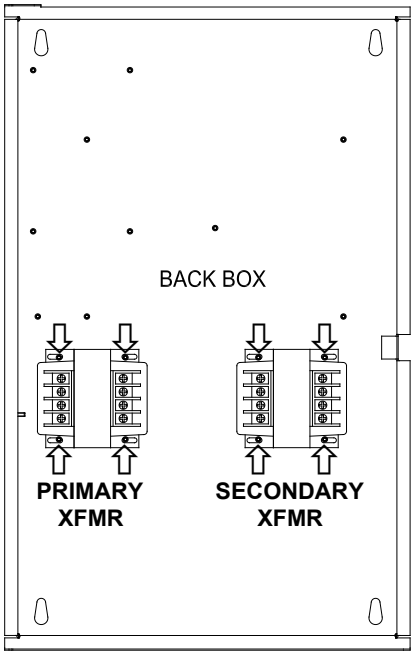


Exhibit 4-3: Transformer Mounting Location

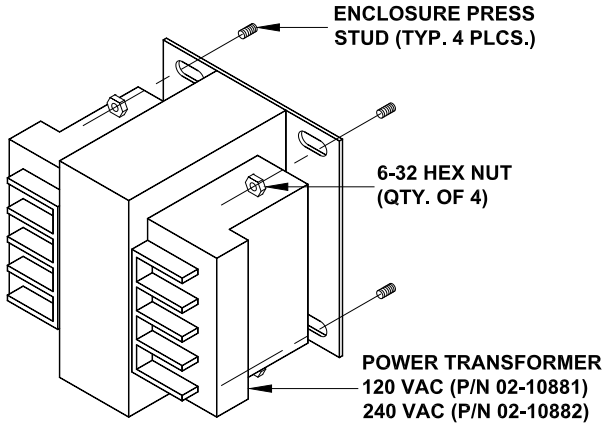


Exhibit 4-4: Transformer Mounting

4.10 CONNECT AC POWER TO THE TRANSFORMER

System AC line power (120 VAC or 240 VAC, 50/60 Hz) 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 ALARM**" circuit. Route the power to the system through the dedicated grounded metallic conduit.

⚠ Caution

Ensure the power supplied is compatible with the transformer assembly (120VAC or 240VAC) prior to applying power.

⚠ Caution

Verify that AC power circuit has been turned off before connecting power wiring to the transformer.

The following general steps shall be used to connect AC power to the transformer:

1. Route the AC hot and neutral wires to the primary transformer, as shown in Exhibit 4-5.
2. Secure Hot and Neutral wires to terminals H1 and H2.

3. If secondary transformer is to be used, route AC Hot and Neutral wires from the primary transformer to H1 and H2 on the secondary transformer as shown in Exhibit 4-6.

> **⚠ Caution**
>
> Never swap transformer Primary (H1 and H2) and Secondary (X1 and X2) by connecting AC feed to secondary terminals. Doing so will cause the transformer to step-up the power resulting in certain damage to the controller.

4. Install the AC ground wire (G) under the transformer onto the mounting stud identified with a grounding sticker. This connection provides lightning and transient protection for the panel and must make a good mechanical connection to the enclosure. Where multiple power transformers are installed in the same enclosure, only one grounding termination shall be made.
5. Tighten the hex nuts to secure the transformer and ground wire in place.
6. Align and lower the plastic terminal cover onto the transformer and snap in place.
7. DO NOT ENERGIZE THE AC POWER SOURCE AT THIS TIME!

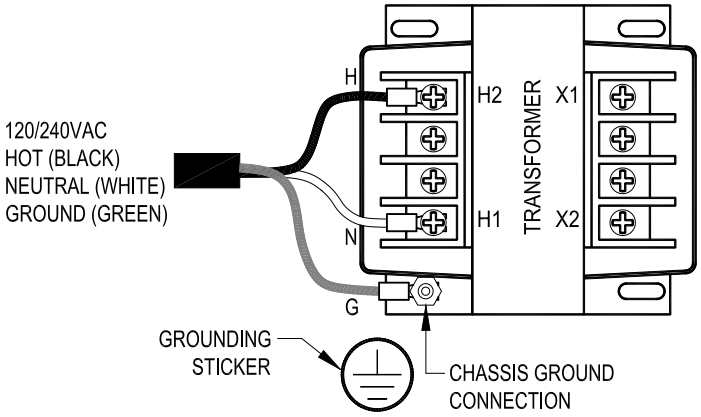


Exhibit 4-5: Connect AC Power to Transformer

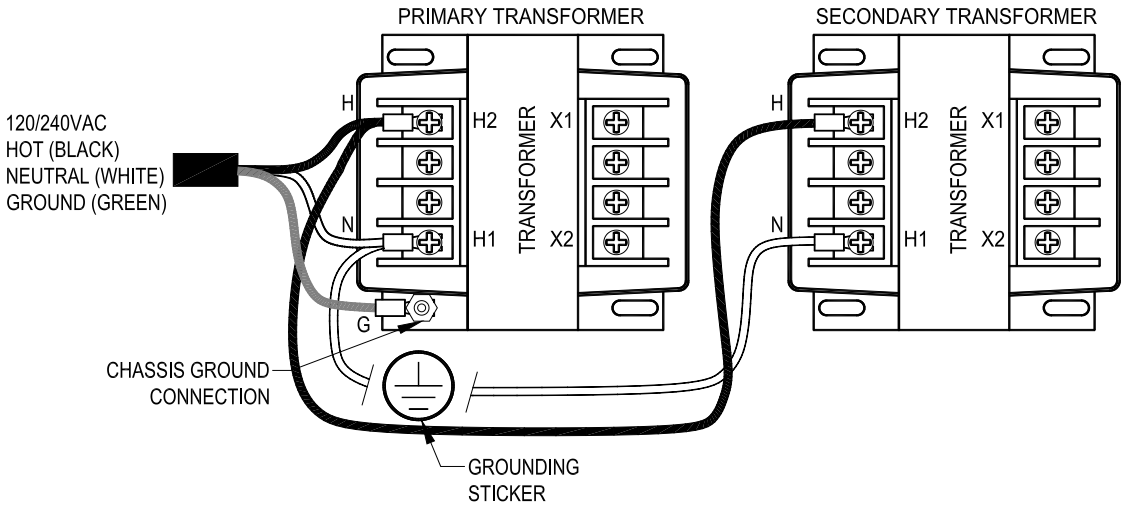


Exhibit 4-6: Connect AC Power to Secondary Transformer

4.11 INSTALL OPTIONAL MODULES

Several optional circuit modules can be installed onto the Cheetah Xi controller to expand its operational capabilities. The modules contain static sensitive components; therefore, handle them by the edges only and avoid touching the integrated components. Keep each module in the protective static bag it was shipped in until time for installation. Always ground yourself with a proper wrist strap before handling the module(s) to reduce the risk of damage due to static discharge.

The following terminals are provided on the Cheetah Xi controller, as shown on Exhibit 4-7, to allow connection of the optional modules:

Terminal	Module
P12	CRM4 Relay Module or Reverse Polarity Module
P13	CRM4 Relay Module or Reverse Polarity Module
P15	Supplemental Loop Module
P16	Supplemental Power Supply
P20	Network Modules (RS485 or Fiber Optic)

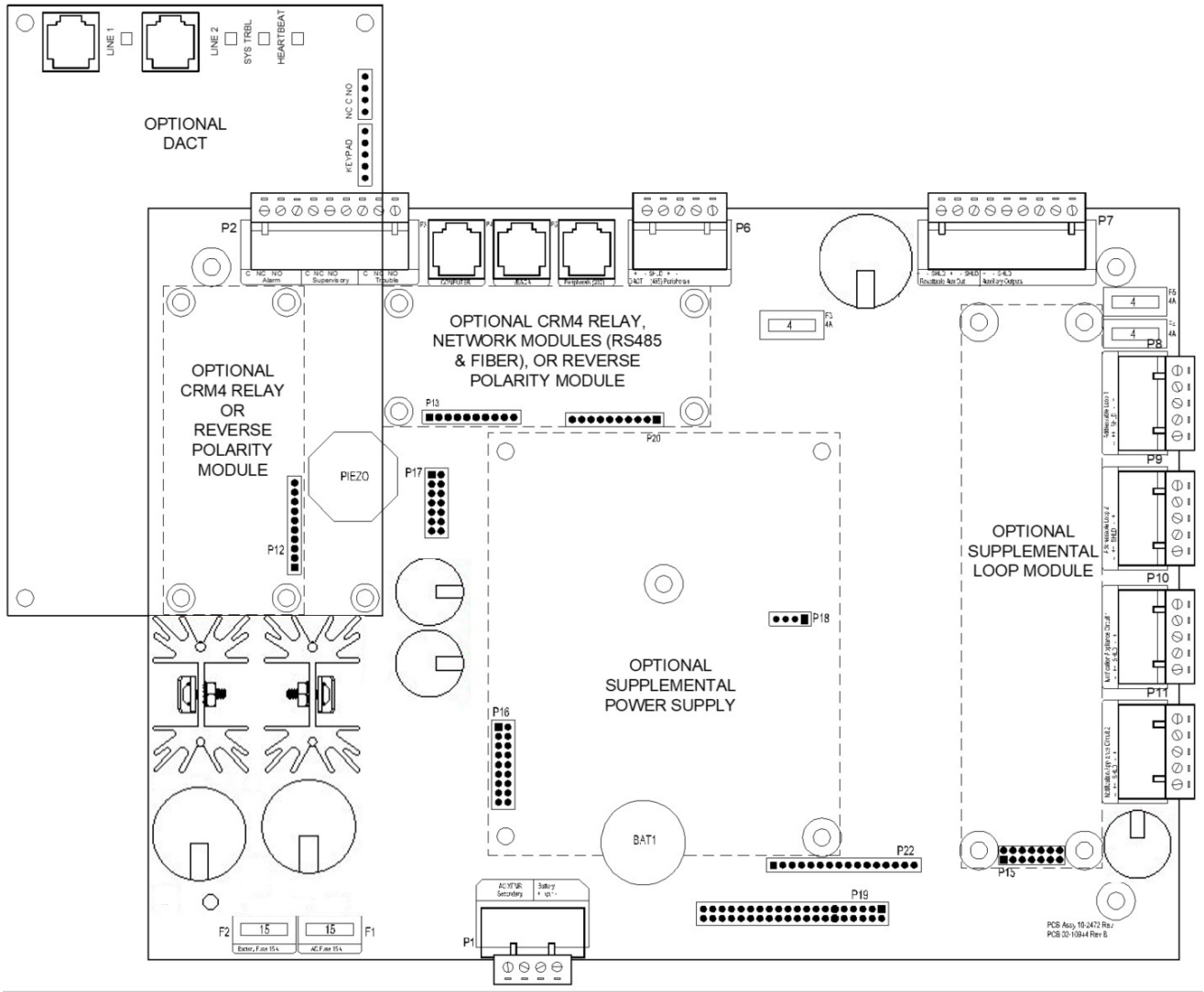


Exhibit 4-7: Mounting Locations for Optional Modules

All of the optional modules, except the DACT, must be installed prior to installing the Cheetah Xi controller into the enclosure. Refer to the installation instructions supplied with each module for specific installation instructions.

Note: If the optional Internal DACT is installed, terminal P12 is no longer available for use.

Note: Modules installed in terminals P13 and P20 share the same mounting footprint on the Cheetah Xi board and cannot be used simultaneously.

Note: Before installing the internal panel components into the enclosure back-box, thoroughly clean the enclosure making sure that it is clean and free from any construction dust or debris.

Note: The Cheetah Xi electronics contain static sensitive components. Handle the electronics by the edges only and avoid touching the integrated components. Keep the electronics in the protective static bags it was shipped in until time for installation. Always ground yourself with a proper wrist strap before handling the module(s) to reduce the risk of damage due to static discharge.

Note: The mounting hardware for installing the panel components is shipped with the system enclosure.

4.12 INSTALL THE CONTROLLER

Fike recommends that the system electronics not be installed until after all construction cleanup has been completed in order to avoid potential damage due to dust and debris.

Before installing the Cheetah Xi controller, thoroughly clean the enclosure to remove any dirt, dust, and debris. The hardware for mounting the Cheetah Xi controller is furnished with the system enclosure.

The following general steps shall be used to install the controller:

1. Locate the five threaded controller mounting studs in the back of the enclosure as shown in Exhibit 4-8.
2. Install the five hex stand-offs (.625, M/F #6-32) supplied with the enclosure onto the threaded press studs.

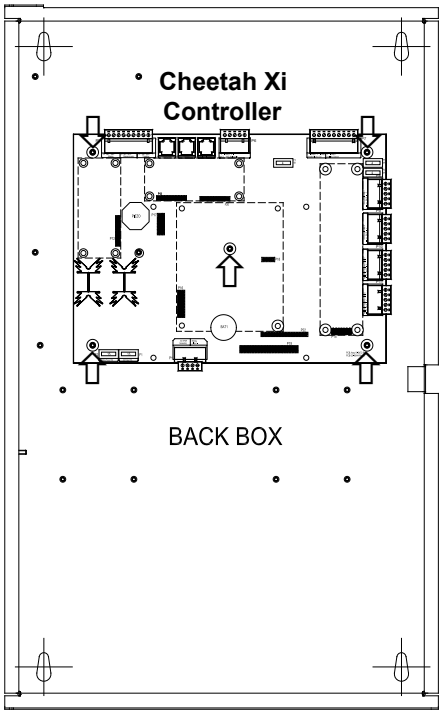


Exhibit 4-8: Controller Mounting Location in Standard Enclosure

3. Align the mounting holes provided in the four corners of the controller board with the stand-offs and secure in place using the four hex-nuts supplied with the enclosure as shown in Exhibit 4-9. Do NOT install a hex nut on the center stand-off.

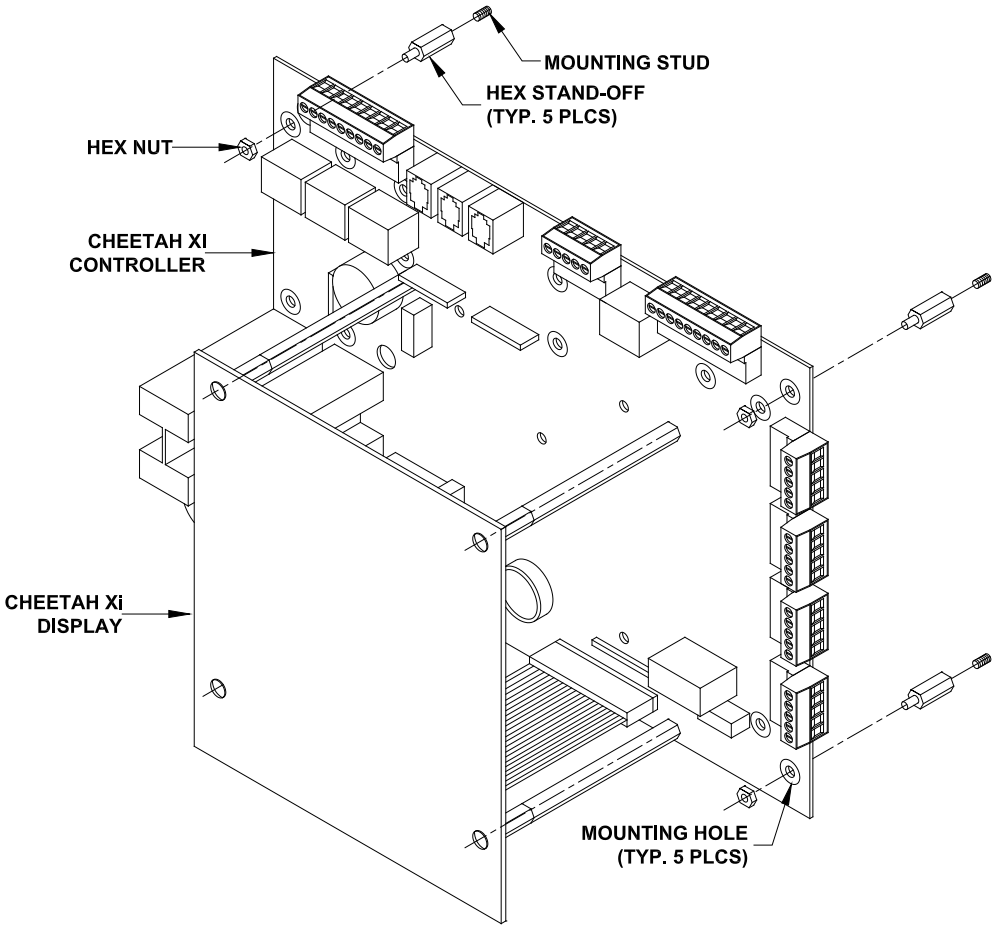


Exhibit 4-9: Mounting the Controller

4.13 CONNECT AC POWER TO THE CONTROLLER

WARNING

AC power connections to the Cheetah Xi Controller must be made with the main power breaker locked out.

The following general steps shall be used to connect AC power to the controller:

1. Remove the (P1) terminal block from the Cheetah Xi board
2. Connect wiring from the primary transformer to the controller's AC XFMR terminal (P1) as shown in Exhibit 4-10, making sure to land wires to correct terminal.
3. If the optional supplemental power supply is present, install wiring from the secondary transformer to the SPS AC XFMR terminal (P21) as shown in Exhibit 4-10, making sure to observe correct polarity.
4. *Do **NOT** energize the AC power source at this time!*

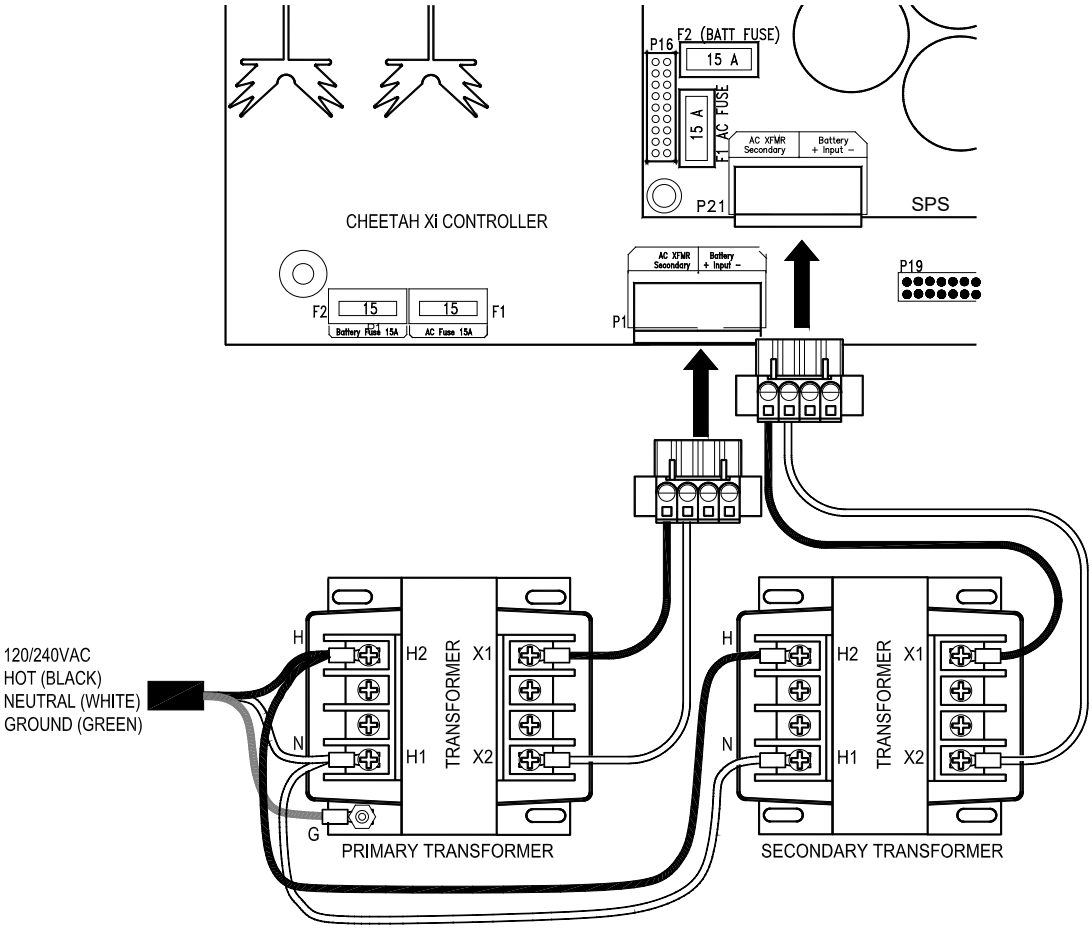


Exhibit 4-10: AC Power Connections

Caution

The transformer input should never be connected to the battery input. Reversing the AC and Battery input will damage the controller.

4.14 INSTALL BATTERIES

The Cheetah Xi enclosure is capable of housing up to two (2) 18 AH batteries. Where larger or additional battery Amp-Hours are required, a separate battery cabinet can be installed to house the batteries. The battery cabinet must be installed in the same room as the control panel with a maximum wire length of 10 ft. (3 m). Interconnect wiring shall be 14 AWG minimum and shall be installed in conduit.

The Cheetah Xi controller provides a removable terminal block (P1) to facilitate connection of both the AC and DC power supplies. The following general steps shall be used to connect the batteries:

1. Install the batteries (2) into bottom of the enclosure and/or into the separate battery cabinet.
2. Connect the positive (+) battery cable lead from the (P1) positive battery input terminal to the positive (+) terminal of one battery.
3. Connect the negative (-) battery cable lead from the (P1) negative battery input terminal to the negative (-) terminal of the other battery.
4. A jumper is supplied to provide the connection between the negative (-) terminal on the first battery to the positive (+) terminal on the second battery. *Do **NOT** install this jumper at this time!*

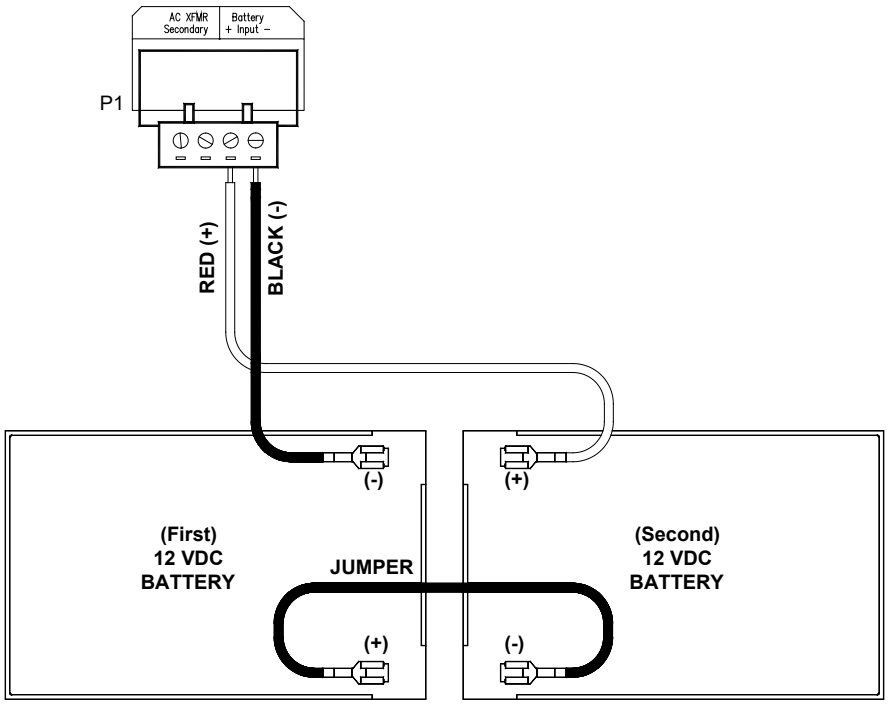


Exhibit 4-11: Battery Connections

4.14.1 BATTERY CUTOFF

The Cheetah Xi panel has battery cutoff feature that allows the system batteries to be automatically disconnected from the load if the system's operating voltage (AC/DC) drops below 19 volts. This feature prevents the batteries from being discharged beyond their end-of-discharge terminal voltage thus preventing potential damage to the batteries or control unit, which could result in abnormal operation of the control unit during battery discharge period or on re-energizing by the main power supply. Upon restoration of the main power supply, the batteries shall be automatically reconnected to the system. Refer to Appendix D for battery cutoff wiring diagram.

4.15 APPLY POWER TO THE PANEL

Prior to connecting any field wiring to the panel, apply power the controller and verify proper operation. The following general steps shall be used to apply power to the controller:

1. Insert (P1) and (P21) terminal blocks to the controller and supplemental power supply (SPS), if applicable.
2. Turn on the breaker and power the control panel with AC power only. The AC Power LED on the control panel display should illuminate. In addition, the system Trouble LED should illuminate because the batteries are not connected.
3. Install the supplied jumper cable between the negative (-) terminal of the first battery to the positive (+) terminal of the second battery.
4. With the batteries connected, verify that the only the system AC POWER led is illuminated.
5. Power down the controller by first disconnecting the batteries (DC power), then transferring the breaker (AC).
6. Identify and fix any problems indicated by the controller before connecting field wiring.

⚠ Caution

Immediately power down the system (DC followed by AC) if the display shows improper characters, you smell smoke, or if you see sparks. Each of these conditions indicates improper connections or malfunction of components. After power is removed, investigate for source of malfunction by checking module connections in the area of the malfunction.

4.16 CONNECT FIELD WIRING

The Cheetah Xi controller is equipped with removable terminal blocks that are capable of accepting 12 – 24 AWG wire. If stranded wire is used, it is recommended that wire ends be tinned. Exhibit 4-12 shows the terminal block designations and their general function for reference purposes.

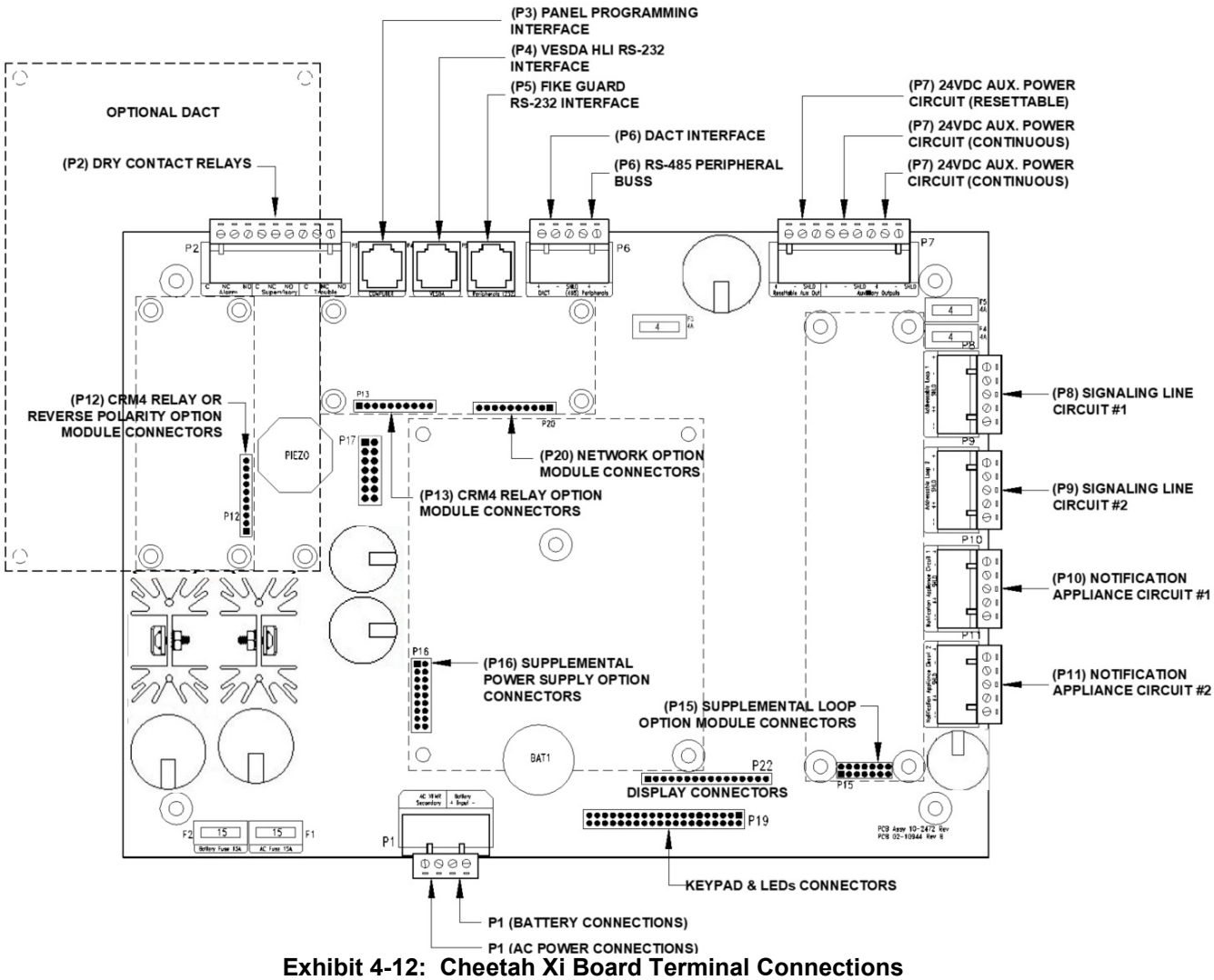


Exhibit 4-12: Cheetah Xi Board Terminal Connections

> **⚠ Caution**
>
> Attaching the wire while the terminal block is still connected into the board may damage the terminal block if too much force is applied.

4.16.1 GENERAL RELAY WIRING (P2)

The panel provides three Form-C relay contacts as shown in Exhibit 4-13. By default, the relays activate on system Alarm, Supervisory, and Trouble conditions. The Trouble Relay is normally energized to allow it to change state when power to the main control board is lost. Relay contacts are shown with power applied and no Troubles present. The circuit board provides labeling for the three form C relays where C=common; NC=normally closed; and NO=normally open. These connections can all be wired power-limited or non-power-limited, but not both.

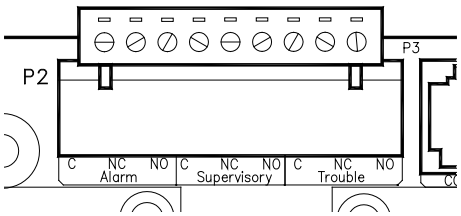


Exhibit 4-13: P2 Relay Connections

4.16.2 RS232 WIRING (P3-P5)

The panel provides three RS232 jacks as shown in Exhibit 4-14. These jacks allow intelligent devices to link into the Cheetah Xi controller. These connections are all supervised and power-limited.

P3 - dedicated for programming the panel using the C-Linx software. Programming cable 10-1874A must be used for this connection.

P4 - dedicated for connection to a VESDA network via a VESDA HLI interface. A 20 ft. (6.1m) serial cable 02-15802 is provided with the HLI for connection to the controller. The HLI is considered a permanent connection to the RS232 port (P4) and shall be located within 20 ft. (6.1m) from the control panel.

P5 - dedicated for connection to the Fike Guard voice evacuation system. Fike Guard is considered a permanent connection to the RS232 port (P5) and shall be located within 20 ft. (6.1m) from the control panel.

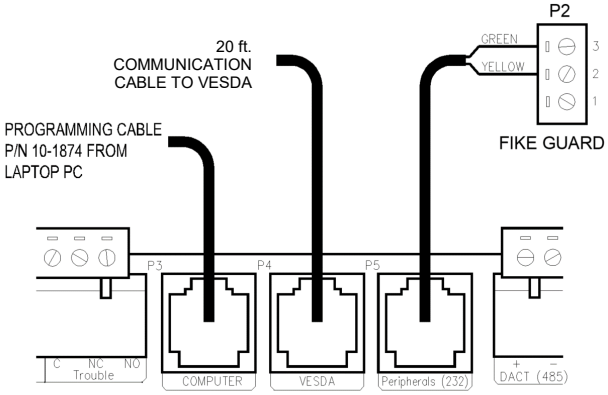


Exhibit 4-14: RS232 Wiring (P3-P5)

4.16.3 RS485 PERIPHERAL BUS WIRING (P6)

The panel provides a single isolated RS485 data interface between the Cheetah Xi panel and compatible peripheral devices as identified in Section 3.5. The peripheral bus must be connected in a daisy chain configuration as shown in Exhibit 4-15. These connections are all supervised and power-limited. Do NOT branch or star tap the peripheral bus.

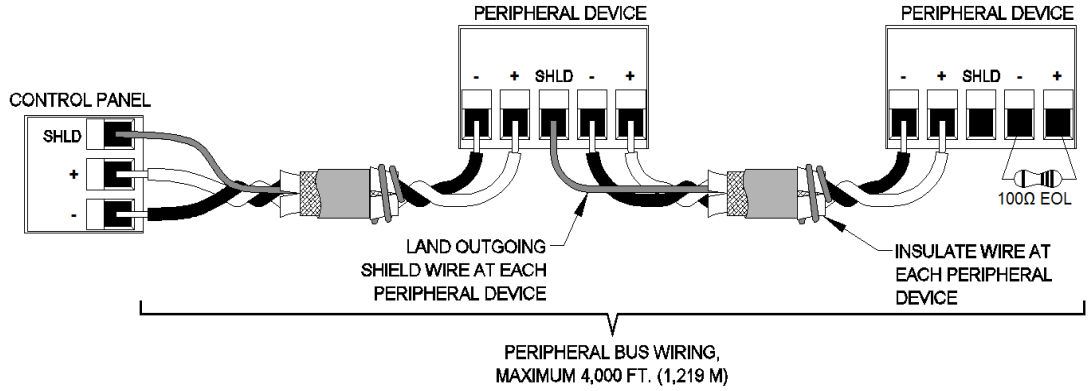


Exhibit 4-15: (P6) RS485 Peripheral Bus Wiring

P6 (DACT) is dedicated for connection of the optional internal Fire Communicator as shown in Exhibit 4-16.

Refer to Fike document 06-479 for more details.

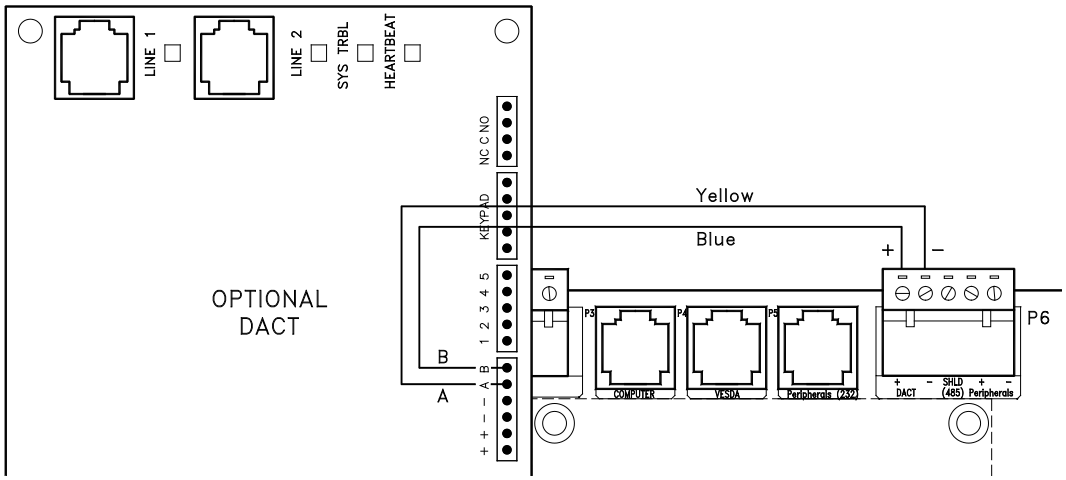


Exhibit 4-16: (P6) RS485 DACT Wiring

4.16.4 AUXILIARY POWER WIRING (P7)

The panel provides one power-limited 24VDC, resettable power output (two leftmost contacts on P7) as shown in Exhibit 4-17. This power output is used for devices that latch events and require removal of power to reset such as 4-wire detectors, some duct detectors, beam detectors, etc. It is rated at 2 amps maximum and is supervised.

The remaining two sets of power outputs on P7 are power-limited 24VDC, non-resettable power outputs. This power output is used for addressable output modules, graphic annunciators, remote displays, etc. Each circuit is rated at 2 amps maximum and is supervised.

Shielded wire is not required, but if used land outgoing drain wire to terminal marked SHLD. Connect it through and insulate at each junction box and leave unconnected and insulated at the last device.

Note: The standard Cheetah Xi Control Panel has a total power capability of 6 amps.

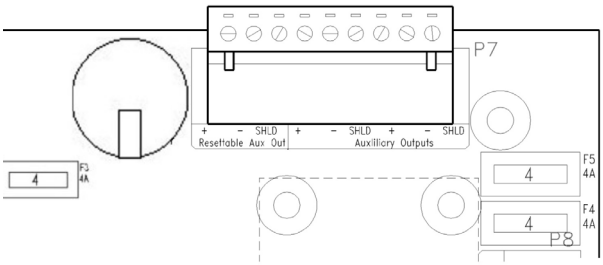


Exhibit 4-17: (P7) Auxiliary Power Wiring

4.16.5 SIGNALING LINE CIRCUIT WIRING (P8 & P9)

Communication between the control panel and each intelligent, addressable device takes place through a Signaling Line Circuit (SLC). The SLC is supervised and power-limited. Exhibits 4-18, 4-19 and 4-20 illustrate how to wire the SLC loop to meet the requirements of NFPA Class B (Style 4), Class A/Style 6, or Class X (Class A/Style 7) circuits. For details on how to wire each addressable device to the SLC loop, refer to the installation instructions supplied with each device.

Be aware of surrounding environment when installing the addressable loop, looking for possible sources of electrical interference. All SLC wiring should be segregated from such sources for optimum operation. Conduit and shielded cable help prevent electrical interferences from being induced. Shielded wire is not required, but if used install the outgoing drain wire at the panel. Connect it through and insulate at each junction box and leave unconnected and insulated at the last device.

Note: FM Approved Deluge and Pre-action Sprinkler operation requires that initiating device circuits be Class A and wired to FM Listed/Approved devices.

⚠ Caution

If using a High voltage device to verify ground isolation of loop wiring, do not expose devices or modules to the high voltage. Damage to the devices will occur.

4.16.5.1 CLASS B WIRING

Exhibit 4-18 shows the typical wiring of a supervised and power-limited two-wire SLC that meets NFPA 72, Class B (Style 4) requirements. This wiring method does not include a redundant path. In the event of a single wire break, the communication to devices after the break is lost. This wiring method will support t-tapping (Detector #3 is t-tapped off Detector #2).

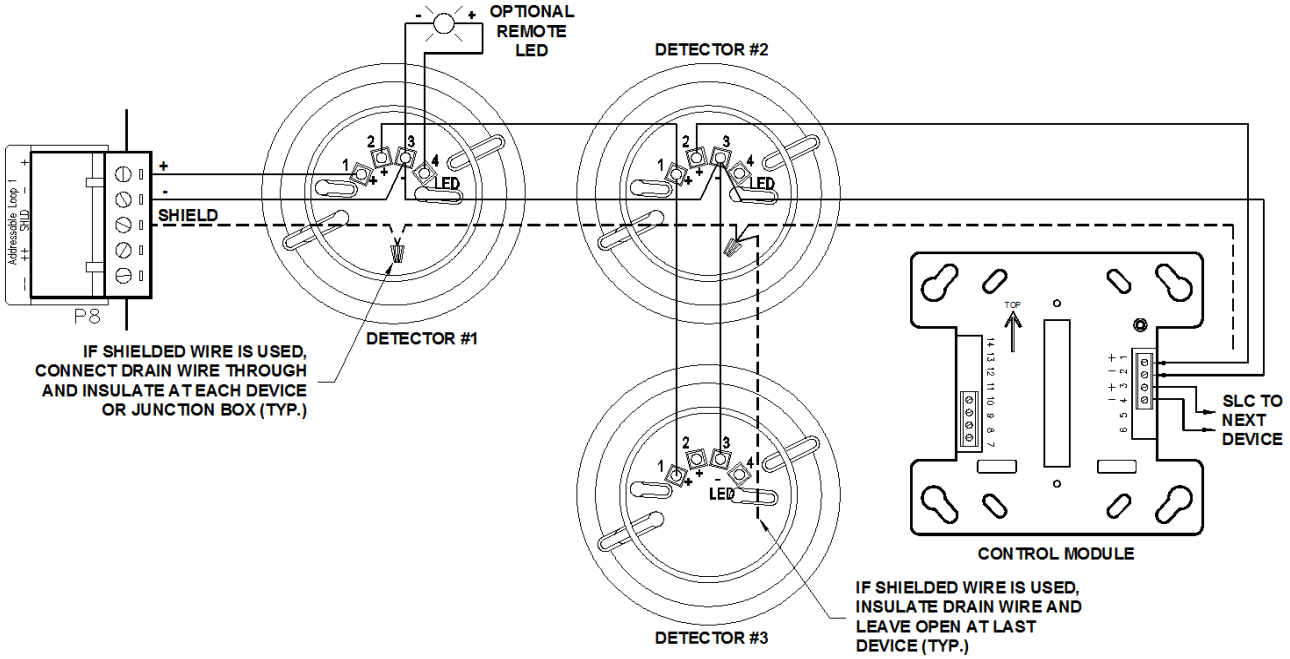


Exhibit 4-18: Class B SLC Wiring

4.16.5.2 CLASS A OR CLASS X WIRING

Exhibit 4-19 shows typical wiring of a supervised and power-limited four-wire SLC that meets NFPA 72, Class A (Style 6) requirements. This wiring method includes a redundant path. In the event of a single wire break, the communication to devices after the break continues. This wiring method will NOT support t-tapping. Refer to NFPA 72 for conductor installation requirements to maintain adequate separation between outgoing and return conductors.

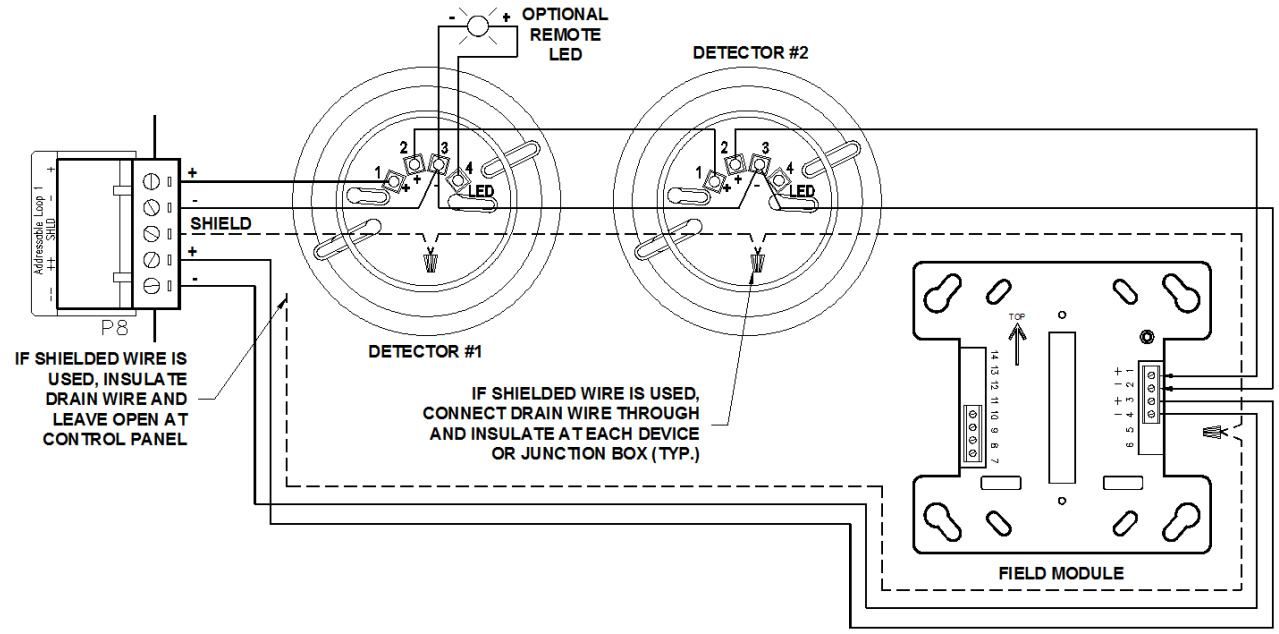


Exhibit 4-19: Class A or Class X SLC Wiring

4.16.5.3 CLASS X WIRING

Class X (Class A/Style 7) wiring is the same as Class A (Style 6) wiring except that it utilizes isolator devices to provide short-circuit protection for the signaling line circuit (SLC). The circuitry built-into the isolator devices allow communication to devices to continue past a single short-circuit. Short circuit protection can be provided for the entire signaling line circuit or for selected sections of the signaling line circuit. If protecting the entire loop, an isolator device must be installed within 20 feet (6.1 m) of the control panel on both the outgoing and return wiring. In addition, the wiring between the panel and the first and last isolator devices must be installed in conduit. Isolator devices can also be used to electrically isolate a zone of detectors and/or modules from the remainder of the loop by installing an isolator type device at the point where the SLC enters and leaves the zone. A maximum of 50 devices can be installed between two isolator type devices.

Note: If using isolator bases, the loop + is separated between terminal 1 (in) and terminal 2 (out).

4.16.5.4 REMOTE LED WIRING

The detector base has the ability to attach a remote LED as shown in Exhibit 4-20. The maximum current to be pulled from this connection shall be 6.5 mA as described in the System Detector installation instruction for these bases. The addressable loop is limited to a maximum of 300 mA total for addressable devices plus remote LED devices.

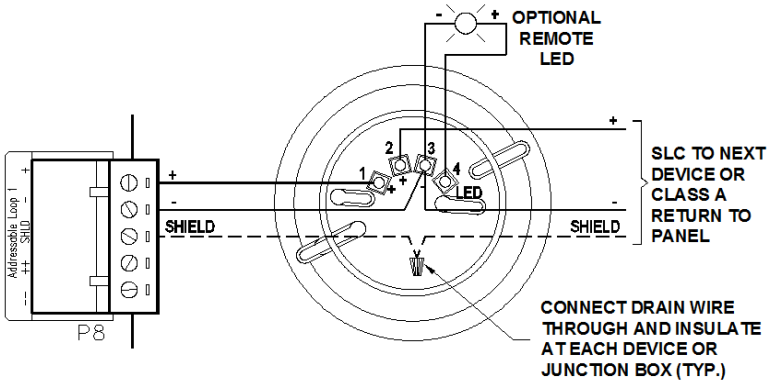


Exhibit 4-20: Remote LED Wiring

4.16.6 NOTIFICATION APPLIANCE CIRCUIT WIRING (P10 & P11)

P10 and P11 are two separate notification appliance circuits (NAC's) that provide the ability to activate compatible, UL-listed notification appliances listed in Fike document 06-186, "Device Compatibility manual". The NAC circuits are fused (4 amp), power-limited, supervised, and can be wired Class B (Style Y) (using 1.2K EOL) or Class A (Style Z) (no EOL), as shown in Exhibits 4-21 and 4-22. Shielded wiring is not required, however if used, land at the panel terminal block and pass through at each device similar to SLC device wiring.

The NACs can be configured to initiate the Gentex Commander Series or System Sensor SpectrAlert Series sync protocol. This allows all devices (strobes and horns) connected to the circuit to operate in unison. It also allows configuration for the audible devices to be silenced while the visual signals remain operational or silence both audible and visual devices. This is accomplished without requiring purchase and installation of a separate sync module. Both circuits must be programmed to use the same manufacturers sync pulse if this option is used.

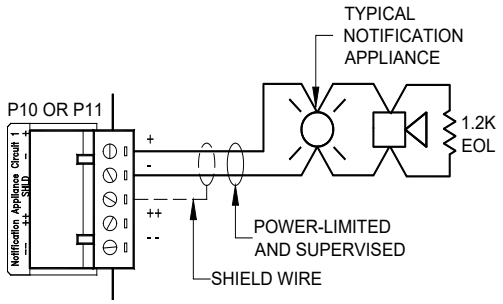


Exhibit 4-21: (P10/P11) NAC Circuit Wiring – Class B

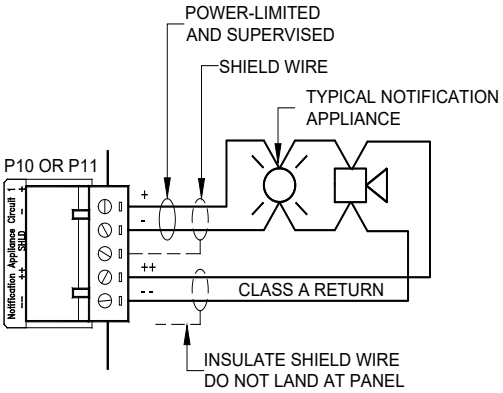


Exhibit 4-22: (P10/P11) NAC Circuit Wiring – Class A

4.17 INITIAL POWER-UP WITH FIELD WIRING CONNECTED

1. Energize AC power to Cheetah Xi controller and field power supplies (if installed) with field wiring connected.
2. Connect batteries to the Cheetah Xi controller, optional Supplemental Power Supply (if installed), and field power supplies (if installed).
3. Validate that all devices begin to function appropriately and wiring is connected properly.
4. Correct all circuit faults.

⚠ Caution

Immediately power down the system (DC followed by AC) if the display shows improper characters, you smell smoke, or if you see sparks. Each of these conditions indicates improper connections or malfunction of components. After power is removed, investigate for source of malfunction by checking module connections in the area of the malfunction.

4.18 CONFIGURE SYSTEM

There are many different methods that can be chosen to configure the Cheetah Xi fire alarm system. The two most common choices would be to AUTO PROGRAM or ENGINEERED CONFIGURE. Any combination of these two methods may also successfully accomplish matching the field devices to the installation configuration requirements. Refer to Fike Document 06-651, “Cheetah Xi Programming Manual” for specific details on how to configure the system.

4.19 ACCEPTANCE TEST

Once the system has been wired, configured, and any faults corrected, all installed components should be tested as a system to insure proper operation and to verify compliance with applicable NFPA standards. Testing should be conducted by a factory-trained fire alarm technician in the presence of a representative of the Authority Having Jurisdiction (AHJ) and the owner’s representative.

The initial system check is required to verify that all components of the system are installed and operating as intended. Where test results differ from those expected, corrective action must be taken.

Before commencing testing, notify all areas where the alarm sounds and off-premises locations that receive alarm and trouble transmissions that testing is in progress.

When the system has been tested and found to operate satisfactorily, a “Record of Completion” document , referenced in NFPA 72, shall be filled out and mounted near the fire alarm panel or provide it to the building representative.

Records of all testing and maintenance shall be kept on the protected premises for a period of at least five (5) years.

A complete check of installed field wiring and devices should be made at regular intervals, in accordance with NFPA 72 requirements.

Reserved for future use.

Power calculations must be completed to determine standby and alarm current loads for the system to ensure that the system power supply is capable of providing the required quantity of power during normal system operation and alarm conditions. The power requirements cannot exceed the capabilities of the system power supply. Amp-hour requirements must be calculated as well to determine proper back-up battery size selection.

The following battery calculation form provides the current draw (standby and alarm) of each compatible device that can be connected to the system. To calculate the required standby and alarm power, as well as required back-up battery size for the system, simply list the number of each type of device that will be connected to the system in the quantity column(s) and perform the required calculations.

BATTERY CALCULATION FORM

Section 1 - System Requirements

Item	Description	Standby Current per Unit (Amps)		Qty		Total System Standby Current per Unit (Amps)	Alarm Current per Unit (Amps)		Qty		Total System Alarm Current per Unit (Amps)
1	10-2542 System Controller (CSC)	0.275	x	1	=	0.275	0.275	x	1	=	0.275
2	10-2204 CRM4 *[Note 7]*	0.011	x		=		0.040	x		=	
3	10-2254 Reverse Polarity Module	NA	x	NA	=	NA	0.060	x		=	
4	10-2482 RS485 Network Module	0.050	x		=		0.050	x		=	
5	10-2624 FO Network Module	0.050	x		=		0.050	x		=	
6	10-2473 Supplemental Loop Module (SLM)	0.100	x		=		0.100	x		=	
7	10-2474 Supplemental Power Supply (SPS)	0.040	x		=		0.040	x		=	
8	Signaling Line Circuits (CSC + SLM)		x	1	=			x	1	=	
	Section 2 Totals					▼					▼
9	Auxiliary Power (CSC + SPS)		x	1	=			x	1	=	
	Section 3 Totals					▼					▼
10	Notification Circuits *[Note 8]*	NA	x	NA	=	NA		x	1	=	
	Section 4 Totals					▼					▼
		Total System Standby Current (Amps):					Total System Alarm Current (Amps):				
						[Note 1]					*[Note 2]*

Max. Quiescent Load (Standby): _____ hr *[Note 3]* ***Total Alarm Load:*** _____ min. x 1/60 = _____ hr *[Note 4]*

Required Standby Time (hr)		Total System Standby Current (Amps)		Required Standby Capacity (Amp-hr)	Required Alarm Time (hr)		Total System Alarm Current (Amps)		Required Alarm Capacity (Amp-hr)
	x		=			x		=	

Required Standby Capacity (Amp-hr)		Required Alarm Capacity (Amp-hr)		Total Required Capacity (Amp-hr)		Optional Factor of Safety		Adjusted Battery Capacity (Amp-hr)
	+		=		x		=	
						[Note 5]		*[Note 6]*

Section 2 – Signaling Line Circuits (CSC + SLM)

Item	Addressable Device Description	Standby Current per Unit (mA)		Qty		Total Standby Current per Unit (mA)	Alarm Current per Unit (mA)		Qty		Total Alarm Current per Unit (mA)
1	63-1052/1058 Photo	0.481	x		=		2.000	x		=	
2	67-033/034 Ion	0.481	x		=		2.000	x		=	
3	63-1053/1059 Photo/Heat	0.481	x		=		2.000	x		=	
4	60-1039/1040 Heat	0.451	x		=		2.000	x		=	
5	63-1057/63-1062 Photo/Duct	0.481	x		=		2.000	x		=	
6	68-140 FAAST XM *[Note 9]*	0.330	x		=		0.481	x		=	
7	68-302 FAAST XT *[Note 9]*	0.330	x		=		0.481	x		=	
8	68-509 FAAST XS *[Note 9]*	0.330	x		=		0.481	x		=	
9	55-045/050 MMM	0.485	x		=		2.000	x		=	
10	55-041/046 MM	0.485	x		=		2.000	x		=	
11	20-1063/1064 Pull Station	0.370	x		=		2.000	x		=	
12	20-1343 Release Pull Station	0.370	x		=		2.000	x		=	
13	55-042/047 SCM *[Note 10]*	0.630	x		=		2.000	x		=	
14	55-043/048 RM	0.580	x		=		2.000	x		=	
15	55-052/053 RCM *[Note 11]*	0.450	x		=		6.000	x		=	
16	55-056/55-061 DMM	0.600	x		=		2.720	x		=	
17	63-1063 Relay Base	0.170	x		=		0.170	x		=	
18	63-1064 Sounder Base *[Note 9]*	0.300	x		=		0.300	x		=	
19	02-3868 Remote Annunciator	NA	x	NA	=	NA	10.000	x		=	
20	02-3869 Remote Test	NA	x	NA	=	NA	10.000	x		=	
21	02-4998 Remote Key Test	NA	x	NA	=	NA	12.000	x		=	
		Total SLC Standby Current (mA):					Total SLC Alarm Current (mA):				

Total SLC Standby (mA): _____ /1000 = _____ A (Total) ***Total SLC Alarm (mA):*** _____ /1000 = _____ A (Total)

Insert totals in Section 1 – Line Item 7.

Section 1 and 2 Notes:

1. Standby current cannot exceed 1.5 A or 3.0 A with SPS in normal standby condition.
2. Alarm current cannot exceed 6.0 A or 12.0 A with SPS during full system operation.
3. NFPA 72 requires that the secondary power supply have sufficient capacity to operate the system under non-alarm condition for a minimum of 24 hours. Alternate standby times may be required by the local authority or approval agency.
   Factory Mutual requires that the secondary Power Supply have sufficient capacity to operate the system under non-alarm condition for the following systems Standard System 24 hours, Voice Evacuation 24 hours, Pre-Action/Deluge Release 90 hours.
4. NFPA 72 requires that at the end of the 24hour standby period, the secondary power supply shall have sufficient capacity to operate all alarm notification appliances used for evacuation or to direct aid to the location of an emergency for 5 minutes (0.083 hr) standard, 15 minutes for emergency voice/alarm communication service or UL 2572 mass notification service.
   Factory Mutual requires that at the end of the required standby period, the secondary Power Supply shall have sufficient capacity to operate all alarm notification appliances used for or to direct aid to the location of an emergency for 5 minutes (0.083 hr) standard, 15 minutes for emergency voice/alarm communication service and 15 minutes Pre-Action/Deluge Release.
5. 1.2 represents a battery derating factor of 20%. Twenty percent battery derating is required by Factory Mutual.
6. Cheetah Xi control panel can support charging up to 75 AH standby batteries. The Cheetah Xi panel with the SPS installed can support charging up to an additional 75 AH set of batteries for a system total of 150 AH.
7. Current draw value shown assumes all relays are active.
8. Section 4.0 shall only include the current draw of notification devices powered by the Cheetah Xi system controller or the supplemental power supply. This includes the two on-board notification appliance circuits (NAC 1 & 2).
9. Device requires 24 VDC power for operation. Include device current draw in Section 3.0 if power is supplied by the Cheetah Xi system controller or the supplemental power supply.
10. Supervised Control Module (SCM) requires 24vdc power for operation of connected devices. If using the SCM to control the operation of a master-box interface or sprinkler solenoids, include current draw for all connected devices in Section 3.0. If using the SCM to control notification appliances, include current draw for all connected devices in Section 4.0.
11. Device requires 24vdc power for operation of connected releasing device(s). Include current draw for all connected devices in Section 3.0.
12. FM Requirement Only: 20.4 VDC must be supplied to the last releasing device under all conditions.

Section 3 – Auxiliary Power (CSC + SPS)

Item	Device Description	Standby Current per Unit (Amps)		Qty		Total Standby Current per Unit (Amps)	Alarm Current per Unit (Amps)		Qty		Total Alarm Current per Unit (Amps)
1	68-140 FAAST XM	0.415	x		=		0.465	x		=	
2	68-302 FAAST XT *[Note 6]*		x		=			x		=	
3	68-509 FAAST XS *[Note 6]*		x		=			x		=	
4	55-052/053 RCM w/ Agent	0.0194	x		=		0.010	x		=	
5a	10-1832 ARM *[Note 2]*	0.002	x		=		0.008	x		=	
5b	10-2748 IRM *[Note 2]*	0.003	x		=		0.037	x		=	
6	55-052/053 RCM w/ Solenoid	0.0364	x		=		0.010	x		=	
6a	Releasing Solenoid Coil *[Note 3]*	NA	x	NA	=	NA		x		=	
7	55-042/047 SCM w/ Solenoid *[Note 3]*	NA	x	NA	=	NA		x		=	
8	10-2413 Master-box Supervisor	0.022	x		=		0.283	x		=	
8a	Master-box Trip Coil *[Note 3]*	NA	x	NA	=	NA					
9	63-1064 Sounder Base	0.007	x		=		0.027	x		=	
10	10-2528/-2476 DACT	0.150	x		=		0.190	x		=	
11	10-2630 2-button RDU	0.036	x		=		0.139	x		=	
12	10-2631 10-button RDU	0.036	x		=		0.139	x		=	
13	10-2646 14-button RDU	0.036	x		=		0.139	x		=	
14	10-2627 Ethernet Module	0.097	x		=		0.134	x		=	
15	10-2583 Multi-Interface	0.200	x		=		0.200	x		=	
16	10-2411 LED Graphic Micro	0.067	x		=		0.140	x		=	
17	10-2667 20-Zone Remote Annun.	0.051	x		=		0.148	x		=	
18	10-2777 Relay Assy. *[Note 4]*	0.047	x		=		0.109	x		=	
19	10-2204 CRM4 Relay *[Note 5]*	0.011	x		=		0.040	x		=	
20	10-2770 HPM4 Relay *[Note 5]*	NA	x	NA	=	NA	0.086	x		=	
21	10-2785 Relay Card *[Note 5]*	0.032	x		=		0.256	x		=	
22	10-2792 Class A Peripheral Card	0.057	x		=		0.057	x		=	
23	10-2814 LOC Digital Paging	0.103	x		=		0.140	x		=	
24	10-2616 Keltron Printer	0.200	x		=		1.200	x		=	
25	10-2277 VESDA OP HLI	0.245	x		=		0.245	x		=	
26	10-2946 VESDA MB HLI	0.101	x		=		0.101	x		=	
		Total Aux. Power Standby Current (Amps):					Total Aux. Power Alarm Current (Amps):				

Insert totals in Section 1 – Line Item 8.

Section 3 Notes:

1. Include current draw of devices in this section only if 24vdc power for device operation is supplied by the Cheetah Xi system controller or the supplemental power supply. Typical for all devices.
2. Indicate quantity of ARMs or IRMs connected to the RCM.
3. Indicate alarm current draw of the coil that is connected to the module.
4. Assembly includes control card and relay bus card. Add the quantity of CRM4 and HPM4 relay cards installed on the bus card in rows 17 and 18.
5. Current values shown assume all relays are active.
6. Current values vary depending upon set fan speed. See below for values.

Detector	Current	Unit Fan Speed		
		High	Medium	Low
FAAST XM	Operating	0.415 A	NA	NA
	Alarm	0.465 A	NA	NA
FAAST XT	Operating	0.465 A	0.340 A	0.220 A
	Alarm	0.493 A	0.368 A	0.248 A
FAAST XS	Operating	0.200 A	0.151 A	0.120 A
	Alarm	0.230 A	0.172 A	0.142 A

Section 4 – Notification Appliances

Item	Device Description	Alarm Current per Unit (mA)		Qty		Total Alarm Current per Unit (mA)
1			x		=	
2			x		=	
3			x		=	
4			x		=	
5			x		=	
6			x		=	
7			x		=	
8			x		=	
9			x		=	
10			x		=	
11			x		=	
12			x		=	
13			x		=	
14			x		=	
15			x		=	
16			x		=	
17			x		=	
18			x		=	
19			x		=	
20			x		=	
21			x		=	
22			x		=	
23			x		=	
25			x		=	
26			x		=	
27			x		=	
28			x		=	
29			x		=	
30			x		=	
31			x		=	
32			x		=	
33			x		=	
34			x		=	
35			x		=	
36			x		=	
37			x		=	
38			x		=	
		Total NAC Power Standby Current (Amps):				

Total NAC Alarm (mA): _____ /1000 = _____ A
Total

Insert totals in Section 1 – Line Item 9.

Section 4 Notes:

1. Include current draw of all notification appliances connected to the Cheetah Xi's two on-board notification appliance circuits (NAC 1 & 2), and to SCMs that are receiving 24vdc power from the Cheetah Xi system controller or the supplemental power supply.

A “System Operation Posting” shown on the following pages provides a brief summary of the basic operation of the Cheetah Xi system. The completed “System Operation Posting” shall either be mounted on the cabinet front or framed and located adjacent to the control unit. It can be downloaded from Fike’s Customer Portal web page, document P/N 06-653.

For a detailed description of the operation of the Cheetah Xi system, refer to Fike document 06-356-2, “Cheetah Xi Operation and Maintenance Manual” for more details.

Reserved for future use.

OPERATING INSTRUCTIONS

Cheetah Xi Control System
(P/N 10-068)
Commercial Protected Premises Control Unit
Local, Auxiliary, Remote Station (PPU), Central Station (PPU), and Releasing Service

These instructions must be framed and displayed next to the panel in accordance with NFPA 72, National Fire Alarm Code for Local Fire Alarm System.

The key to open the panel can be found at this location:

_____

1.0 OPERATING INFORMATION

Normal Standby

1. Green AC Power LED lit steady.
2. All notification appliances off.

System Alarm

1. Red Alarm LED flashes.
2. Local panel sounder (piezo) emits slow pulse pattern.
3. Alarm notification appliances on.
4. Alarm information visible on LCD (liquid crystal display).
5. DO NOT press the RESET key at this time.
6. Press the ACKNOWLEDGE key to turn off the local piezo. Flashing LEDs will illuminate steady after key press.
7. Press the SILENCE key to turn off local piezo and silence active notification appliances programmed for silence.
8. Press the F1 key to display the source of the event on the top line of the LCD (liquid crystal display).
9. Investigate the source of the alarm condition and take appropriate actions.
10. After correcting the Alarm condition, press the RESET key to restore the system to normal operation.

System Trouble/Supervisory

1. Yellow Trouble and/or Supervisory LED flashes.
2. Local panel sounder (piezo) emits constant tone for System Trouble.
3. Local panel sounder (piezo) emits fast pulse pattern for Supervisory events.
4. Trouble and/or Supervisory notification appliances on.
5. Trouble and/or Supervisory information visible on LCD (liquid crystal display).
6. DO NOT press the RESET key at this time.
7. Press the ACKNOWLEDGE key to turn off local panel sounder. Flashing LEDs will be lit steady after key press.
8. Press SILENCE key to turn off local piezo and silence active notification appliances programmed for silence.
9. Press the F1 key to display the source of the event on the top line of the LCD (liquid crystal display).
10. Investigate the source of the Trouble/Supervisory condition and take appropriate actions.
11. After correcting the Trouble/Supervisory condition, press the RESET key to restore the system to normal operation.

Trouble Condition – Activation of a trouble signal under normal operation indicates a problem with the system (not an alarm) requiring immediate attention. Contact your local service representative. In most trouble conditions, the fire suppression system continues to provide protection to the building and its occupants; however, trouble conditions should not be allowed to remain. Investigate and remedy as soon as possible to ensure proper system operation.

Memory Fault – If panel experiences memory failure, local panel sounder emits a constant tone, onboard trouble relay transfers, and panel buttons do not respond to user input. Under this condition, the panel is no longer providing protection to the building and its occupants. Panel is to be replaced immediately.

2.0 HISTORY AND CONTROL BUTTONS

Step Alarm – Steps through the current ALARM events stored in the panel's Alarm history buffer. Available only if there are active alarm events present on the system.

Step Super – Steps through the current SUPERVISORY events stored in the panel's Supervisory history buffer. Available only if active supervisory events are present.

Step All - Steps through ALL events stored in the panel's current event history buffer. Press the F5 key to toggle between current events and the panel's entire 3,200 event history buffer.

Drill – Manually activates all outputs and notification appliances circuits assigned for drill operation in the configuration. Press the RESET key to clear the drill activation. Displays drill activation on LCD (liquid crystal display).

Acknowledge – Silences the local piezo sounder and changes all flashing LEDs to steady. All outputs remain active. Creates an acknowledge event in the panel history buffer.

Silence – Silences the local piezo sounder and all silenceable circuits. Illuminates the Yellow SILENCE LED steady and creates a silence event in the panel history buffer.

Reset – Resets the control panel to normal operation. All active control functions (relays and NACs) will deactivate. All display LEDs will illuminate steady until reset is complete. If events are still present on the system, control functions will immediately activate.

Enter – Saves and enters the current configuration settings. Use navigation buttons to change variables at the blinking cursor position.

Escape – Toggles event display from OFF-NORMAL (events present) to SYSTEM NORMAL (no events present) to TOP LEVEL menu.

Function Keys (F1 – F6) – Used to navigate through the control panel's menu system during system operation, maintenance and configuration.

3.0 LED INDICATORS

AC Power – Green LED which illuminates when AC power is applied to the control panel. Turns off when the AC power is removed or is too low for proper operation.

Alarm – Red LED that flashes when the panel enters the Alarm state. Illuminates steady after you acknowledge or silence the event. Turns off after the event is cleared and the control panel is reset.

Trouble – Yellow LED that flashes when the panel enters the Trouble state or if a zone or device is disabled. Illuminates steady after you acknowledge or silence the event. Turns off when all trouble conditions are cleared.

Supervisory – Yellow LED that flashes when the panel enters the Supervisory state or if a zone or device is disabled. Illuminates steady after you acknowledge or silence the event. Turns off when all supervisory conditions are cleared.

Silence – Yellow LED that illuminates steady after a SILENCE switch is pressed (local or remote). Turns off when DRILL or RESET key is pressed.

Pre-discharge – Red LED that flashes when the panel enters the Pre-discharge state. Illuminates steady after you acknowledge or silence the event. Turns off when the panel is reset.

Release – Red LED that flashes when the panel enters the Release state. Illuminates steady after you acknowledge or silence the event. Turns off when the panel is reset.

Disable – Yellow LED that illuminates steady when any zone is disabled. Outputs in the disabled zone will not operate. Panel will also indicate a Trouble and Supervisory event when a zone is disabled. Turns off when the panel is reset or the zone is enabled.

Abort – Yellow LED that flashes when the panel enters the Abort state. Illuminates steady after you acknowledge or silence the event. Turns off if the abort condition clears and no other abort events are present.

Ground Fault – Yellow LED that illuminates steady when a ground fault condition is present on the system. Turns off when the ground fault is cleared or the panel is reset.

4.0 MAINTENANCE AND TESTING

To ensure proper and reliable operation of the system, system inspection and testing should be scheduled as required by NFPA 72 and local codes and standards. Only a qualified Service Representative should perform testing or system maintenance.

Before Testing: Notify the fire department and/or central alarm receiving station if alarm conditions are transmitted off-site. Notify facility personnel of the test so alarm notification appliances are ignored during the test period. Physically disconnect all releasing devices.

Before Servicing: Remove AC and battery power before performing any repair or service work on the control panel. Refer to Fike document 06-356-2, “Cheetah Xi Operation and Maintenance Manual” for maintenance instructions.

5.0 IN CASE OF TROUBLE CONTACT:

Name:_____

Address:_____

Phone #:_____

or Fike Corporation
Customer Service Department
(800) 979-FIKE (3453) or
(816) 229-3405

Refer to Fike document 06-356-2, “*Cheetah Xi Operation and Maintenance Manual*” for additional information.

C.1 COMPATIBLE COMPONENTS

The following table identifies the components that are compatible with the Cheetah Xi system. Only those items listed shall be used on the system.

Exhibit C-1: Compatible Components

Part Number	Description
10-2542	Cheetah Xi Control Board and Display (included with 10-068 system)
10-2541-**c**-L	Cheetah Xi Enclosure (included with 10-068 system) **c:** (R=Red, B=Black) **L:** (L=Lexan cover)
02-10881	Transformer, 120VAC primary
02-10882	Transformer, 240VAC primary
OPTIONAL CIRCUIT MODULES	
10-2528	DACT (Bosch FPT-DACT-LC), 5 zone with Serial interface-for internal mounting
10-2476	DACT (Bosch FPT-DACT), 5 zone with Serial interface-w/enclosure for external mounting
10-2474-**p**	Supplemental Power Supply (SPS) **p:** (1=120V, 2= 240V)
10-2473	Supplemental Loop Module (SLM), adds 2 loops 254 devices each
10-2204[1]	Relay Module (CRM4)
10-2254	Reverse Polarity Module (RPM)
10-2482	RS485 Network Module
10-2624	Fiber Optic Network Module
PERIPHERAL BUS DEVICES	
10-2646[2]	14-Button Expanded Protocol Remote Display Unit
10-2631[2]	10-Button Expanded Protocol Remote Display Unit
10-2630[2]	2-Button Expanded Protocol Remote Display
10-2627	Ethernet Module
10-2583	Multi-Interface Module
10-1XXX	Intelligent LED Graphic Annunciators
10-2667[2]	20 Zone Remote Annunciator Module
10-2785[2]	Relay Card (RC12)
10-2777[2]	Relay Control Assembly (includes P/N 10-2778 Control Card and P/N 10-2769 Bus Card)
10-2770[3]	HPM4 Relay Card
10-2792	Class A Peripheral Bus Card

[1]Mounted to Cheetah Xi control board or 10-2777 Relay Control Assembly.
[2]Not FM approved
[3]Mounts directly to the 10-2777 Relay Control Assembly only.

Exhibit C-2: Compatible Components – Cont.

Part Number	Description
INTELLIGENT DETECTORS	
63-1052	Photoelectric Detector
67-033	Ionization Detector
63-1053	Photo/135° F Heat Combination Detector
60-1039	Intelligent Heat Detector, 135°-190° F (57°-88° C) Fixed Temp./ Rate of Rise
63-1054 (EBF)	Detector Base, 6 inch (System Sensor)
63-1055 (EB)	Detector Base, 4 inch (System Sensor)
63-1064 (EBS)	Sounder Base, 6 inch (System Sensor)
63-1063 (EBR)	Relay Base, 6 inch (System Sensor)
63-1058	Photo Detector, with Isolator
67-034	Ionization Detector, with Isolator
63-1059	Photo/135° F Heat Combination Detector, with Isolator
60-1040	Heat Detector, 135°-190° F (57°-88° C) Fixed Temp./ Rate of Rise, with Isolator
63-1060 (EBFI)	Detector Base, 6 inch, with Isolator (System Sensor)
63-1061 (EBI)	Detector Base, 4 inch, with Isolator (System Sensor)
63-1057	Photo DUCT detector
63-1062	Photo DUCT detector, with Isolator
63-1158	DUCT Detector Housing (must be used with 63-1057 or 63-1062)
68-140	FAAST XM Aspirating Smoke Detector
68-302	FAAST XT Aspirating Smoke Detector
68-509	FAAST XS Aspirating Smoke Detector
DUCT DETECTOR ACCESSORIES	
02-3868	Remote Annunciator LED
02-3869	Remote Test Station
02-4998	Remote Test Station with Key
63-1159	Sampling Tube, Duct Detector, up to 1 ft. (0.3m)
63-1160	Sampling Tube, Duct Detector, 1 ft. to 2 ft. (0.3m – 0.6m)
63-1161	Sampling Tube, Duct Detector, 2 ft. to 4 ft. (0.6m – 1.2m)
63-1162	Sampling Tube, Duct Detector, 4 ft. to 8 ft. (1.2m – 2.4m)
63-1163	Sampling Tube, Duct Detector, 8 ft. to 12 ft. (2.4m – 3.7m)

Exhibit C-3: Compatible Components – Cont.

Part Number	Description
ADDRESSABLE MODULES	
55-045	Mini Monitor Module (MMM)
55-041	Monitor Module (MM), 4 inch
20-1063	Addressable Pull Station (APS)
55-042	Supervised Control Module (SCM)
10-2360	Series Solenoid Diode/Resistor
10-2413	Masterbox Interface
55-043	Relay Module (RM)
55-052	Releasing Control Module (RCM)
55-050	Mini Monitor Module (MMM), with Isolator
55-046	Monitor Module (MM), 4 inch, with Isolator
20-1064	Addressable Pull Station (APS), with Isolator
55-047	Supervised Control Module (SCM), with Isolator
55-048	Relay Module (RM), with Isolator
55-053	Releasing Control Module (RCM), with Isolator
VESDA INTERFACE	
68-023	VESDA Open Protocol High Level Interface (HLI)
68-517	VESDA Modbus High Level Interface (HLI)
PROGRAMMING AND CONFIGURATION	
55-051	Infrared (IR) Tool Remote Control for Programming/Testing Devices (non-listed)
10-2648	Hand Held Programmer (non-listed)
06-327	C-Linx Software (non-listed)
10-1874A	Interface Cable for C-Linx Software (DB9 to RJ11)
10-1874B	USB to DB9 Converter (02-11139) with 10-1874A interface cable Provides ability to use USB serial port on laptop (USB-DB9-RJ11)
02-11139	USB to DB9 Converter (02-11139) without 10-1874A interface cable
10-2629	USB A/B Cable for configuration of Cheetah Xi 50 System
10-2477	DACT Programmer (Bosch FMR-DACT-KEYPAD)
BATTERIES AND BATTERY ENCLOSURES	
10-2626	12 AH Battery Assembly w/ wiring assembly
10-2190-2	18 AH Battery Assembly w/ wiring assembly
10-2192	Wiring Assembly for 7.2 AH and 18 AH Batteries (wire only)
10-2517	Wire Assembly with Battery EOL
02-11725	Battery, 12V, 12 AH (Requires 2 each)
02-2820	Battery, 12V, 18 AH (Requires 2 each)
02-3468	Battery, 12V, 33 AH (Requires 2 each)
A02-0252	Battery, 12V, 40 AH (Requires 2 each)
02-4206	Battery, 12V, 75 AH (Requires 2 each)
10-2154-R	33 AH Battery Enclosure, Red, no batteries
10-2154-B	33 AH Battery Enclosure, Black, no batteries
10-2236-R	75 AH Battery Enclosure, Red, no batteries
10-2236-B	75 AH Battery Enclosure, Black, no batteries

Exhibit C-4: Compatible Components – Cont.

Part Number	Description
SPARE PARTS	
02-4035	Hardware Kit, #6 lock washers and hex nuts (30 each)
02-10788	Standoff kit, 5/8" M/F, 5 each required (10 each supplied)
02-4009	Standoff, 2" M/F, for 10-2528 DACT, 4 each required (1 each supplied)
02-11127	Terminal Block, 4 position for P1 Power or P21 SPS Power
02-10996	Terminal Block, 9 position for P2 Relays OR P8 Aux Power
02-10998	Terminal Block, 5 position for P8-P11, P31-P32 SLC or NAC circuits
02-1606	Key lock with cam (no Lexan door/enclosure)
02-11205	Key lock with cam (Lexan door/enclosure)
02-4983	Panel Key Only (without cam)
02-10881	Transformer, 120VAC
02-10882	Transformer, 240 VAC
02-4040	Battery, Lithium Coin Cell, 3V
10-2625	Monitor & Control Module EOL Assembly, 39K
10-2530	14KΩ Series Resistor, for Monitor Module Short Circuit detection
10-2570	End of Line Resistor, 1.2 K (for NAC 1 & 2)
02-4174	Fuse, 15 Amp, Mini-Auto, Fast Acting (For F1 & F2) (Littelfuse, Inc. P/N 297015)
02-11412	Fuse, 4 Amp, Mini-Auto, Fast Acting (For F3,F5, F6, F7) (Littelfuse, Inc. P/N 297004)
02-4981	End Of Line Relay – System Sensor EOLR-1
02-2519	Termination Resistor, 100 ohm (for RS485 circuit)
02-11167	Lexan for mounting to the –L version door

C.1.1 TOUCH-UP PAINT (NOT AVAILABLE FROM FIKE)

Signal Red – RAL 3001 per RAL 840-HR (Matt Finish)

Light Gray – RAL 7035 per RAL 840-HR

C.1.2 NOTIFICATION APPLIANCES

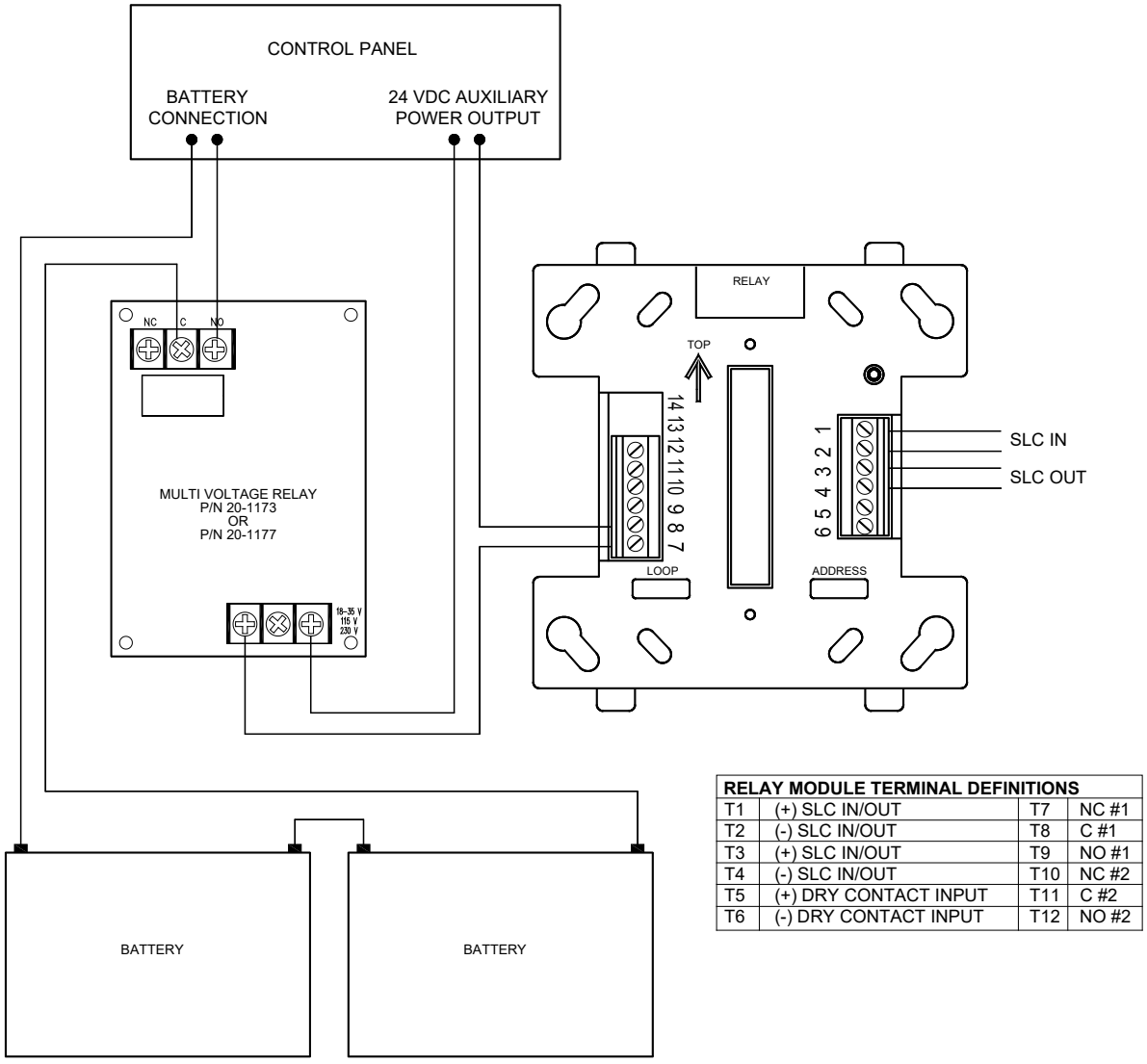
Refer to Fike document 06-186 for Compatible Notification Appliances.

C.1.3 FACTORY MUTUAL APPROVED RELEASING SOLENOIDS

Refer to Fike document 06-186 for compatible Releasing Devices.

D.1 BATTERY CUTOFF

Exhibit D-1 below shows the components used to facilitate the battery cutoff arrangement for Fike's Cheetah Xi control panel.



RELAY MODULE TERMINAL DEFINITIONS			
T1	(+) SLC IN/OUT	T7	NC #1
T2	(-) SLC IN/OUT	T8	C #1
T3	(+) SLC IN/OUT	T9	NO #1
T4	(-) SLC IN/OUT	T10	NC #2
T5	(+) DRY CONTACT INPUT	T11	C #2
T6	(-) DRY CONTACT INPUT	T12	NO #2

Exhibit D-1: Battery Cutoff Wiring Diagram

Reserved for future use.

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