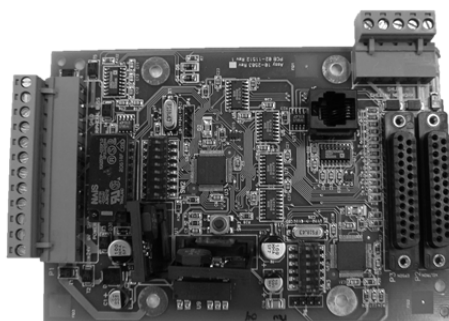


## PRODUCT MANUAL


# Multi-Interface Module



**P/N 10-2583**



**P/N 10-069**

  
P/N 06-367, Rev. 5  
October, 2016

**fike**<sup>®</sup>

### SOLUTIONS

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

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## REVISION HISTORY

**Document Title:** Multi-Interface Module, Product Manual

**Document Reorder Number:** 06-367

Revision	Section	Date	Reason for Change
0	All Sections	06/06	Initial Release
1	Sections 1, 2, 3, 4 and 7	01/08	Revised connectivity for Single Cheetah Network Listing Changes
2	All Sections	7/09	Revised to add PC graphic interface
3	Revised Sections 4.0, 6.4, 6.6 and added Appendix A	03/2010	Clarified that 10-1874A interface cable is not supplied with MIM; Keltron Printer switch settings; and MIM dip switch settings
4	All Sections	09/2015	Gateway Operation is not available with Panel Firmware V7.00 and higher
5	All Sections	10/2016	Revised to new Fike documentation standards; added baud rate note to MIM peripheral bus connection pg. 9; added VESDA note to section 5.3 PC Graphic pg. 11.

# 1. ABOUT THIS MANUAL

This manual is intended to be a complete reference for the installation, operation, and service of the Fike Multi-Interface Module (MIM). The information contained in this manual must be utilized by the factory trained Fike distributor in order to properly install, test and service the Multi-Interface Module. This manual can also be used by the end user as an Operations Manual for the Multi-Interface Module.

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 possible damage to the Multi-Interface Module itself or adverse operating conditions caused by improper installation and programming.

## 1.1. PRODUCT SUPPORT

If you have a question or encounter a problem not covered in this manual, you should first try to contact the distributor who installed the protection system. Fike has a worldwide distribution network. Each distributor sells, installs, and services Fike equipment. Look on the inside door, left-side, there should be a sticker with an indication of the distributor who sold the system. If you cannot locate the distributor, please call Fike Customer Service for locating your nearest distributor, or go to our web-site at [www.fike.com](http://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 Technical Support at (800) 979-3453 Option 2 1, Monday through Friday, 8:00 a.m. to 4:30 p.m. CST.

## 1.2. 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 cause damage to the equipment if safety instructions are not followed or if the hazard is not avoided.

**Note:** Provides information on installation, operation, maintenance, performance or general tips that are important but not hazardous to anything or anyone.

### 1.3. TERMS USED IN THIS MANUAL

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

**Acknowledge** - To confirm that a message or signal has been received, such as by the pressing of a button or the selection of a software command.

**Authority Having Jurisdiction** - The organization, office, or individual responsible for approving equipment, materials, an installation, or a procedure.

**Configure** - Panel set-up to properly recognize and supervise a device as the design requires.

**Fire Alarm Control Unit (Panel)** - A system component that receives inputs from automatic and manual fire alarm devices and might supply power to detection devices and to a transponder(s) or off-premises transmitter(s). The control unit might also operate releasing circuits or solenoids, provide transfer of power to the notification appliances, or transfer of condition to relays or devices connected to the control unit. The fire alarm control unit can be a local fire alarm control unit or a master control unit.

**Fire Alarm Signal** - A signal initiated by a fire alarm-initiating device such as a manual fire alarm box, automatic fire detector, waterflow switch, or other device in which activation is indicative of the presence of a fire or fire signature.

**Fire Alarm System** - A system or portion of a combination system that consists of components and circuits arranged to monitor and annunciate the status of fire alarm or supervisory signal-initiating devices and to initiate the appropriate response to those signals.

**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.

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

**Record of Completion** - A document that acknowledges the features of installation, operation (performance), service, and equipment with representation by the property owner, system installer, system supplier, service organization, and the authority having jurisdiction.

**Reset** - A control function that attempts to return a system or device to its normal, non-alarm state.

**RS485** - RS485 is a telecommunications standard for binary serial communications between devices. RS485 allows up to 32 devices to communicate over a single (2-wire) bus. Maximum bus length is 4,000 feet (1,219 m).

**RS232** - RS232 is a telecommunications standard for binary serial communications between two devices over relatively short distances (up to 50 feet).

**Zone** - A defined area within the protected premises. A zone can define an area from which a signal can be received, an area to which a signal can be sent, or an area in which a form of control can be executed. A particular area being protected. This term is used to create the relationship between activation inputs to notification outputs and peripherals.

## 2. PRODUCT OVERVIEW

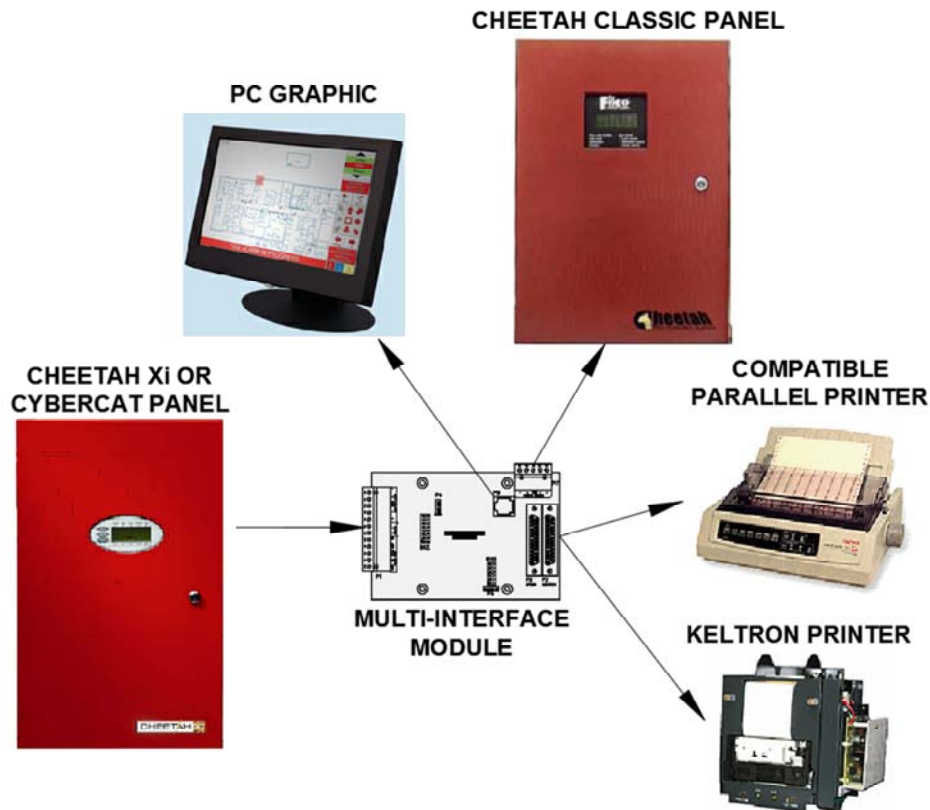
The Fike Multi-Interface Module (P/N 10-2583) can be connected to a Fike Cheetah Xi or CyberCat Control System to facilitate any one of the following interface connections:

1. Provides a gateway interface between newer Cheetah Xi and CyberCat panels to original Cheetah panels. This connection facilitates network communication and command and control between the panels.

**Note:** Gateway Operation is not available with Panel Firmware V7.00 and higher or MIM firmware 4.40 or higher.

2. Provides a connection point for both a serial or parallel printer to facilitate printing of real-time logs of system events and event histories.
3. Provides a gateway interface between Cheetah Xi and CyberCat panels and a PC graphic. The MIM (firmware v4.0 or higher) can be used with any panel firmware version for PC graphic interface.

The Multi-Interface Module (MIM) communicates with the Cheetah Xi and CyberCat via the panel's RS485 peripheral bus connection (P6). The MIM can be located either inside the FACP enclosure or in a separate box (P/N 10-069), as required. When installed in the FACP enclosure, the MIM is designed to be located in the space for the 2<sup>nd</sup> transformer (if Supplemental Power Supply is not used).



## 2.1. FEATURES

- Can be located up to 4,000 ft. (1,219 m) from the host Fire Alarm Control Unit.
- Powered from host control panel, or battery backed 24 VDC, Regulated, Power limited power supply listed for fire protective signaling use.
- Communicates on the host panel's RS485 Peripheral Bus.
- Gateway allows Cheetah Xi and CyberCat to connect to Cheetah "Classic" networks at distance up to 4,000 ft. (1,219 m). This allows information to pass between panels. Gateway operation is not available with panels equipped with Cheetah Xi and CyberCat panels equipped with firmware V7.00 and higher or MIM firmware V4.40 or higher. See Section 9.3 for specific details.
- Status LED's to provide instant indication of Module communication.
- Instant Data printed to Serial or Parallel Printer that is listed for fire protected signaling use.
- Incorporated trouble message at the panel to monitor printer paper and off-line.
- Can be supervised by host control panel.
- Instantaneous system status to connected device.
- Transfers command and control functions from PC graphic to host control panel via RS232 interface.
- Can interface to a parallel printer and act as a gateway at the same time. If the MIM is interfaced to a Keltron printer or a PC graphic, it cannot perform any other function.

## 2.2. LISTINGS AND APPROVALS

<u>Approval Agency</u>	<u>File Number</u>
Underwriters Laboratories	S3217
Factory Mutual (FM)	
California State Fire Marshall (CSFM)	
Cheetah Xi	7165-0900:149
CyberCat	7165-0900:137
COA	601,602,603 & 604

## 2.3. AGENCY STANDARDS AND COMPLIANCE

**This Fire Alarm product complies with the following standards:**

NFPA 70	NEC, Article 300 Wiring Methods
NFPA 70	NEC Article 760 Fire Protective Signaling Systems
NFPA 72	National Fire Alarm Code
UL 864	Control Units and Accessories for Fire Alarm Systems

### **Related Fire Alarm Standards**

NFPA 1	Fire Prevention Code
NFPA 13	Sprinkler Systems
NFPA 77	Static Electricity
NFPA 90A	Air Conditioning Systems
NFPA 101	Life Safety Code
NFPA 110	Emergency Standby Power Systems

Applicable Local and State Building Codes

Requirements of the Local Authority Having Jurisdiction



## 2.4. RELATED DOCUMENTATION

To obtain a complete understanding of the specific features of the Fike Control System or to become familiar with related functions in general, refer to the documentation listed in Table below.

<b>Document Title</b>	<b>Part Number</b>
CyberCat Product Manual	06-326
Cheetah Xi Product Manual	06-356
Cheetah Product Manual	06-148
Cheetah Xi 50 Product Manual	06-369
CyberCat 50 Product Manual	06-368
Precise Vision Product Manual	06-486

### 3. ORDERING INFORMATION

The 10-2583, Multi-Interface Module (MIM) consists of a Printed Circuit Board intended for mounting in the spare SPS location of the main control panel enclosure. For mounting the MIM external to the panel enclosure, you will need to order the 10-069, Multi-Interface Assembly (Exhibit 2).

The 10-069, Multi-Interface Assembly includes the following components:

Mounting Plate - 8.5”H x 6.5”L x 1/16” thick plate with black finish. It is ½” longer and wider than the available back box enclosure to facilitate surface or flush mounting options. The plate contains four (4) threaded press studs for attaching standoffs/mounting hardware for affixing the MIM circuit card.

Back-box - 8”H x 6”W x 3.5”D enclosure designed to house the MIM. The enclosure is equipped with electrical knock-outs for routing module circuitry into the enclosure.

Interface cable – 25 pin cable that provides an electrical connection between the desired circuit board printer output and the mounting plate connector.



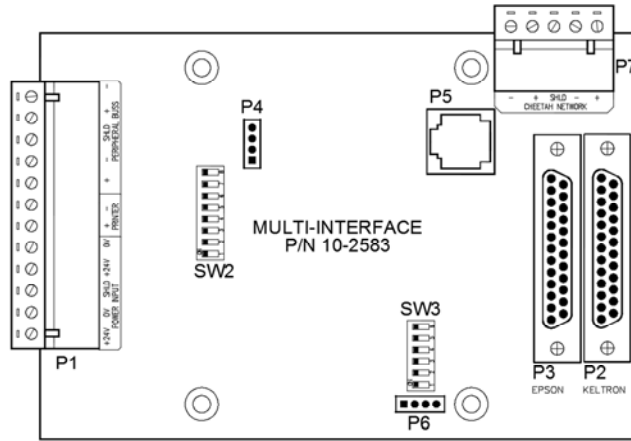
**Exhibit 2**  
**10-069 MIM Assembly**

#### 3.1. PARTS LIST

Fike P/N	Description
10-069	Multi-Interface (MIM) Module Assembly with Enclosure
10-2583	Multi-Interface Printed Circuit Board (incl. in 10-069)
10-2616	Keltron 90 Series UL fire alarm printer w/out enclosure (Keltron VS4095/5)
10-2617	Red Enclosure for Keltron Printer (Keltron VS ENCREG)
10-2618	Gray Enclosure for Keltron Printer (Keltron VS ENCGRY)
10-1874A	Serial Communication Cable, 14 ft. (4.28 m)
<b>Spare Parts (Items included in the 10-069 assembly)</b>	
70-2020	Mounting Plate (Black)
02-11632	Interface Cable, MIM to Mounting Plate
02-4494	Back Box Enclosure (Red)
02-11633	Fike Label for Mounting plate
02-1361	Nut, 6-32 Hex (4 required)
02-3846	Standoff, 1 ¼” M/F (4 required)
02-4558	Screw, #6 x ½” Phillips, black (4 required)
02-9882	Jackscrew, #4-40 (2 required)

## 4. SPECIFICATIONS

**Note:** MIM circuit board is rated for 32 - 120° F (0 – 49° C) at 93% relative humidity.



**Exhibit 3 10-2583 Multi-Interface Module**

**Exhibit 4 MIM Specifications**

Terminal	Name	Description/Specifications
P1-1, -2	Power Input +24V, 0V	Regulated, 24 VDC, continuous power input for MIM and printer connection. Supplied by Fike control panel or battery backed, regulated, power limited remote power supply listed for fire protective signaling use <sup>1</sup> . Non supervised and power limited Wire size: 12 – 24 AWG (5 – 0.25 mm <sup>2</sup> ) Current consumption: 200 mA
P1-3	Power Input SHLD	Connection point for drain wire if shielded cable is used.
P1-4, -5	Power Output +24V, 0V	24 VDC pass-through power output to next device.
P1-6, -7	Printer +, -	24 VDC power output to Keltron series printer. Supplied by power connection to terminals P1-1, -2. Power output is controlled by panel reset to force a reset condition on the Keltron printer. Non supervised and power limited Wire size: 12 – 24 AWG (5 – 0.25 mm <sup>2</sup> ) Current consumption: 60 mA standby and 1 A during printing
P1-8, -9	Peripheral Bus +, -	Peripheral bus connection out to next device or 100Ω termination if last device.
P1-10	Peripheral Bus SHLD	Connection point for RS485 drain wire.
P1-11, -12	Peripheral Bus +, -	Peripheral bus connection from Cheetah Xi or CyberCat panel (P6). Supervised and power limited Peripheral devices per circuit: 31 Baud rate: 9600 bps or 38400 bps <sup>2</sup> Wire type: Belden 9841 or equal. Use Belden 82841, 82842, or 89841 for plenum applications, no t-tapping Maximum wire length: 4,000 ft. (1,219 m) Maximum wire impedance: 100 Ω Maximum wire capacitance: 0.05 uF Voltage: varies between 0 – 5 VDC at 1 mA. Should never be a constant voltage or 0 VDC.

<sup>1</sup> Powering module from remote power supply can result in a ground fault unless it can be disconnected from earth ground allowing the Fike control panel to handle ground fault detection.

<sup>2</sup> MIM module has an auto-baud feature that will automatically match the baud rate setting of the control panel for communications purposes. If MIM firmware version is 4.40 or greater, the panel baud rate must be set to 38400 bps for proper communication to occur.

**Exhibit 4 MIM Specifications – Cont.**

<b>Terminal</b>	<b>Name</b>	<b>Description/Specifications</b>
P2	Keltron	DB25 standard serial printer connection to Keltron 90 series printer. Keltron printer must be installed within 20 ft (6.1 m) of the MIM and interface wiring must be installed in conduit.
P3	Epson	DB25 standard parallel printer connection to a parallel printer listed for fire protective signaling system use. Printer must be installed within 20 ft (6.1 m) of the MIM and interface wiring must be installed in conduit.
P4 (not shown)		Module programming connector (U3) – Fike use only
P5		RS232 connection for module diagnostics or direct interface connection to PC graphic. PC graphic must be installed in same room within 20 ft (6.1 m) of the MIM. Serial interface cable (p/n 10-1874A), purchased separately, must be used to provide interconnect between the PC and MIM. Interface cable must be installed in conduit. Only one PC graphic connection permitted per MIM. Non-supervised and power limited Connector: RJ11
P6 (not shown)		Module programming connection (U10) – Fike use only
P7	Cheetah Network -, +, SHLD, -, +	RS485 network connection in/out from Cheetah panel network card. Supervised and power limited Cheetah panels per circuit: 32 devices Baud rate: 4800 bps Wire type: Belden 9841 or equal. Use Belden 82841, 82842, or 89841 for plenum applications, no t-tapping Maximum wire length: 4,000 ft. (1,219 m) Maximum wire impedance: 100Ω Maximum wire capacitance: 0.05 uF Voltage: varies between 0 – 5 VDC at 1 mA. Should never be a constant voltage or 0 VDC
SW1		Not currently installed – future use
SW2		Cheetah Xi and CyberCat peripheral programming. Switch 1 – 6: Used to set peripheral address <sup>1</sup> Switch 7: Keltron printer selection Switch 8: Cheetah gateway selection <sup>1</sup> Addresses 2 - 32 must be used for gateway and printer interface. Addresses 34 - 63 must be used for monitoring computer interface.
SW3		Cheetah classic network address programming Switch 1 – 6: Used to set panel network address <sup>2</sup> <sup>2</sup> Addresses 2 - 32 must be used for gateway and printer interface. Addresses 34 - 63 must be used for PC graphic interface.

## 5. COMPATIBLE DEVICES

### 5.1. KELTRON 90 SERIES UL FIRE ALARM PRINTER (P/N 10-2616)

The Keltron 90 series printer meets UL fire requirements including print speed of 50 messages in 90 seconds. The printer operates directly from the 24 VDC power supplied by the MIM's printer output. Its print head is a dot matrix impact type capable of printing (red or black) in a compact 40-column format on a 3 inch paper roll. Records can be viewed at any time by depressing a switch on the front panel, and paper rewound by flipping the switch in the opposite direction.

Dimension: 8.75" width x 9.50" height x 5.5" depth unit

Operating Temperature: 0 - 50° C

Relative Humidity: 20% - 85%, non-condensing

Power Consumption: 60mA standby and 1A printing

Weight: 6 lbs. (2.72 kg)



Exhibit 5 Keltron Printer

### 5.2. KELTRON 90 SERIES PRINTER ENCLOSURES (P/N 10-2617 / 10-2618)

The Keltron wall mounted security cabinets provide a secure method for remotely installing the 90 series printer. The enclosures are available in red or gray finish. A viewing window is provided in each enclosure that allows viewing of 12 message lines plus printer and paper status LEDs with the outer door closed.

Color options: 10-2617 = red; 10-2618 = gray

Enclosure dimensions: 14.43" width x 14.5" height x 6" depth

Weight: 13 lbs. (5.9 kg) enclosure with printer



Exhibit 6 Printer Enclosure

### 5.3. PC GRAPHIC

Fike's offers two PC graphic stations, both of which are UL 864 listed for fire protective signaling system service. The desktop graphic workstation is similar to a standard desktop PC. It can be purchased with either a standard 19" LCD display or a touch screen display available in 17" or 19" sizes. The surface mountable touch screen station (P/N 13-0114) can be mounted to a wall or into a console where space is a premium. Each PC graphic workstation is capable of displaying real-time information about system alarms and devices that allows emergency response personnel to take appropriate action.

**Note:** The MIM with firmware v4.0 or higher must be used for PC graphic applications requiring command and control functions, in order to meet UL Listing requirements.

**Note:** When using the MIM for PC graphic interface, the host control panel must be configured to use expanded (EXP) protocol messages for proper message display. Verify that all peripheral devices connected to the system are capable of supporting expanded protocol messages (Firmware v3.0 or higher).

**Note:** To ensure proper communication between new VESDA E-Series detectors and PC graphic stations: 1) The host control panel must be equipped with firmware V7.20; 2) The MIM must be equipped with firmware V4.40; and 3) A Modbus HLI (P/N 68-517) must be used to interface between the VESDAnet and the host control panel.



Exhibit 7 Printer Enclosure

## 6. INSTALLATION

The following are the recommended steps for installing the Multi-Interface Module:

1. Install backbox/enclosure
2. Pull field wiring
3. Check field wiring with ohmmeter
4. Connect field wiring to internal electronics
5. Install the electronics
6. Set dipswitches then apply power
7. Program the panel
8. Check-out system
9. Train pertinent personnel

### Caution

All Fike Control Systems contain static sensitive components. Handle the module by the edges only and avoid touching the integrated components. Keep the module(s) in the protective static bag(s) it was shipped in, until time for installation. Always ground yourself with a proper wrist strap before handling the module(s). If the installer is grounded at all times, damage due to static discharge will not occur. If the module requires repair or return to Fike, it must be shipped in an anti-static bag.

### 6.1. INSTALL BACK BOX/ENCLOSURE

If using the Control Panel as back box, mount the control panel using the control panel manual details. If using the 10-069, the back box can be surface or flush mounted as desired. For surface mounting, utilize the openings in the back of the box. For flush mounting, cut the opening in the wall to fit the 8" tall x 6" long x 3-1/2" deep back box. The cover has 1/2" over-lap on all side of the enclosure. Secure the box to the wall by again utilizing the openings in the back of the enclosure.

### 6.2. PULL FIELD WIRING

Determine the maximum number of conductors needed from the design. Wire is to be brought to the Multi-Interface Module via knock-out openings. Conduit is not required, but is recommended, especially for an electrically noisy environment. Conduit knock-outs are provided for two distinct conduit sizes. Half-inch (1/2") conduit can be used by breaking just the inside hole. Three-quarter inch (3/4") conduit can be used by removing all of the opening.

**i Note:** Do not install the electronic assemblies into the back box until the environment is free from construction dust.

Unless otherwise detailed in this manual or in other documents relating to this module, the designer, installation and service technician, shall utilize published standards and references such as NFPA 70 National Electrical Code, NFPA 72 National Fire Alarm Code and other standards which may be relevant to the Local Authority Having Jurisdiction where the module will be installed.

All incoming wiring for the Multi-Interface Module is power-limited. No separation of wiring due to power limitations is required.

### 6.3. CHECK FIELD WIRING WITH AN OHMMETER

Short the conductors at the end and measure the total wire resistance for the particular circuit at the panel. Note the obtained readings on as-built drawings. Compare the obtained values with the requirements listed in the specifications of Section 4. If any resistance reading exceeds the maximum specifications, notify the designer to consider modifications. Remove the short at the end and leave both conductors open, or install End of Line Resistor as needed.

**Note:** This section is referring to connecting only the field devices. Do not make the connections at the Main Control Panel at this time. Connect peripheral RS485 devices to the communication loop and program termination and addresses as required in each product manual. Utilize common colors for + and – wiring and note actual wiring colors used on the as-built drawings.

#### **WARNING**

Some installation procedures call for using a megohmmeter (megger) to test all wiring. In this low voltage application it should not be necessary to use a megger for testing wire insulation unless there is a suspected problem or trying to test wiring in troubleshooting a ground fault condition. Proper use and setting of the megger is essential. The voltage being generated by the megger onto the wiring must not be greater than the voltage rating of the wire itself. Refer to the wire manufacturer for maximum testing voltage. **If using a megger, ALL field devices must be removed or not connected to circuit when the megger test is performed. Electronic devices are not rated for the type of voltage the megger will generate. Damage to these components could result.**

#### **Caution**

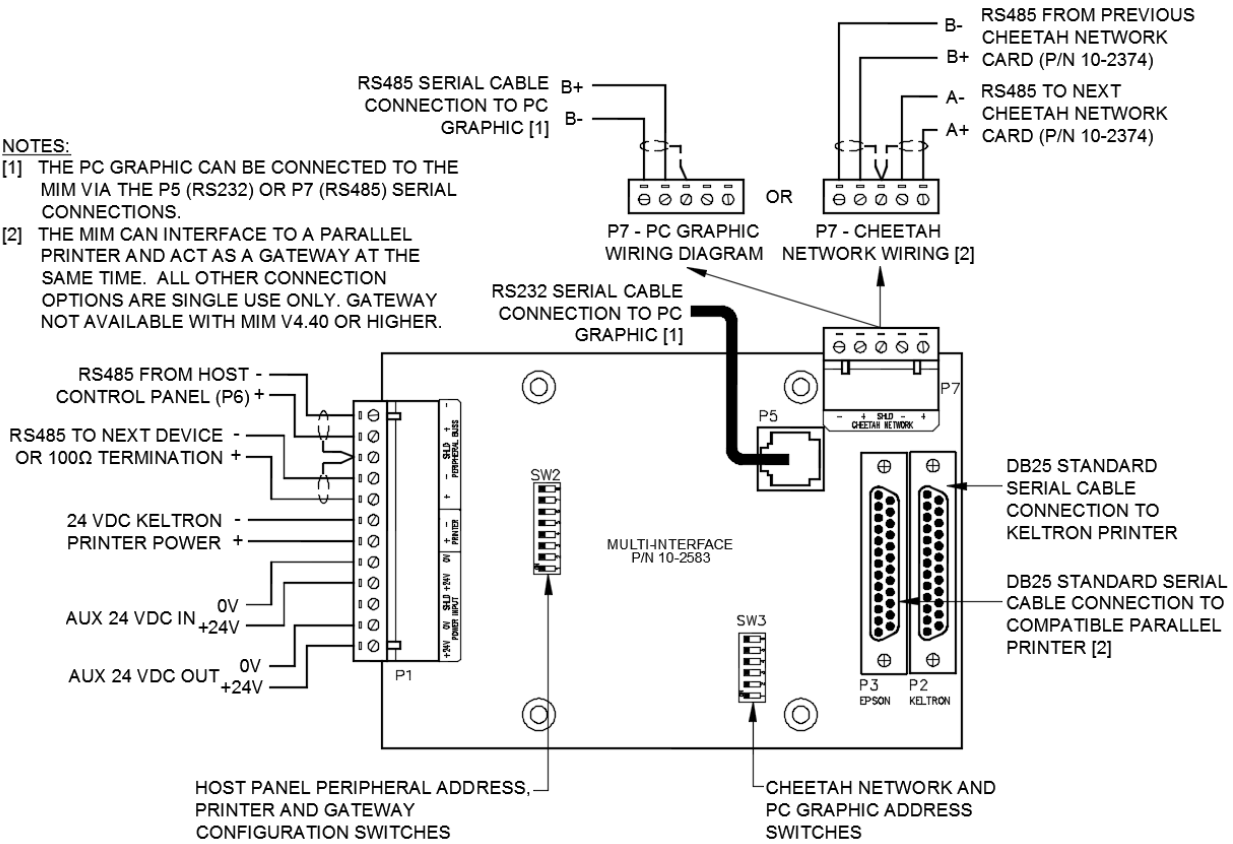
To ensure proper system operation after installation of the Multi-Interface Module, this device must be tested in accordance with NFPA 72. Re-acceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring.

## 6.4. CONNECT FIELD WIRING TO INTERNAL ELECTRONICS

While wearing grounding strap, remove terminal blocks and observe board markings for installation wiring polarities. Attach the wiring to the terminal blocks as indicated below. Insert the terminal blocks into the MIM circuit board.

**NOTES:**

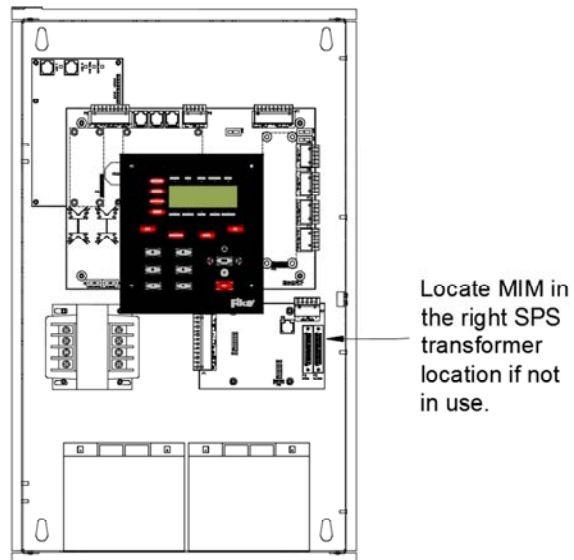
- [1] THE PC GRAPHIC CAN BE CONNECTED TO THE MIM VIA THE P5 (RS232) OR P7 (RS485) SERIAL CONNECTIONS.
- [2] THE MIM CAN INTERFACE TO A PARALLEL PRINTER AND ACT AS A GATEWAY AT THE SAME TIME. ALL OTHER CONNECTION OPTIONS ARE SINGLE USE ONLY. GATEWAY NOT AVAILABLE WITH MIM V4.40 OR HIGHER.



**Exhibit 8 Multi-Interface Module Wiring Diagram**

## 6.5. INSTALL MULTI-INTERFACE MODULE INTO BACKBOX

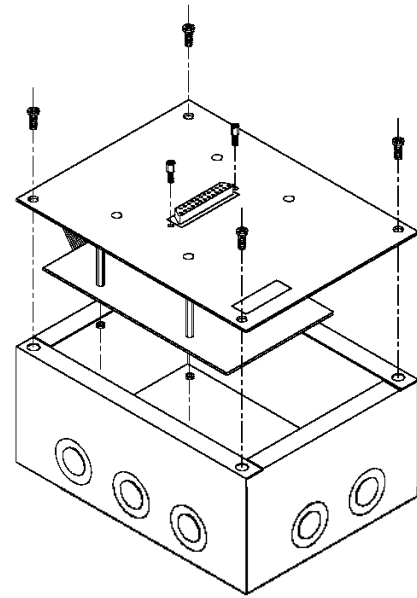
If using the Fire Alarm Control Panel spare SPS transformer location as shown in Exhibit 9, install the four mounting standoffs then attach the MIM to the standoffs with four mounting screws.



**Exhibit 9 Backbox Mounting Location**



If using the 10-069, install the cable between the desired MIM parallel port connector and the cover terminal. Attach the four standoffs to the threaded press studs on the cover. Attached the MIM circuit board to the standoffs using the four mounting screws, as shown in Exhibit 10.



**Exhibit 10 MIM Enclosure Mounting**

## 6.6. SET THE DIP SWITCHES THEN APPLY POWER

The MIM has two dip switch blocks (SW2 and SW3) that are used to set the peripheral address and functionality of the MIM. Switch **SW2** is an eight (8) position dip switch. Switch positions 1 – 6 on SW2 are used to set the peripheral address (2 - 32) of the MIM, as shown in Exhibit 11 below.

Binary Value	1	2	4	8	16	32
Dip Switch #	1	2	3	4	5	6
Address						
2		ON				
3	ON	ON				
4			ON			
5	ON		ON			
6		ON	ON			
7	ON	ON	ON			
8				ON		
9	ON			ON		
10		ON		ON		
11	ON	ON		ON		
12			ON	ON		
13	ON		ON	ON		
14		ON	ON	ON		
15	ON	ON	ON	ON		
16					ON	
17	ON				ON	
18		ON			ON	
19	ON	ON			ON	
20			ON		ON	
21	ON		ON		ON	
22		ON	ON		ON	
23	ON	ON	ON		ON	
24				ON	ON	
25	ON			ON	ON	
26		ON		ON	ON	
27	ON	ON		ON	ON	
28			ON	ON	ON	
29	ON		ON	ON	ON	
30		ON	ON	ON	ON	
31	ON	ON	ON	ON	ON	
32						ON

Default switch position is OFF

**Exhibit 11 Dip Switch Address Table**

**Note:** The peripheral address must match the address set for the device in the host control panel configuration, as detailed in Section 7, Programming.

## SETTING MIM FUNCTIONALITY

Dip switch positions 7 and 8 on **SW2** are used to set the functionality of the MIM, as shown in Exhibit 12 below. MIMs equipped with firmware V4.40 or higher no longer support Gateway operation; therefore dipswitch SW2-8 is not used.

SW2 FUNCTION	DIPSWITCH	
	7	8
Parallel Printer		
Keltron Printer	ON	
Parallel + Gateway		ON
Default switch position is OFF		

**Exhibit 12 MIM Functionality Table**

Switch **SW3** is a six (6) position dip switch that is used only when the MIM is to be utilized either as a Gateway to a Cheetah network or as an interface to a PC Graphic. The switches must be set as follows for proper MIM operation.

### GATEWAY INTERFACE

When used as a Gateway, switch positions 1 – 6 on **SW3** are used to set the MIM’s address (2 – 32) on the Cheetah’s panel network, as shown in Exhibit 11.

**Note:** Gateway operation is not supported by Cheetah Xi or CyberCat panels equipped with firmware V7.00 or higher or MIM firmware V4.40 or higher.

### PC GRAPHIC INTERFACE

When used as an interface to a PC graphic, switch positions 1 – 6 on both **SW2** and **SW3** must be set the same, as shown in Exhibit 13. Switch position 6 on both **SW2** and **SW3** must be set to ON to enable the MIM for PC mode operation. Verify proper switch settings; then apply power to the MIM.

**Note:** The MIM cannot be assigned to peripheral bus address 32, as switch position 6 is dedicated to enabling the MIM for PC mode operation.

Binary Value	1	2	4	8	16	32
Dip Switch #	1	2	3	4	5	6
Address						
2		ON				ON
3	ON	ON				ON
4			ON			ON
5	ON		ON			ON
6		ON	ON			ON
7	ON	ON	ON			ON
8				ON		ON
9	ON			ON		ON
10		ON		ON		ON
11	ON	ON		ON		ON
12			ON	ON		ON
13	ON		ON	ON		ON
14		ON	ON	ON		ON
15	ON	ON	ON	ON		ON
16					ON	ON
17	ON				ON	ON
18		ON			ON	ON
19	ON	ON			ON	ON
20			ON		ON	ON
21	ON		ON		ON	ON
22		ON	ON		ON	ON
23	ON	ON	ON		ON	ON
24				ON	ON	ON
25	ON			ON	ON	ON
26		ON		ON	ON	ON
27	ON	ON		ON	ON	ON
28			ON	ON	ON	ON
29	ON		ON	ON	ON	ON
30		ON	ON	ON	ON	ON
31	ON	ON	ON	ON	ON	ON
Default switch position is OFF						

**Exhibit 13 Dip Switch Address Table (PC Mode)**

## 7. PANEL PROGRAMMING

The Fike Multi-Interface Module (MIM) must be programmed into host control panel(s), either by using the applicable programming software (Cheetah Tracker or C-Linx) or directly through the control panel's configuration menus. This section walks you through each configuration option.

### 7.1. CHEETAH Xi/CYBERCAT PROGRAMMING WITH C-LINX

The following steps shall be used to program the MIM into the Cheetah Xi/CyberCat system using the C-Linx configuration software:

1. Startup the C-Linx program.
2. From the Getting Started screen, select the appropriate panel that the MIM will be connected too or select 'Open Existing Project' and locate the configuration file if working on an existing system.
3. From the Project Explorer screen, right click on Peripheral Devices in the system tree; then click/select the Multi-Interface. The module is added to the device list in the first available address.
4. From the peripheral device list, click/select the Multi-Interface to open the address and device type configuration screen; then use the arrow buttons to select the address number (2-32). Address must match the SW2 dip switch settings discussed in Section 6.6. Also select the desired 'Interface Type' for the MIM:
  - Cheetah Gateway
  - Serial Printer (Keltron printer)
  - Parallel Printer
  - Computer (PC Graphic)
5. Click 'OK' to accept the programming changes/additions.
6. From the Project Explorer screen, click on Main Board and then click the 'Show Properties' Icon to open the panel's main board configuration options.
7. Click on the Peripherals tab; then click on the row for the associated Peripheral to display the device settings at the bottom of the menu. From this menu you can change the custom message, zone number, and supervision state (Supervised/Unsupervised) for the peripheral device.
8. If using the MIM as a gateway interface to a PC graphic, you must set the peripheral message protocol to 'Message EXP' to allow proper transmission of system messages. From the Peripherals tab, click on the 'Message STD' button at the bottom of the menu to toggle it to 'Message EXP'.
9. Click OK when all properties are set on the peripherals.
10. Save the revised configuration and load into the panel per C-Linx procedures.

## 7.2. CHEETAH Xi/CYBERCAT PROGRAMMING THROUGH PANEL MENU

The following steps shall be used to program the MIM into the Cheetah Xi/CyberCat system using the control panel's configuration menus:

1. From the main panel display, press the **ESCAPE** key to access the Top Level Menu.
2. Press the **F4** key to enter the password entry screen. A valid level 3 password must be entered to allow access to the panel's configuration menus.
3. Press the **ESCAPE** key to return to the Top Level Menu; then press **F1** Configuration Menu 1; **F6** Configuration Menu 2; **F6** Configuration Menu 3.
4. From the Configuration Menu 3 screen, press the **F1** key to display the Peripheral Menu; then press **F1** to display the peripheral device configuration screen.

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

**Exhibit 14 Cheetah Xi/CyberCat Peripheral Configuration Screen**

5. Use the +/- buttons on the panel display to increment/decrement the peripheral device address to match the device being added.
6. Use the ◀ ▶ arrow keys on the panel display to move the cursor to the configuration fields; then select the type of connection, device supervision, and zone number (if applicable) for the device. You can also change the custom message for the device in the last line by moving the cursor under each letter; then use the +/- keys to change the field value.

**Note:** When configuring the panel for PC graphic interface, the peripheral type configuration will vary depending upon the panel's firmware. For panels with firmware v4.0 or older, the MIM must be configured for GATEWAY ONLY. For panels with firmware v4.1 or newer, the MIM must be configured for COMPUTER.

**Note:** The Zone field allows you to configure a remote display to display the pre-discharge countdown for the selected zone. Otherwise, leave set to 000.

7. Press the **ESCAPE** key to return to the Peripheral Menu; then press the **F4** key to display the Command Set screen.

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

**Exhibit 15 Cheetah Xi/CyberCat Command Set Screen**

8. Use the ◀ ▶ arrow keys on the panel display to move the cursor to the History Message field; then use the +/- keys to toggle the field value to EXP (expanded message protocol).
9. Press the **ESCAPE** key until the main system display appears on the screen.

**Note:** The address switch settings (SW2) for the peripheral device chosen in the installation process must match the programming set-up in the host panel.

### 7.3. CHEETAH PROGRAMMING WITH CHEETAH TRACKER

If used as a gateway, the MIM acts as a network card in the Cheetah classic network or can be used directly with a stand-alone single Cheetah. The following steps shall be used to program the Cheetah manager to monitor the new network connection address (2-32), using Cheetah Tracker software:

1. Start the Cheetah Tracker program.
2. From the Main Screen, click on Configure, Network, then Network ID to open the Network Configuration screen.
3. In the ID Number field, select the next ID for the Manager to supervise. ID number must match the switch settings set on SW3 of the MIM module. It will need to be the next available address in the Cheetah classic network.
4. Click 'OK' to accept the programming changes/additions.
5. From the Main Screen, click on File then Save to save the current Cheetah Tracker Configuration; then load the configuration into the panel per Cheetah Tracker procedures.

### 7.4. CHEETAH PROGRAMMING THROUGH PANEL MENU

1. From the main panel display, press the **ESCAPE** key to access the Top Level Menu.
2. Press the **F4** key to enter the password entry screen. A valid level 4 password must be entered.
3. Press **ESC** key to return to the Top Level Menu; then press **F6** Config Menu, **F3** System, **F6** Peripherals, **F1** Net ID to display the Configure Network ID screen.

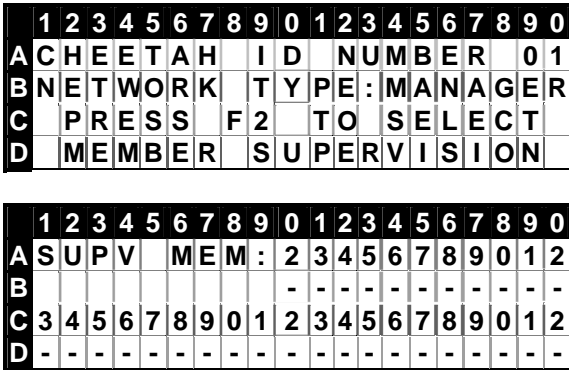


Exhibit 16 Network Configuration Screens

4. Select the Manager ID (01), press **F2** and have it supervise the next available network address by changing the '-' under the address to a 'Y' with the +/- button.

**Note:** Set SW3 positions 1-6 on the MIM to match the new network address chosen in the software or panel menu.

## 8. CHECK-OUT SYSTEM

Notify building and other necessary authorities that system testing is being performed. Check-out the system as recommended in NFPA 72. Activate each device and test full operation of control panel.

Utilize one of the Walk-Test features, if desired. Refer to Control Panel Operations Manual for detailed description of each Walk-Test Modes.

### Caution

To ensure proper system operation after installation of the Control System, this device must be tested in accordance with NFPA 72. Re-acceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring.

### 8.1. TRAIN PERTINENT PERSONNEL

Provide the building owner with a copy of the as-built drawings for the Fire System, a copy of this manual, and a training class detailed to the operation of their Fire Protection System. Indicate the name and address of your company in the section provided on the label inside the Panel door. Request the owner to maintain a service contract with your company. A properly serviced control system will more likely operate successfully when required to do so vs. an improperly serviced control system. Review the goals for the design of the Fire Protection System and detail how this system is providing these goals with proper service.

## 9. OPERATIONS

When an event occurs, the panel sends the data out the RS485 port to all the peripherals. The MIM can be supervised by the Cheetah Xi/CyberCat panel based on its configuration settings. If the MIM becomes disconnected, power is removed or the module stops communicating for any reason, the control panel produces the supervision trouble, 'Peripheral Missing'. The MIM must be configured for the desired peripheral type with the configuration and dip switches. Once this is selected, the MIM takes the data input from the control panel and passes it as needed to the desired peripheral. If configured for Gateway, the Cheetah also supervises the connection similar as it would for network operation. Should the connection between the Cheetah Manager and the MIM become disconnected, it will produce a network trouble on the Cheetah.

### 9.1. KELTRON (SERIAL) PRINTER OPERATION

The Keltron printer uses a 3 inch wide spool of paper for printing the events. When power is applied to the Printer and it comes on-line, and prints:

```
POWER ON VS90V2.8
```

If an event occurs, the printer prints a message similar to the following:

```
EVENT TYPE:  DETECTOR IN ALARM
MESSAGE:      1-230 INPUT DETECT
TIME & DATE:  08:53:15a 05/31/2006
PANEL: 001
CURRENT ALARMS:      0001
CURRENT SUPERVISORIES: 0000
CURRENT TROUBLES:    0000
TOTAL EVENT PRESENT: 0001
```

If the Cheetah Xi/CyberCat control panel is set to supervise the Keltron/Serial Printer, it will produce a trouble event for a paper trouble or a general mechanical trouble. If the cable between the MIM and the printer is missing or broken it will also produce a trouble event. All events are noted in section 12.0.

Refer to the Keltron Printer Installation and Operation Manual for further details. Refer to Appendix A for printer dipswitch settings.

### 9.2. PARALLEL PRINTER OPERATION

The parallel printer uses a tractor-feed paper for printing the events. When power is applied and it comes on-line it will print:

```
FIKE CORPORATION PRINTER INTERFACE
```

If an event occurs, the printer prints a message similar to the following:

```
EVENT TYPE: ALARM TYPE #1
MESSAGE: CUSTOM MESSAGE 1-003
TIME & DATE: 12:45:44P 05/31/2006
PANEL:003 LOOP:001 ADDRESS:003
```

*The remainder is shown on one line across:* CURRENT ALARMS: 0001 SUPERVISORIES:0000 TROUBLES:0000 TROUBLE EVENTS PRESENT:0004

If the Cheetah Xi/CyberCat control panel is set to supervise the Parallel Printer, it will produce a trouble event for paper issues, mechanical failure, or off-line (or cable missing/power off).

Refer to the printer Installation and Operation Manual for further details.

### 9.3. GATEWAY OPERATION

If the Cheetah Xi/CyberCat control panel is set to supervise the Gateway, it will pass all Cheetah event/state information for zones 1-100 to the Cheetah Xi/CyberCat and vice-versa if the Cheetah is set to supervise the virtual network node address of the MIM.

The following states are passed between the two systems for zones 1-100:

- Process
- Supervisory
- Trouble
- PreAlarm 1
- PreAlarm 2
- Alarm

The following states are **NOT** passed between the two systems:

- Pre-Discharge
- Release
- Abort
- Zone-Disable

**Note:** Gateway Operation is not available with Panel Firmware V7.00 and higher or MIM firmware V4.40 or higher.

In addition, if the control panel switches are programmed for global, the Reset, Silence, Acknowledge and Drill will function appropriately across the network. If operated from the Cheetah, the Cheetah Xi/CyberCat will display a “Gateway Reset (or Silence, Reset, Drill)” event in the history. When the Cheetah Xi/CyberCat receives an “all zone” event from the Cheetah, it will be referenced as zone 000. If operated from the Cheetah Xi/CyberCat, the Cheetah will display a “Network Reset” event.

**GATEWAY ADDRESSES** – The zone-state activations from the gateway are assigned to fixed loop and addresses to ensure the EVAX, graphics, and dialer have these values to operate with. These are the assignments for each state:

**ALARM** - Loop 4, address 254.

**SUPERVISORY** – Loop 4, address 253.

**TROUBLE** – Loop 4, address 252.

**PROCESS** – Loop 4, address 251.

**PRE ALARM 1** – Loop 4, address 250.

**PRE ALARM 2** – Loop 4, address 248.

**Note:** Zone Disable does not transmit across the gateway. If Zone Disable is required across gateway, use DPDT zone disable switch contact with Zone Disable inputs from both Cheetah Xi/CyberCat and Cheetah.

### 9.4. PC GRAPHIC (COMPUTER) OPERATION

As system events occur, they are routed to the PC graphic via the MIM interface and are annunciated on the LCD display. System events are displayed either in a tabular format or on building plans that indicate a precise location of the event. Annunciation method depends upon the monitoring software installed on the PC graphic.

The MIM (firmware v4.0) allows command and control functions, such as SILENCE, RESET, ACKNOWLEDGE, and DRILL, to be initiated from the PC graphic station.

**Note:** If the MIM is used for PC graphic interface in conjunction with a control panel equipped with firmware v4.0 or older, the panel must be configured for GATEWAY ONLY operation, but will operate as described above.



## 10. SERVICING

Inspection, Testing, and Maintenance shall be performed by qualified individuals. Fike provides a training class on their Control Systems for Factory Authorized Distributors. The training class provides Certification for Installation, Service and Maintenance of the Fike Panel. The certified individual performing the service must have also read this entire manual and understand the basics of Fire Alarm Systems, codes, and standards. Before proceeding with any testing, notify all building occupants and any parties monitoring the Fire Alarm System. Notification must also be performed at the conclusion of the testing.

## 11. MAINTENANCE

In order to have an optimum Fire Protection System completely functional at all times, it is recommended to follow NFPA 72 – “Testing Frequencies.” Check for sufficient printer ribbon. Other components may periodically require replacement or service as necessary. Indication for such service will be determined from troubleshooting and scheduled service.

## 12. TROUBLESHOOTING

The MIM will provide a 20 character description of an event at the Cheetah Xi/CyberCat. Each individual address can also have a 20 character custom message to aid in describing the device location and event. This custom message on the 2<sup>nd</sup> line of the display can refer to the peripheral custom message that caused the event or the panel custom message that caused the event (Press F1 to toggle). Refer to the Control System Product Manual for a complete description of events and the proposed tips for resolution of each. The events shown in Exhibit 17 are directly related to the MIM.

### 12.1. DIAGNOSTIC LEDS

There are two communication/diagnostic LEDs (D2 & D6) on the MIM as shown in Exhibit 17. The LEDs will flash with data transmissions sent/received. Watching these LEDs can help you troubleshoot communication problems.

1. Cheetah Xi/CyberCat LED (D2) flashes with communication between module and control panel.
2. Cheetah “Classic” LED (D6) flashes with communication between module and Cheetah control panel.

**Note:** There MUST be communication between Cheetah Xi/CyberCat for Cheetah LED to indicate communication for Cheetah “Classic.” If Cheetah Xi/CyberCat D2 LED is not active, the D6 LED will not indicate.

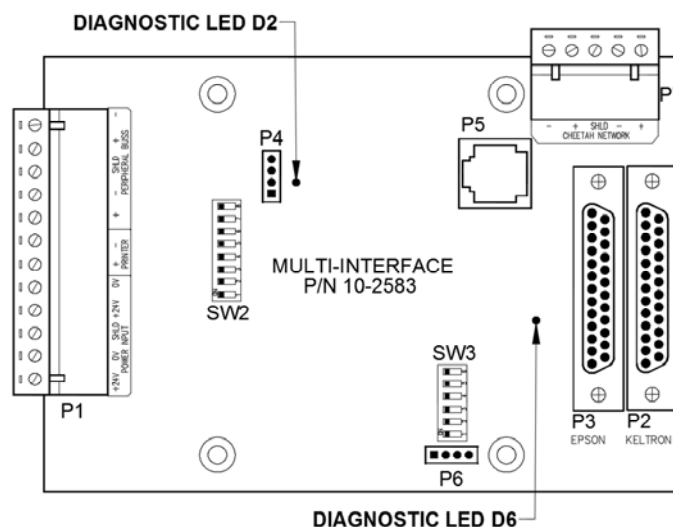


Exhibit 17 Diagnostic LEDs

**Exhibit 18 System Events Table**

<b>GENERAL MIM EVENTS</b>	<b>DESCRIPTION</b>	<b>RECOMMENDATIONS FOR RESOLUTION</b>
<b>PERIPH #aa MISSING</b>	RS485 Peripheral device #aa is not communicating with the main Cheetah Xi/CyberCat.	<ol style="list-style-type: none"> <li>1. Locate Peripheral Device #aa and determine if appropriate power is present and if the RS485 wire is connected appropriately.</li> <li>2. Make sure that the address is set as required by the installation instructions for the peripheral.</li> <li>3. Make sure the 100 ohm termination resistor is inserted only on the last device for the peripheral loop.</li> <li>4. Validate wiring is within the specifications.</li> </ol>
<b>PERIPH #aa RETURN</b>	RS485 Peripheral Device #aa has restored communication with the main Cheetah Xi/CyberCat.	<ol style="list-style-type: none"> <li>1. Determine what was changed to restore the communication.</li> </ol>

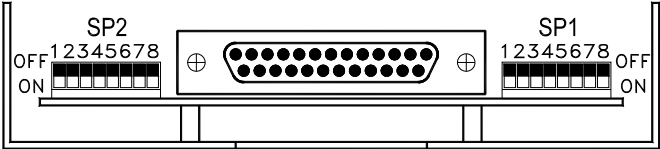
<b>PRINTER EVENTS</b>	<b>DESCRIPTION</b>	<b>RECOMMENDATIONS FOR RESOLUTION</b>
<b>PRINTER TROUBLE</b>	The Keltron printer has a paper trouble or mechanical trouble.	<ol style="list-style-type: none"> <li>1. Check the printer to determine if it has paper.</li> </ol>
<b>PRINTER CABLE TRBL</b>	The cable between the MIM and the Keltron printer is broken or disconnected.	<ol style="list-style-type: none"> <li>1. Check the cable between the MIM and the Keltron Printer. Make sure that it is fully seated in the connectors and it has not been pinched or broken.</li> <li>2. Make sure that power is applied to the printer.</li> </ol>
<b>PRINTER TROUBLE CLEAR</b>	The previous Printer Trouble has cleared and is now operating normal.	No action required.
<b>PRINTER PAPER TRBL</b>	The parallel printer has encountered a paper out, jam, etc.	<ol style="list-style-type: none"> <li>1. Check the printer for sufficient paper.</li> <li>2. Make sure the paper feeds through the printer with a page feed, etc.</li> </ol>
<b>PRINTER FAULT TRBL</b>	The parallel printer has a mechanical failure, cable missing, cable disconnected or power off.	<ol style="list-style-type: none"> <li>1. Check the printer for status and use the Printer manual for troubleshooting steps.</li> <li>2. Check power and communication cables for proper connection.</li> <li>3. Check status of power switch.</li> </ol>
<b>PRINTER OFF-LINE TRB</b>	The parallel printer is off-line.	<ol style="list-style-type: none"> <li>1. Check to make sure printer is on-line.</li> </ol>

<b>PC INTERFACE EVENTS</b>	<b>DESCRIPTION</b>	<b>RECOMMENDATIONS FOR RESOLUTION</b>
<b>COMPUTER MISSING</b> (Panels with firmware v4.1 and newer)	The MIM has detected a break in the line to the PC graphic that it is monitoring	<ol style="list-style-type: none"> <li>1. Verify that the cable or wire connection between the MIM and PC graphic is properly landed at each device</li> <li>2. Verify that the cable between the MIM and the PC is not damaged or broken.</li> </ol>
<b>COMPUTER RETURN</b> (Panels with firmware v4.1 and newer)	Communication between the MIM and the PC graphic that it is monitoring has been restored	No action required.
<b>PERIPHERAL ERROR 101</b> (Panels with firmware v4.0 and older)	The MIM has detected a break in the line to the PC graphic that it is monitoring	<ol style="list-style-type: none"> <li>1. Verify that the cable or wire connection between the MIM and PC graphic is properly landed at each device</li> <li>2. Verify that the cable between the MIM and the PC is not damaged or broken.</li> </ol>

GATEWAY EVENTS	DESCRIPTION	RECOMMENDATIONS FOR RESOLUTION
<b>GATE PROCES ACT Znnn</b>	The Cheetah panel network has a process state activation in zone nnn.	1. Locate the Cheetah panel that caused the activation and determine location from the custom message information on line 2 of the Process activation.
<b>GATE PROCES CLR Znnn</b>	The Cheetah panel network Process activation has cleared back to normal.	No action required.
<b>GATE SUPERV ACT Znnn</b>	The Cheetah panel network has a Supervisory state activation in zone nnn.	1. Locate the Cheetah panel that caused the activation and determine location from the custom message information on line 2 of the Supervisory activation.
<b>GATE SUPERV CLR Znnn</b>	The Cheetah panel network Supervisory activation has cleared back to normal.	No action required.
<b>GATE TROUBL ACT Znnn</b>	The Cheetah panel network has a Trouble state activation in zone nnn.	1. Locate the Cheetah panel that caused the activation and determine location from the custom message information on line 2 of the Supervisory activation.
<b>GATE TROUBL CLR Znnn</b>	The Cheetah panel network Trouble activation has cleared back to normal.	No action required.
<b>GATE PREAL1 ACT Znnn</b>	The Cheetah panel network has a PreAlarm 1 state activation in zone nnn.	1. Locate the Cheetah panel that caused the activation and determine location from the custom message information on line 2 of the Supervisory activation.
<b>GATE PREAL1 CLR Znnn</b>	The Cheetah panel network PreAlarm 1 activation has cleared back to normal.	No action required.
<b>GATE PREAL2 ACT Znnn</b>	The Cheetah panel network has a PreAlarm 2 state activation in zone nnn.	1. Locate the Cheetah panel that caused the activation and determine location from the custom message information on line 2 of the Supervisory activation.
<b>GATE PREAL2 CLR Znnn</b>	The Cheetah panel network PreAlarm 2 activation has cleared back to normal.	No action required.
<b>GATE ALARM Znnn</b>	The Cheetah panel network has an Alarm state activation in zone nnn.	1. Locate the Cheetah panel that caused the activation and determine location from the custom message information on line 2 of the Supervisory activation.
<b>GATEWAY RESET</b>	A Reset was activated on the Cheetah	1. Go to the Cheetah and determine who pressed the switch.
<b>GATEWAY SILENCE</b>	A Silence was activated on the Cheetah	1. Go to the Cheetah and determine who pressed the switch.
<b>GATEWAY ACKNOWLEDGE</b>	An Acknowledge was activated on the Cheetah	1. Go to the Cheetah and determine who pressed the switch.
<b>GATEWAY DRILL</b>	A Drill was activated on the Cheetah	1. Go to the Cheetah and determine who pressed the switch.

# APPENDIX A – KELTRON PRINTER SWITCH PACK SETTINGS

The Keltron 90 printer is equipped with two dipswitch packs located on the right side panel as shown in Exhibit 19. The dipswitches must be set as indicated in Exhibit 20 for proper communication with the host control panel.



**Exhibit 19 Switch Pack Locations**

Switch Pack #1 Settings							
1	2	3	4	5	6	7	8
OFF	OFF	OFF	OFF	ON	OFF	OFF	ON

Switch Pack #2 Settings							
1	2	3	4	5	6	7	8
OFF	OFF	OFF	OFF	ON	OFF	ON	OFF

**Exhibit 20 Dip Switch Settings**





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