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APPROVAL REPORT

PERIPHERAL MODULES AND DEAD-FRONT ENCLOSURES FOR CHEETAH, CHEETAH Xi, CHEETAH Xi 50, CYBERCAT 254 & 1016 AND CYBERCAT 50 FIRE ALARM CONTROL SYSTEMS

Prepared for:

Fike Corporation
704 South 10th St.
Blue Springs, MO 64013

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Authorized by:
Robert Martell, Assistant Vice President

FM Approvals
1151 Boston-Providence Turnpike
PO Box 9102
Norwood, MA 02062

PERIPHERAL MODULES AND DEAD-FRONT ENCLOSURES FOR CHEETAH, CHEETAH Xi, CHEETAH Xi50, CYBERCAT 254 & 1016 AND CYBERCAT 50 FIRE ALARM CONTROL SYSTEMS

from

FIKE CORPORATION
704 SOUTH 10TH ST.
BLUE SPRINGS, MO 64013

I INTRODUCTION

1.1 Fike Corporation requested updates to their Cheetah, Cheetah Xi, Cheetah Xi 50, Cybercat 254 & 1016 and Cybercat 50 Fire Alarm Control Systems as detailed below. The modifications and additional equipment were evaluated and tested for compliance with the standards listed in section 1.5.

1.1.1 The following new peripheral modules have been examined for use with the Fire Alarm Control Systems:

Product		Firmware	
Part Number	Description	Part Number	Version
10-2583	Multi-Interface PCB	10-2607	3.0
10-069	Multi-Interface Module Assembly		
10-2627	Ethernet PCB	10-2644	3.0
10-074	Ethernet Module Assembly		
10-2630	2 Button Remote Display	10-2650	3.0
10-2631	10 Button Remote Display	10-2655	3.1
10-2646	14 Button Remote Display	10-2656	3.1

1.1.2 Optional dead-front enclosures were examined for use with the controls. P/N 10-2519 (R/B/G) is for use with the Cheetah Xi and Cybercat 254 & 1016. P/N 10-2628 (R/B/G) is for use with the Cheetah Xi 50 and Cybercat 50.

1.1.3 The firmware version of the Cheetah Xi and Cybercat 254 & 1016 control panels listed in the Approval Guide has been updated from V1.3 to V3.0. This update is based on testing conducted with these control panels under this project and Project ID 3029134.

1.1.4 Some general corrections to the product listings in the Approval Guide have been made as indicated in section 1.6. The information for the Remote Display listed with the Cheetah Xi and Cybercat 254 & 1016 is being corrected. The correct part number is, and always has been, P/N 10-2321, firmware P/N 10-2343 V3.0, and was originally tested under Project ID 3014450. The firmware P/N and version for the Remote Display is being deleted from the Approval Guide listing as it is not necessary to include this detail for all peripheral devices listed with a fire alarm control system.

1.2 This Report may be freely reproduced only in its entirety and without modification.

1.3 This examination and approval is limited to the equipment listed and described in this report. Any other configurations described in the product literature are not considered approved.

1.4 The Fire Alarm Control Units are FM Approved under the following projects:

- 0B4A7.AY – Cheetah
- 3020297 – CyberCat 254 & 1016
- 3023436 – Cheetah Xi
- 3029134 – Cheetah Xi 50 and CyberCat 50

1.5 **Standards**

Title	Class Number	Date
National Fire Alarm Code	ANSI/NFPA 72	2002

1.6 **Listing:** The Fire Alarm Control System listings in the *Approval Guide*, a publication of FM Approvals, Fire Protection Book will be updated as shown below. Deletions are shown as ~~strikethrough~~, additions are shown in **bold underlined text**.

1.6.1 **Local Protective Signaling**

Cheetah Addressable Control System. Analog control panel with Software Revision Level 5.30 available in four part nos.: P/N 10-052-R-1 is a 120 V ac panel with a red 21.125 x 14.625 x 4 in. enclosure; P/N 10-052-G-1 is a 120 V ac panel with a grey 21.125 x 14.625 x 4 in. enclosure; P/N 10-052-R-2 is a 208/240 V ac panel with a red 21.125 x 14.625 x 4 in. enclosure; while P/N 10-052-G-2 is a 208/240 V ac panel with a grey 21.125 x 14.625 x 4 in. enclosure. Also available with 2-bay and 3-bay modular enclosures. Signaling line circuits can be configured to meet Styles 4 or 6. RS232 line meets (Class B) Style 3.5 when connected to a VESDA Laser PLUS Detector (Software Version 2.09.00), VESDA Laser Compact Smoke Detector (Software Version 3.01.00) and/or VESDA Laser Scanner (Software Version 2.14.03) via the HLI/VESDA Interface Module Assembly P/N 10-2277. Signaling line circuit RS485 meets (Class B) Style 3.5 when connected to Remote Display P/N 10-2276 (firmware P/N 10-2278 Rev. 3.10). The panel is compatible with P/Ns 63-1021 and 67-1032 analog addressable photoelectric and ionization type smoke sensors, 63-028 and 63-029 analog addressable photoelectric duct sensor, heat sensor P/N 60-1028 rated 135°F (37°C) [spacing guide: 20 by 20 ft (6.1 x 6.1 m) max] with the 6 in. P/N 63-1023 and 4 in. P/N 63-1020 sensor bases. In addition, the Cheetah control is compatible with fast response contact module P/Ns 55-019 and 55-020 with firmware 3130-00071 rev. 0.B, dual relay module P/N 55-023 with firmware 3130-00101 rev. 0.D, supervised output module P/N 55-021 with firmware 3130-00081 rev. 1.1, and solenoid releasing module P/N 55-022 with firmware 3130-00091 rev. 0.E (optional for auxiliary signaling). Up to eight Cheetah controls may be connected in a networking configuration utilizing (Class B) Style 4.0 signaling line circuit RS485 when network interface module 10-2292 is installed. Up to 32 Cheetah controls may be connected in a networking configuration utilizing Style 4, 6, or 7 signaling line circuit RS485 when network interface module 10-2374 is installed. **Cheetah controls may be connected in a networking configuration to Cheetah Xi, Cheetah Xi 50, CyberCat 254 & 1016 and CyberCat 50 controls utilizing Style 4 signaling line circuit RS485 when Multi-Interface Module 10-069 or 10-2583 is installed with network interface module 10-2292 or 10-2374.** 24 V dc batteries rated 7-65 AH are available to provide 24 hours (or 60 for auxiliary signaling) of emergency operation. (See also AUTOMATIC RELEASES FOR PREACTION AND DELUGE SPRINKLER SYSTEMS.)

CyberCat 254 & 1016 Fire Alarm Control Systems (P/N 10-064 & 10-066). Programmable addressable systems consisting of P/N 10-2525 and P/N 10-2472 CyberCat Controllers with V~~1.3~~**3.0** firmware for the 254 and 1016 models, respectively, within P/N 10-2483(R/B) enclosure **with optional dead front 10-2519 (R/B/G)**, and power supply with transformers P/N 02-10881 (120 Vac) or P/N 02-10882 (240 Vac). Signaling line circuit RS485 meets (Class B) Style 3.5 when connected to **the following** Remote Display **P/Ns:** ~~P/N 10-2276~~ **10-2321,** ~~(firmware P/N 10-2278 Rev. 3.10)~~ **10-2630, 10-2631, 10-2646**. **CyberCat 254 & 1016 controls may be connected in a networking configuration utilizing Style 4 signaling line circuit RS485 to the following: Cheetah controls when Multi-Interface Module 10-069 or 10-2583 is installed; Cheetah Xi, Cheetah Xi 50, CyberCat 50 or additional CyberCat 254 & 1016 controls when Ethernet Module P/N 10-074 or 10-2627 is installed. Multi-Interface Module 10-069 or 10-2583 communicates panel history to a Keltron or Epson printer.** The CyberCat 1016 with 10-2472 controller board provides two signaling line circuit (SLC) which meet NFPA Style 4, 6, or 7 wiring performance. A Supplemental Loop Module P/N 10-2473 adds two more SLC loops. Up to 254 addressable analog devices ~~maybe~~ **may be** connected to each SLC for a total of 1016 devices. The CyberCat 254 with P/N 10-2525 controller board provides a single signaling line circuit (SLC) which meets NFPA Style 4, 6, or 7 wiring performance. Up to 254 addressable analog devices ~~maybe~~ **may be** connected to the single SLC loop. The following addressable devices are compatible with the CyberCat fire alarm control: Photoelectric Smoke Sensor p/ns 63-1052 or 63-1058 ; Photo/135F Heat Combination Sensor p/ns 63-1053 or 63-1059; 135-190°F Fixed Temp and Rate of Rise Heat Sensor p/ns 63-1039 or 60-1040 (detector spacing not to exceed 30 x 30 ft); Ionization Smoke Sensor p/ns 67-033 or 67-034 for use with 6'' Sensor Bases p/ns 63-1054 or 63-1060, 4'' Sensor Bases p/ns 63-1055 or 63-1061, 6'' Sounder Base p/n 63-1064 or 6'' Relay Base p/n 63-1063; Mini Monitor Modules p/ns 55-045 or 55-050; Monitor Modules p/ns 55-041 or 55-046; Pull Station p/n 20-1063 or 20-1064; NAC Supervise Control Modules p/n 55-042 or 55-047; Relay Module p/n 55-043 or 55-048; Photo Duct Sensor Heads p/n 63-1057 or 63-1062; and Duct Detector Housing p/n 63-1056. Two notification appliance circuits (Class A or B) Style Y, or Z are provided. Each NAC is rated for 2.0 Amps output. RS232 circuit located on the controller communicates with the HLI/VESDA Interface Module Assembly P/N 10-2277 connected to a VESDA Laser PLUS Detector (Software Version 2.09.00), VESDA Laser Compact Smoke Detector (Software Version 3.01.00) and/or VESDA Laser Scanner (Software Version 2.14.03). Optional modules for use with the CyberCat include p/n 10-2204 RM4 Relay Module which provides 4 SPDT programmable relays rated 30 V dc @ 2A or 110 V ac @0.5A. The power supply provides a 6 amp, 24 V dc output to the control. This can be expanded to a 12 amp, 24 V dc output when p/n 10-2474-p Supplemental Power Supply is connected. 24 V dc batteries rated 18-75 AH are available to provide 24 (or 60 for auxiliary signaling) hours of emergency operation (See also CENTRAL STATION, REMOTE STATION, and AUTOMATIC RELEASES FOR PREACTION AND DELUGE SPRINKLER SYSTEMS.)

Cheetah Xi Fire Alarm Control Systems (P/N 10-068). Programmable addressable systems consisting of P/N 10-2542 Cheetah Xi Controller with V~~1.3~~**3.0**, within P/N 10-2541(R/G) enclosure **with optional dead front 10-2519 (R/B/G)**, and power supply with transformers P/N 02-10881 (120 Vac) or P/N 02-10882 (240 Vac). Signaling line circuit RS485 meets (Class B) Style 3.5 when connected to **the following** Remote Display **P/Ns:** ~~P/N 10-2276~~ **10-2321,** ~~(firmware P/N 10-2278 Rev. 3.10),~~ **10-2630, 10-2631, 10-2646**. **Cheetah Xi controls may be connected in a networking configuration utilizing Style 4 signaling line circuit RS485 to the following: Cheetah controls when Multi-Interface Module 10-069 or 10-2583 is installed; Cheetah Xi 50, CyberCat 254 & 1016, CyberCat 50 or additional Cheetah Xi controls when Ethernet Module P/N 10-074 or 10-2627 is installed. Multi-Interface Module 10-069 or 10-2583 communicates panel history to a Keltron or Epson printer.**. The Cheetah Xi with 10-2542 controller board provides two signaling line circuit (SLC) which meet NFPA Style 4, 6, or 7

wiring performance. A Supplemental Loop Module P/N 10-2473 adds two more SLC loops. Up to 254 addressable analog devices ~~maybe~~ **may be** connected to each SLC for a total of 1016 devices. The following addressable devices are compatible with the CyberCat fire alarm control: Photoelectric Smoke Sensor p/ns 63-1052 or 63-1058 ; Photo/135F Heat Combination Sensor p/ns 63-1053 or 63-1059; 135-190°F Fixed Temp and Rate of Rise Heat Sensor p/ns 63-1039 or 60-1040 (detector spacing not to exceed 30 x 30 ft); Ionization Smoke Sensor p/ns 67-033 or 67-034 for use with 6'' Sensor Bases p/ns 63-1054 or 63-1060 , 4'' Sensor Bases p/ns 63-1055 or 63-1061, 6'' Sounder Base p/n 63-1064 or 6'' Relay Base p/n 63-1063; Mini Monitor Modules p/ns 55-045 or 55-050; Monitor Modules p/ns 55-041 or 55-046; Pull Station p/n 20-1063 or 20-1064; NAC Supervise Control Modules p/n 55-042 or 55-047; Relay Module p/n 55-043 or 55-048; Releasing Control Module 55-043 or 55-048; Photo Duct Sensor Heads p/n 63-1057 or 63-1062; and Duct Detector Housing p/n 63-1056. Two notification appliance circuits (Class A or B) Style Y, or Z are provided. Each NAC is rated for 2.0 Amps output. RS232 circuit located on the controller communicates with the HLI/VESDA Interface Module Assembly P/N 10-2277 connected to a VESDA Laser PLUS Detector (Software Version 2.09.00), VESDA Laser Compact Smoke Detector (Software Version 3.01.00) and/or VESDA Laser Scanner (Software Version 2.14.03). Optional modules for use with the Cheetah Xi include p/n 10-2204 RM4 Relay Module which provides 4 SPDT programmable relays rated 30 V dc @ 2A or 110 V ac @ 0.5A. The power supply provides a 6 amp, 24 V dc output to the control. This can be expanded to a 12 amp, 24 V dc output when p/n 10-2474-p Supplemental Power Supply is connected. 24 V dc batteries rated 18-75 AH are available to provide 24 (or 60 for auxiliary signaling) hours of emergency operation (See also CENTRAL STATION, REMOTE STATION, and AUTOMATIC RELEASES FOR PREACTION AND DELUGE SPRINKLER SYSTEMS.)

Cheetah Xi 50 and Cyber Cat 50 Fire Alarm units are programmable addressable systems consisting of P/N 10-2622, P/N 10-2620 , respectively, Controller with V3.00 revision firmware, within P/N 10-2623(R/G) and10-2621 (R/B) enclosures **with optional dead front 10-2628 (R/B/G)**, and power supply with transformer P/N 02-10881. Signaling line circuit RS485 meets (Class B) Style 3.5 when connected to Remote Display P/N**s** 10-2321**,** ~~[firmware P/N 10-2343 Rev. 3.00]~~ **10-2630, 10-2631, 10-2646**. **Cheetah Xi controls may be connected in a networking configuration utilizing Style 4 signaling line circuit RS485 to the following: Cheetah controls when Multi-Interface Module 10-069 or 10-2583 is installed; Cheetah Xi 50, CyberCat 254 & 1016, CyberCat 50 or additional Cheetah Xi controls when Ethernet Module P/N 10-074 or 10-2627 is installed. Multi-Interface Module 10-069 or 10-2583 communicates panel history to a Keltron or Epson printer**. The Cheetah Xi 50 and Cyber Cat 50 with 10-2622 and P/N 10-2620, respectively controller board provide one signaling line circuits (SLC) which meet NFPA Style 4, 6, or 7 wiring. Up to 50 addressable analog devices ~~maybe~~ **may be** connected to the SLC. The following addressable devices are compatible with the Cheetah Xi 50 and CyberCat 50 fire alarm controls: Photoelectric Smoke Sensor p/ns 63-1052 or 63-1058 ; Photo/135F Heat Combination Sensor p/ns 63-1053 or 63-1059; 135-190°F Fixed Temp and Rate of Rise Heat Sensor p/ns 63-1039 or 60-1040 (detector spacing not to exceed 30 x 30 ft); Ionization Smoke Sensor p/ns 67-033 or 67-034 for use with 6" Sensor Bases p/ns 63-1054 or 63-1060 , 4" Sensor Bases p/ns 63-1055 or 63-1061, 6" Sounder Base p/n 63-1064 or 6" Relay Base p/n 63-1063; Mini Monitor Modules p/ns 55-045 or 55-050; Monitor Modules p/ns 55-041 or 55-046; Pull Station p/n 20-1063 or 20-1064; NAC Supervise Control Modules p/n 55-042 or 55-047; Relay Module p/n 55-043 or 55-048; Releasing Control Module 55-043 or 55-048; Photo Duct Sensor Heads p/n 63-1057 or 63-1062; and Duct Detector Housing p/n 63-1056. 2 notification appliance circuits (Class A or B) Style Y, or Z are provided. Each NAC is rated for 1.75 Amps output. RS232 circuit located on the controller communicates with the HLI/VESDA Interface Module Assembly P/N 10-2277 connected to a VESDA Laser PLUS Detector (Software Version 2.09.00), VESDA Laser Compact Smoke Detector (Software Version 3.01.00) and/or VESDA Laser Scanner (Software Version 2.14.03). The power supply provides a 5.25 amp, 24 V

dc output. 24 V dc batteries rated 18-75 AH are available to provide 24 (or 60 for auxiliary signaling) hours of emergency operation (See also CENTRAL STATION, REMOTE STATION, and AUTOMATIC RELEASES FOR PREACTION AND DELUGE SPRINKLER SYSTEMS.)

1.6.2 **Automatic Releases for Extinguishing Systems and Other Fire Protection Equipment**

Cheetah Xi Programmable Fire Alarm Control P/N 10-068 with V~~1.30~~**3.0** firmware connected to a Release Control Module P/N 55-043 or 55-048 to allow for release of extinguishing agents. Agent Release Module (ARM III) P/N 10-1832 is connected to the Release Control Module to release the agents. Up to 6 ARMs, or 2 12V solenoids, or 1 24V solenoid can be supported by the Release Module.

1.6.3 **Central Station Signaling Systems**

CyberCat 254 & 1016 Fire Alarm Control Systems (P/N 10-064 & 10-066). Programmable addressable systems consisting of P/N 10-2525 and P/N 10-2472 CyberCat Controllers with V~~1.30~~**3.0** firmware for the 254 and 1016 models, respectively, within P/N 10-2483(R/B) enclosure **with optional dead front 10-2519 (R/B/G)**, and power supply with transformers P/N 02-10881 (120 Vac) or P/N 02-10882 (240 Vac). Digital alarm Communicator Transmitter DACT p/n 10-2528 (Bosch Security Systems, Inc. Model D9068) mounted within the control's enclosure at the protected premises communicating via a signaling channel, established through the public switched telephone network, with two or more Bosch Security Systems, Inc. Model D6500, D6600 or Ademco 685 Digital Alarm Communicator Receivers (DACRs). DS9068 must be set for 24 hour test signal. DACT Programmer P/N10-2477 is needed for configuring the 10-2528 DACT. DS9068 must be configured for a delayed AC power loss signal to transmit to the DACR after six hours. 24 V dc batteries rated 18-75 AH are available to provide 24 hours of emergency. (See also LOCAL PROTECTIVE SIGNALING for details on the control).

Cheetah Xi Fire Alarm Control System (P/N 10-068). Programmable addressable system consisting of P/N 10-2542 Cheetah Xi Controller with V~~1.30~~**3.0**, within P/N 10-2541(R/G) enclosure **with optional dead front 10-2519 (R/B/G)**, and power supply with transformers P/N 02-10881 (120 V ac) or P/N 02-10882 (240 V ac). Digital alarm Communicator Transmitter DACT P/N 10-2528 (Bosch Security Systems, Inc. Model D9068) mounted within the control's enclosure at the protected premises communicating via a signaling channel, established through the public switched telephone network, with two or more Bosch Security Systems, Inc. Model D6500, D6600 or Ademco 685 Digital Alarm Communicator Receivers (DACRs). DS9068 must be set for 24 hour test signal. DACT Programmer P/N10-2477 is needed for configuring the 10-2528 DACT. DS9068 must be configured for a delayed AC power loss signal to transmit to the DACR after six hours. 24 V dc batteries rated 18-75 AH are available to provide 24 hours of emergency. (See also LOCAL PROTECTIVE SIGNALING for details on the control).

Cheetah Xi 50 and Cyber Cat 50 Fire Alarm Control units are programmable addressable systems consisting of P/N 10-2622 and 10-2620, respectively Controller with V3.00, within P/N 10-2623(R/G) and 10-2621 (R/B) enclosures **with optional dead front 10-2628 (R/B/G)**, and power supply with transformers P/N 02-10881. Digital alarm Communicator Transmitter DACT p/n 10-2528 (Bosch Security Systems, Inc. Model D9068) mounted within the control's enclosure at the protected premises communicating via a signaling channel, established through the public switched telephone network, with two or more Bosch Security Systems, Inc. Model D6500, D6600 or Ademco 685 Digital Alarm Communicator Receivers (DACRs). DS9068 must be set for 24 hour test signal. DACT Programmer P/N10-2477 is needed for configuring the 10-2528 DACT. DS9068 must be configured for a delayed AC power loss signal to transmit to the DACR

after six hours. 24 V dc batteries rated 18-75 AH are available to provide 24 hours of emergency. (See also LOCAL PROTECTIVE SIGNALING for details on the control).

1.6.4 **Remote Station Signaling Systems**

CyberCat 254 & 1016 Fire Alarm Control Systems (P/N 10-064 & 10-066). Programmable addressable systems consisting of P/N 10-2525 and P/N 10-2472 CyberCat Controllers with V~~1.30~~**3.0** firmware for the 254 and 1016 models, respectively, within P/N 10-2483(R/B) enclosure **with optional dead front 10-2519 (R/B/G)**, and power supply with transformers P/N 02-10881 (120 Vac) or P/N 02-10882 (240 Vac). The control is equipped with integral digital alarm control transmitters (DACT) P/N 10-2476 (Bosch Security Systems, Inc. Model D9068) reporting to any two or more of the following models Bosch Security Systems, Inc. Model D6500, D6600 or Ademco 685 Digital Alarm Communicator Receivers (DACRs) located at an a constantly attended location such as a public fire station. The connection between the controls and receivers shall be via a signaling channel established through the public switched telephone network. Alternatively, for auxiliary signaling and remote station signaling, P/N 10-2254 RPM Reverse Polarity Module provides reverse polarity type service. In addition, P/N 10-2413 city tie interface provides the ability to operate a local energy master-box. 24 V dc batteries rated 18-75AH are available to provide 60 hours of emergency operation. It is essential that there be complete cooperation between the protected property and the remote station personnel; otherwise, substandard service may result regardless of equipment performance. See LOCAL PROTECTIVE SIGNALING for Detailed description of the controls and their accessories.

Cheetah Xi Fire Alarm Control System (P/N 10-068). Programmable addressable system consisting of P/N 10-2542 Cheetah Xi Controllers with V~~1.30~~**3.0** firmware, within P/N 10-2541(R/G) enclosure **with optional dead front 10-2519 (R/B/G)**, and power supply with transformers P/N 02-10881 (120 Vac) or P/N 02-10882 (240 V ac). The control is equipped with integral digital alarm control transmitters (DACT) p/n 10-2476 (Bosch Security Systems, Inc. Model D9068) reporting to any two or more of the following models: Bosch Security Systems, Inc. Model D6500, D6600 or Ademco 685 Digital Alarm Communicator Receivers (DACRs) located at an a constantly attended location such as a public fire station. The connection between the controls and receivers shall be via a signaling channel established through the public switched telephone network. Alternatively, for auxiliary signaling and remote station signaling, p/n 10-2254 RPM Reverse Polarity Module provides reverse polarity type service. In addition, p/n 10-2413 city tie interface provides the ability to operate a local energy master-box. 24 V dc batteries rated 18-75 AH are available to provide 60 hours of emergency operation. It is essential that there be complete cooperation between the protected property and the remote station personnel; otherwise, substandard service may result regardless of equipment performance. See LOCAL PROTECTIVE SIGNALING for Detailed description of the controls and their accessories.

Cheetah Xi 50 and CyberCat 50 Fire Alarm Control Systems units are programmable addressable systems consisting of [P/N 10-2622 and P/N 10-2620] Controllers with V3.00 firmware, within ~~[~~P/N 10-2483(R/B~~]~~ enclosure **with optional dead front 10-2628 (R/B/G)**, and power supply with transformer P/N 02-10881. The units are equipped with integral digital alarm control transmitters (DACT) p/n 10-2476 (Bosch Security Systems, Inc. Model D9068) reporting to any two or more of the following models: Bosch Security Systems, Inc. Model D6500, D6600 or Ademco 685 Digital Alarm Communicator Receivers (DACRs) located at an a constantly attended location such as a public fire station. The connection between the controls and receivers shall be via a signaling channel established through the public switched telephone network. In addition, p/n 10-2413 city tie interface provides the ability to operate a local energy master-box. 24 V dc batteries rated 18-75 AH are available to provide 60 hours of emergency operation. It is essential that there be complete cooperation between the protected property and the remote

station personnel; otherwise, substandard service may result regardless of equipment performance. See LOCAL PROTECTIVE SIGNALING for Detailed description of the controls and their accessories.

1.6.5 **Automatic Releases for Preaction and Deluge Sprinkler Systems**

CyberCat 254 and 1016 Fire Alarm Control Systems (P/N 10-064 & 10-066). Programmable addressable systems consisting of P/N 10-2525 and P/N 10-2472 CyberCat Controllers with V~~1.30~~**3.0** firmware for the 254 and 1016 models, respectively, within P/N 10-2483(R/B) enclosure **with optional dead front 10-2519 (R/B/G)**, and power supply with transformers P/N 02-10881 (120 Vac) or P/N 02-10882 (240 Vac). Controller connects with P/N 55-042 or 55-047 Supervised Control Module (SCM) to provide peer-to-peer digital communication protocol between the conventional notification appliance circuits and the CyberCat signaling line circuit. In addition, the SCM operates solenoids rated up to 2 Amps @ 24 V dc. Controller is also compatible with P/N 55-052 and P/N 55-053 Releasing Control Modules (RCM). The RCM supervises solenoid of a sprinkler water control valve and is connected to the controller SLC loop. For Approved combinations of solenoid and water control valves, refer to the Automatic Water Control Valve listings that follow. 24 V dc batteries rated 18-75 AH are available to provide 90 hours of emergency operation. [See further description under LOCAL PROTECTIVE SIGNALING].

Cheetah Xi Fire Alarm Control System (P/N 10-068). Programmable addressable system consisting of P/N 10-2542 Cheetah Xi Controller with V~~1.30~~**3.0**, within P/N 10-2541(R/G) enclosure **with optional dead front 10-2519 (R/B/G)**, and power supply with transformers P/N 02-10881 (120 Vac) or P/N 02-10882 (240 Vac). Controller connects with p/ns 55-042 or 55-047 Supervised Control Module (SCM) to provide peer-to-peer digital communication protocol between the conventional notification appliance circuits and the CyberCat signaling line circuit. In addition, the SCM operates solenoids rated up to 2 Amps @ 24 V dc. In addition, Release Control Module p/ns 55-042 or 55-047 operates solenoids rated up to 2 Amps @24 V dc. For Approved combinations of solenoid and water control valves, refer to the Automatic Water Control Valve listings that follow. 24 V dc batteries rated 18-75 AH are available to provide 90 hours of emergency operation. [See further description under LOCAL PROTECTIVE SIGNALING].

Cheetah Xi 50 and Cyber Cat 50 Fire Alarm Control units are programmable addressable systems consisting of [P/N 10-2622, P/N 10-2620], respectively Controller with V3.00, within P/N 10-2623(R/G) and 10-2621 (R/B) enclosures **with optional dead front 10-2628 (R/B/G)**, and power supply with transformers P/N 02-10881. Controller connects with p/ns 55-042 or 55-047 Supervised Control Module (SCM) to provide peer-to-peer digital communication protocol between the conventional notification appliance circuits and the signaling line circuit. In addition, the SCM operates solenoids rated up to 2 Amps @24V dc. In addition, Release Control Module [p/ns 55-042 or 55-047] operates solenoids rated up to 2 Amps @24 V dc. For Approved combinations of solenoid and water control valves, refer to the Automatic Water Control Valve listings that follow. 24 V dc batteries rated 18-75 AH are available to provide 90 hours of emergency operation. [See further description under LOCAL PROTECTIVE SIGNALING].

II DESCRIPTION

2.1 **General** – The peripheral modules described below are all ancillary devices that can be connected to the Fike Control System via an RS485 connection. All electronics are rated 32°F - 120°F (0°C – 49°C) 93% relative humidity. The modules are powered by 24Vdc nominal (15 – 30Vdc) from the Fike control panel or a battery backed 24Vdc power supply listed by an NRTL to NFPA 72 for fire alarm service as specified in the Installation and Operating Instructions.

2.2 **Ethernet Module** – The Fike Ethernet Module (P/N 10-2627) allows networking between CyberCat and Cheetah Xi panels located in different buildings to provide annunciation at a central location. The module can be located inside the main controller (P/N 10-2627) or in a separate box (P/N 10-074) as required. Current ratings specified in the Installation and Operating Instructions are 97mA for normal standby and 134mA in Alarm.

2.3 **Multi-Interface Module** – The Fike Multi-Interface Module (P/N 10-2583) can provide three different interface connections: (1) Gateway (Cheetah Xi/CyberCat to Cheetah); (2) Parallel Printer (Epson) IEEE 1284 standard parallel printer; (3) Serial Printer (Keltron 90-series). The module can be located inside the main controller (P/N 10-2583) or in a separate box (10-069) as required. Current ratings specified in the Installation and Operating Instructions are 205mA for normal standby, 205mA for Alarm when used as a Gateway or with the Epson printer and 1.2A for Alarm when used with the Keltron printer.

2.4 **2 Button Remote Display** – The Fike Remote Display Exp protocol 2-button (P/N 10-2630) provides a 4x20 character LCD and five status LED's to provide immediate system condition from a remote location. This module has display capabilities only and is designed to be mounted in a 3-gang masonry box (P/N 02-11811 or 02-11892). It can also be fit to a standard 3-gang electrical or masonry box, gangable Raco 400 series or equivalent. Current ratings specified in the Installation and Operating Instructions are 43mA for normal standby and 125mA in Alarm.

2.5 **10 Button Remote Display** – The Fike Remote Display Exp protocol 10-button (P/N 10-2631) provides a 4x20 character LCD and five status LED's to provide immediate system condition from a remote location. It also has the capability of performing 2-way communications via the Reset, Silence, Acknowledge and Drill buttons and is key-locked for security of functionality buttons. The module is designed to be mounted in a 4-gang masonry box (P/N 02-2123) or a Space Age ESB back box (P/N 02-11893). It can also be fit to a standard 4-gang electrical or masonry box, gangable Raco 400 series or equivalent. Current ratings specified in the Installation and Operating Instructions are 38mA for normal standby and 131mA in Alarm.

2.6 **14 Button Remote Display** – The Fike Remote Display Exp protocol 14-button (P/N 10-2646) provides a 4x20 character LCD and five status LED's to provide immediate system condition from a remote location. It also has the capability of bi-directional communications of Programmable Initiating functions such as Silence, Reset, Acknowledge, Drill, IR Tool Enable, Walk Test, Zone Disable, Process Input and System Step events. The cover is key-locked for security of functionality buttons. The module is designed to be mounted in a 5-gang masonry box (P/N 02-4881) or a Space Age ESB back box (P/N 02-11894). It can also be fit to a standard 5-gang electrical or masonry box, gangable Raco 400 series or equivalent. Current ratings specified in the Installation and Operating Instructions are 36mA for normal standby and 135mA in Alarm.

2.7 **Dead-Front Enclosures** – The Dead-front enclosures are mounted inside the existing control panel enclosure back boxes using four self tapping screws. The dead-fronts allow accessibility to the keypad for programming and controlling when the key-locked enclosure door is open, while

preventing accessibility to all wiring and electronics. Installation of the dead-front enclosures does not require the removal of any fire alarm system hardware. They are available in red, black or gray coloring, which is indicated by R, B or G following the part number.

III EXAMINATIONS AND TESTS

3.1 Several fire alarm control systems were configured with the Ethernet Module, Remote Module and Remote Displays, as well as a Keltron or Epson printer and other devices required for the system operation, to accomplish the necessary testing. The control units consisted of the Cheetah (v.5.3), Cheetah Xi (v.3.0), CyberCat 245 & 1016 (v.3.0) and CyberCat Xi (v.3.0). All peripheral modules received power from the control panels. A detailed list of the specific products used for each test is in the Project Data Record (PDR). The samples were considered to be representative of the product line and were examined, tested, and compared to the manufacturer's drawings. Most testing was conducted at Fike Corporation's Blue Springs, MO facility with some additional testing conducted at FM Approvals' facility in Norwood, MA. All data is on file at FM Approvals along with other documents and correspondence applicable to this program.

3.2 **Normal Operation Testing** – It was verified that the controls continued to function as previously tested with the addition of the peripheral modules. Alarms continued to be annunciated within 10 seconds and Troubles annunciated within 200 seconds. All conditions are reported to the printer and displayed on the LCD of each of the controls and peripheral modules. This was considered satisfactory.

3.3 **Device Compatibility** – The system configuration was tested to verify compatibility between the modules and control panels. A Trouble condition on any of the peripheral modules displays on the panel LCD as the peripheral number with the trouble condition. In the multi-panel configuration, only one panel has Silence capability. An Alarm on a single panel is annunciated on other panels.

3.3.1 The 10-Button and 14-Button Remote Displays were tested when connected to a complete Fire Alarm Control system to verify that only a single station may be in control of the system at any given time. This is accomplished by indication on the station LCD's. When a functions is performed on a Remote Display, the peripheral number assigned to that remote display and the specific function are displayed on all other LCD's. This was considered satisfactory.

3.4 **Line Supervision** – The RS485 circuit and power circuit of the control panels, when connected to each module, were tested to verify that they met performance requirements of Class B, Style 4 as described in ANSI/NFPA 72 2002 Edition, Table 6.6.1. Open, ground, and wire-to-wire short, faults were introduced into the circuits. All trouble, alarm, and supervisory signals were annunciated appropriately and the appropriate message was displayed on the panels and modules and reported to the printers. This was considered satisfactory.

3.4.1 **Printer Supervision** – While not intended to meet circuit supervision requirements as described in ANSI/NFPA 72 2002 Edition, Tables 6.5, 6.6.1 or 6.7, the printer circuits were tested to confirm conditions were reported and displayed to the controls and modules. The appropriate Trouble condition was displayed on the controls and modules when power to the printer was turned-off or removed, no paper was found in the printer and when the printer cable was removed. This was considered satisfactory for supplemental equipment.

3.5 **Voltage Variations** – Normal operation of each module was verified over the manufacturer's specified voltage range of 15Vdc to 30Vdc. The modules and printers continued to function normally and report Alarm and Trouble conditions. This was considered satisfactory.

3.6 **Environmental Conditioning** – Tests were conducted that verified proper operation of the modules in standby, alarm, and trouble modes after exposure to various ambient conditions. The peripheral modules were conditioned for a minimum of four hours at an ambient temperature of 32°F (0°C), four hours at an ambient of 120°F (49°C), and twenty-four hours at an ambient of 100°F (38°C) and a relative humidity of 93%. The modules performed properly when tested for normal operation by initiating alarm and trouble conditions, which were annunciated properly at the end of each environmental exposure period. This was considered satisfactory.

3.7 **Vibration** – The modules functioned normally during and after being subjected to a four-hour vibration test with a total displacement of 0.02 in (0.5mm) and a sweep frequency of 10-30-10 at two cycles per minute on the transmitter. This was considered satisfactory.

3.8 **DACT Protective Signaling Test** – Tests were conducted to verify proper operation of the Digital Alarm Communication Transmitter circuit with the peripheral modules connected to the controls. Alarm and Trouble conditions were introduced to the fire alarm control system through the Multi Interface Module and through the Ethernet Module. All required alarm and trouble conditions were indicated on the alarm control display as well as the modules. The DACT obtained a dial tone, contacted the Digital Alarm Communication Receiver (DACR) and transmitted a signal within 90 seconds of an alarm signal being initiated. This was considered satisfactory and no other tests were deemed necessary for the DACT.

3.9 **Electrical Shock Examination** – The Ethernet and Multi-Interface Modules are installed either in the fire alarm control panel's key-locked enclosure or in a separate enclosure with a tool-secured cover. The Remote Displays are installed in a tool-secured enclosure. The dead-front enclosures are tool-secured and do not allow access to wiring or electronics. This was considered satisfactory.

3.10 **Protective Grounding** – No testing was required as the modules operate at 30Vdc or below and do not require protective grounding. This was considered satisfactory.

3.11 **Equipment Load Rating** – Testing was conducted on each module when powered over the voltage range of 15Vdc and 30Vdc. Current was measured in normal standby and Alarm conditions and did not exceed the manufacturer's specifications. This was considered satisfactory.

3.12 **Dielectric Strength** – Testing was conducted on all modules between input terminals and ground, and between output terminals and ground. A test potential of 500Vdc was applied for one minute with no leakage or breakdown. This was considered satisfactory.

3.13 **Surge Transient Test** – Each input and output circuit of the modules was subjected to four transient waveforms having an initial peak level of: 100, 500 1,000, and 2,400 Vdc, as delivered into a 200 ohm load. The equipment remained operational during and after these tests. This was considered satisfactory.

3.14 **Extraneous Transients** – A sample system was tested by exposure to the following transient sources. All results were satisfactory in that the system produced no false alarms or trouble signals in the presence of these extraneous transients and it responded satisfactorily to alarm and trouble conditions in the presence of these extraneous transients.

3.14.1 Radio frequency transmissions with radiation power levels equivalent to 5 Watts at 6in. (0.15m) in the 27 MHz, 150-174 MHz, 450-467 MHz, 850-870MHz, and 900-920 MHz bands.

3.14.2 A sequential arc (Jacob's ladder) generated between two 15in. (0.4m) long, No. 14 AWG (2.1 mm solid copper conductors attached rigidly in a vertical position to the output terminals of an oil burner ignition transformer rated 120V 60 HZ primary; 10,000 V 60 Hz, 23mA secondary. The two wires were formed in a taper starting with a 1/8in (3.2mm) separation at the bottom (adjacent to terminals) and extending to 1.25in (32mm) at the top.

3.14.3 Operation of an electric drill rated 120Vac, 60 Hz, 2.5 A.

3.14.4 Operation of a soldering gun rated 120 Vac, 60 Hz, 2.5 A.

3.14.5 Operation of a 6in (150mm) diameter solenoid-type vibrating bell with no suppression and rated 24 Vdc.

3.15 **Dead-Front Enclosure Evaluation** – Sample control panels with the dead-front enclosure installed were visually inspected to confirm all wiring and electronics are not accessible. No testing was required. This was considered satisfactory.

IV MARKING

The following information appears on the inside cover of the control panels. No additional marking is required on these products.

- Manufacturer's name and manufacturing location
- Model name and P/N
- System Operating Information
- Installation Manual reference
- The FM Approvals mark

V REMARKS

5.1 Installations shall comply with the requirements of the relevant edition of the National Electrical Code (ANSI/NFPA 70).

5.2 Installations shall comply with the manufacturer's instruction manuals.

VI FACILITIES AND PROCEDURES AUDIT

The manufacturing site in Blue Springs, MO is subject to follow-up audit inspections. The facilities and quality control procedures in place have been found to be satisfactory to manufacture product identical to that examined and tested as described in this report.

VII MANUFACTURERS RESPONSIBILITIES

7.1 Documentation considered critical to this Approval is on file at FM Approvals and listed in the Documentation File, Section VIII of this report. No changes of any nature shall be implemented unless notice of the proposed change has been given and written authorization obtained from FM

Approvals. The Approved Product Revision Report, Form 797, shall be forwarded to FM Approvals as notice of proposed changes.

7.2 As part of the listing requirements, FM Approvals requires assurance that subsequent systems produced will present the same quality and reliability as the system examined. The manufacturer shall maintain a Quality Assurance Program, which includes as a minimum: incoming, in-process and final inspection and testing; equipment calibration; and drawing change control. The specific procedures used to control quality are best determined by the manufacturer.

7.3 The manufacturer shall provide installation, operating, and maintenance manual(s) with each system.

VIII DOCUMENTATION

8.1 The following drawings describe the Ethernet Module, Multi-Interface Module and Remote Displays and are filed under Project ID 3029147:

Drawing No.	Revision Level	Drawing Title
02-11873	N/C	Keypad Overlay - 2 Button display
06-367	1	Manual - Multi Interface Module
06-388	0	Manual - Ethernet Module
06-393	1	Manual - 2 Button Display
06-394	0	Manual - 10 Button Display
06-395	0	Manual - 14 Button Display
10-069	A	Enclosure Assembly - Multi Interface Module
10-074	N/C	Enclosure Assembly - Ethernet Module
10-2519-C	B	Deadfront Kit Cybercat
10-2583	N/C	PCB Assembly - Multi Interface Module
10-2583-P sht 1of1	B	PCB Assembly - Multi Interface Module
10-2583-P sht 2of2	B	PCB Assembly - Multi Interface Module
10-2583-P sht.3of3	B	PCB Assembly - Multi Interface Module
10-2583-SCH	N/C	Schematic - Multi Interface Module
10-2607	B	Firmware V3.0 - Multi Interface Module
10-2627	N/C	Assembly - Ethernet Module
10-2627-P	N/C	PCB Assembly - Ethernet Module
10-2627-SCH	N/C	Schematic - Ethernet Module
10-2628-C	N/C	Kit, Deadfront 50 Point Enclosure
10-2630	N/C	2 Button Remote Display
10-2630-P	C	Assembly - 2 Button Display
10-2631	N/C	10 Button Remote Display
10-2631-P	N/C	Assembly - 10 Button Display
10-2633	B	PCB Assembly - Remote Display Controller
10-2633-SCH	N/C	Schematic - Remote Display Controller
10-2634	N/C	PCB Assembly - 2 Button Display
10-2634-SCH	N/C	Schematic - 2 Button Display
10-2644	N/C	Firmware V3.00 - Ethernet Module
10-2645	N/C	PCB Assembly - 14 Button Display
10-2645-SCH	N/C	Schematic - 14 Button Display
10-2646	N/C	14 Button Remote Display

Drawing No.	Revision Level	Drawing Title
10-2646-P	N/C	Assembly - 14 Button Display
10-2647	N/C	PCB Assembly - 10 Button Display
10-2650	B	Firmware V3.00 - 2 Button Display
10-2655	A	Firmware V3.10 - 10 Button Display
10-2656	N/C	Firmware V3.10 - 14 Button Display
70-1960-X	B	Deadfront Panel Cybercat
70-2044-X	N/C	Deadfront Kit 50 Point Panel

8.2 The following drawings describe the firmware updates for the previously approved control panels filed under Project ID 3020297

Drawing No.	Previous Rev.	New Rev.	Drawing Title
10-2521	D	E	Firmware V3.0 - Cybercat/Cheetah Xi SLC
10-2522	D	E	Firmware V3.0 - Cybercat 1016 Main Bd.
10-2606	-	B	Firmware V3.0 - Cybercat 254 Main Bd.

8.2 The following drawing describes the firmware updates for the previously approved control panel filed under Project ID 3023436

Drawing No.	Previous Rev.	New Rev.	Drawing Title
10-2567	-	C	Firmware V3.0 - Cheetah Xi Main Bd.

IX CONCLUSION

The equipment listed in section 1.6 meets FM Approvals requirements. Since a duly signed Master Agreement is on file for this manufacturer, Approval is effective the date of this report.

EXAMINATION AND TESTING BY: Cheryl Gagliardi

PROJECT DATA RECORD: 3029147

ATTACHMENTS:
06-367, pgs. 3 – 7; Multi-Interface Interface Instructions
06-388, pgs. 3 – 7; Ethernet Instructions
06-393, pgs. 3 – 6; 2-Button Display Instructions
06-394, pgs. 3 – 6; 10-Button Display Instructions
06-395, pgs. 3 – 6; 14-Button Display Instructions

REPORT BY:

Cheryl A. Gagliardi
Cheryl A. Gagliardi
Senior Engineer
Electrical Systems

REPORT REVIEWED BY:

Robert Elliott
Robert Elliott
Senior Engineering Specialist
Electrical Systems