10-2785 Relay Card (RC12) Installation Instructions

DESCRIPTION

The card provides twelve programmable relays that can be used to provide system status indication, control of electrical loads, and general purpose switching. A red LED is provided at each relay card position to provide positive indication that the associated relay coil is energized.

The card mounts directly to the enclosure back box using the following mounting hardware provided with the module.

Standoff Hardware Kit, P/N 02-12420

02-2715	Standoff, .625" M/F, 6x32 hex (qty. 5)
02-11879	Hex-nut, 6-32 UNC (qty. 5)
4153-142	Lock washer, #6

COMPATIBILITY

The RC12 is compatible with Fike's Cheetah Xi™ 50, Cheetah Xi™ 1016, CyberCat™ 254, CyberCat™ 1016 and CyberCat™ 50 control panels with version 5.XX firmware and higher.

SPECIFICATIONS

Current Consumption:	32 mA (normal standby) 256 mA (alarm), all relays active
Terminal blocks:	Accept 12 – 26 AWG
Relays (P1 – P12)[1]:	SPDT Form C relay contact C = Common NO = Normally Open NC = Normally Closed
DC Operation:	2.5 A @ 30 VDC
AC Operation:	5 A @ 125 VAC
Peripheral (P13):	▪ RS485 connection ▪ Terminals: +/-/shld/-/+ ▪ 9600 or 38400 baud rate ▪ Bits - 1 start, 2 stop, 8 data ▪ Power-limited & Supervised ▪ 100 ohm termination resistor if last device (P/N 10-2799)
+24V PWR (P13)[2]:	Terminals: +/-/+/- Power-Limited and Supervised
Dimensions (LxWxD):	11" x 6" x 1" (4.3 cm x 15.3 cm x 2.5 cm)
Operating Temp:	32ºF to 120ºF (0ºC to 49ºC)
Operating Humidity:	93% RH, non-condensing

[1] Relays can be connected to power-limited or non-power-limited wiring, not both.

[2] Power for card must be supplied by the host control panel or 24 volt, battery backed, regulated, power-limited power supply listed for fire protective signaling use.

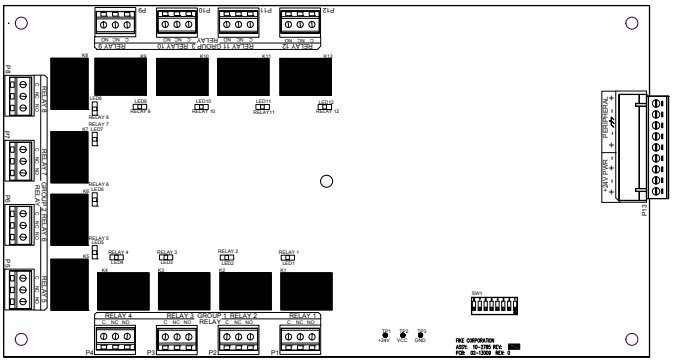


Exhibit 1 RC12 Relay Card

OPERATION

Operation of the card's relays is controlled by the host control panel via its RS485 connection to the host control panel. This intelligent interface allows each relay to be individually programmed to turn ON in response to the activation of a specific device or panel zone and state (i.e. Trouble, Pre-Alarm, Process, Abort, Disable, Alarm, Action, Release or Test Alarm). See Programming Options. Once transferred, the relay contacts will remain in the active state until either the control panel is reset or power to the card is removed, unless configured for a non-latching event.

Each relay can be individually tested without sounding the system audible(s). This is accomplished by configuring an input switch as a process input assigned to a zone (1-253) dedicated to relay test. The associated relay must be assigned to activate on its original operating zone and the dedicated test zone.

⚠Caution:

When a relay is configured to activate on zone Alarm, it will also activate for a process input in the same zone.

⚠Caution:

Relays may temporarily transfer on power-up. If using relay(s) for critical functions, it is strongly recommended that the relays be disabled on power-up of the control panel.

PROGRAMMING

The relay card must be added to the control panel configuration to enable module supervision and to configure relay functions. Programming of the relay card is accomplished using a lap top computer and Fike's C-Linx software. Refer to Fike document 06-448, "C-Linx Software manual" for programming instructions. Exhibit 2 outlines the various programming options available for the card.

Programming Feature	Possible Settings (Defaults shown bold)
Peripheral Address	**2** – 32
Local Buzzer	**Enabled**/Disabled
Relay Group	Group **1** – 3
Relay Group Configuration	
Relay 1 – 4	
Function	**No Function Assigned** / On – Device Activation / On – Device Trouble / On – Device PreAlarm / On – Zone Process / On – Zone Trouble / On – Zone Supervisory / On – Zone Abort / On – Zone Disabled / On – Zone Alarm / On – Zone Predischarge / On – Zone Release / On – Test Alarm / On – Zone Action / On – Any Network Device / On – Any Network Device Trouble / On – Any Network Device PreAlarm / Off – Any Network Device / Off – All Network Device
Assignments	Device / Zone / Net Device
By Device	Loop: 1 – 4 Address: 1 – 254
By Zone	1 – 254
By Net Device	Panel: 1 – 128 Loop: 1 – 4 Address: 1 – 254

Exhibit 2 Configuration Options

ENCLOSURE OPTIONS

The RC12 can be mounted inside any of the following Fike enclosures:

- CyberCat™ 1016, 23 card, FCC enclosure (P/N 10-2483-c-L-23-o-1 or -2)
- CyberCat™ 254, 23 card, FCC enclosure (P/N 10-2527-c-L-23-o-1 or -2)
- Cheetah Xi™ 1016, 23 card, FCC enclosure (P/N 10-2541-c-L-23-o-1 or -2)
- 3 Slot Remote Equipment Enclosure (P/N 10-2780-c)
- 5 Slot Remote Equipment Enclosure (P/N 10-2781-c)

See Exhibits 3 and 4 for acceptable mounting locations in the FCC enclosures.

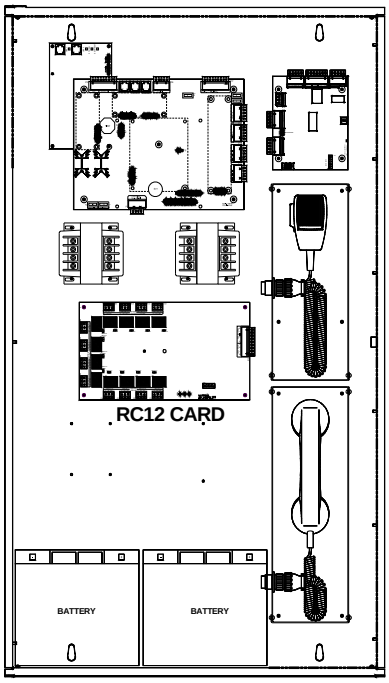


Exhibit 3 FCC Enclosure with Standard Back Box (-1)

The standard FCC enclosure has mounting studs that allows a single RC12 relay card or voice system amplifier to be installed.

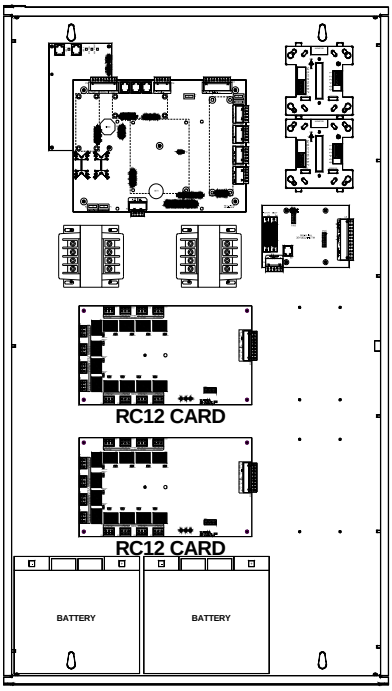


Exhibit 4 FCC Enclosure with Optional Back Box (-2)

The FCC enclosure can be ordered with an optional back box that allows up to two RC12 relay cards to be installed within the enclosure.

INSTALLATION

Installation of the relay card shall be performed or supervised by a Fike trained and certified technician who is familiar with all applicable codes and regulations pertaining to the installation of this product. The components shall be installed in accordance with the instructions provided in this manual or in other documents relating to this product, the local authority having jurisdiction (AHJ), and all local, regional, and national electrical and building codes.

⚠ CAUTION

The RC12 circuit board contains static sensitive components. Observe static sensitive material handling practices.

1. Verify that the enclosure is clean and free of dust and debris before installing the relay card.
2. Carefully unpack the relay card and check for shipping damage.
3. Install the M/F standoffs (qty. 5) supplied with the card to the threaded studs in the enclosure back box. See Exhibits 3 and 4 for mounting locations.
4. Align the card with the standoffs and secure in place with the 6x32 hex nuts and washers. See Exhibit 5.

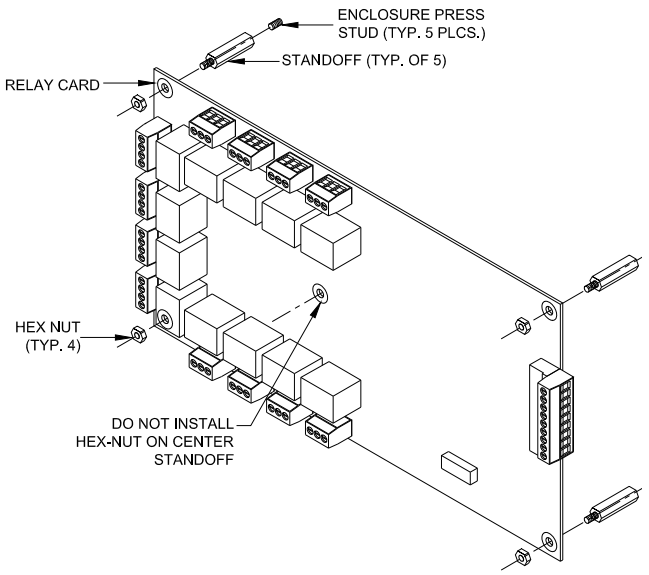


Exhibit 5 Relay Card Mounting

SETTING DIP-SWITCHES

Each relay card requires a unique address for identification on the RS485 peripheral bus. Dip-switch SW1 (switch 1 - 6) is used to set the address for the device. See Exhibit 6.

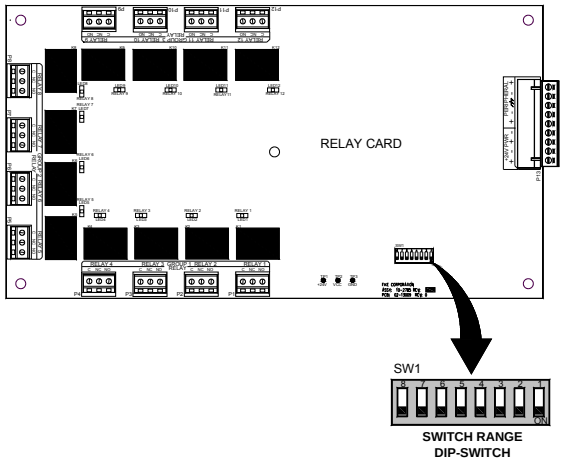


Exhibit 6 Addressing DIP-Switch

A maximum number of 31 devices can be connected to the RS485 peripheral bus circuit. The device addresses do not need to be sequential and can be set to any number between 02 and 32. Note that 00 is not a valid address and 01 is reserved for the control panel. See Exhibit 7 for DIP-switch settings for each binary address (ID number).

Binary Value	1	2	4	8	16	32
Dip Switch #	1	2	3	4	5	6
Address						
0	NOT VALID					
1	ON	◄ PANEL ONLY				
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

Exhibit 7 Binary Addressing Table

SETTING DIP-SWITCHES - CONTINUED

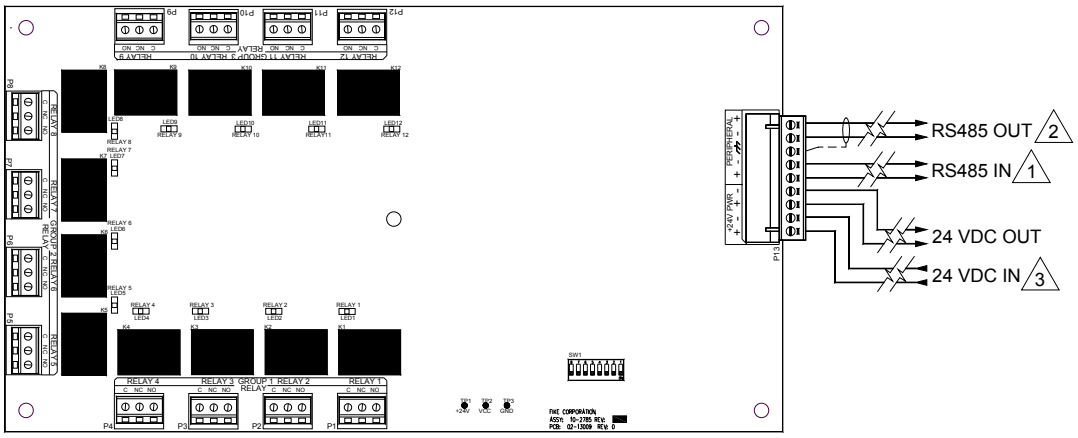
Dip-switch SW1 (switch 7) is used to set the peripheral bus communication speed that will be used by the control card. In the OFF position, the card will communicate at 9600 bps (standard). In the ON position, the card will communicate at 38400 bps (fast). The selected communication speed must match the host control panel settings.

⚠Caution

Dip-switch 8 is used for factory testing of the control card and must be set to *OFF* for proper operation.

WIRING

1. If the system is already powered, disable critical functions and power down system. Failure to do so may result in damage to the components.
2. Connect RS485 peripheral bus wiring to P13 terminals as shown in Exhibit 8. This is a pass-through connection. If last device on circuit, install 100 ohm termination resistor.
3. Connect 24 VDC power wiring to P13 terminals as shown in Exhibit 8. This is pass-through connection. Power must be supplied from host control panel or battery backed, regulated, power-limited power supply listed for fire protective signaling use.
4. Do <u>*NOT*</u> connect field wiring to relay card terminals P1 through P12 until after programming and acceptance testing of the relay card itself is complete.



NOTES: △
1. TERMINATE SHIELD WIRE, IF SHIELDED WIRE IS USED.
2. INSTALL 100 OHM TERMINATION RESISTOR IF LAST DEVICE.
3. POWER SUPPLIED FROM HOST CONTROL PANEL OR 24 VOLT, BATTERY BACKED, REGULATED, POWER-LIMITED, POWER SUPPLY LISTED FOR FIRE PROTECTIVE SIGNALING USE.

Exhibit 8 Wiring Connections

TESTING AND PLACING INTO SERVICE

1. Before landing the field wiring to the relay terminals (P1 – P12), thoroughly test the functionality of the relay card itself.
2. Connect field wiring to the relay terminals and validate proper operation again. Relays can be connected to power-limited or non-power-limited wiring; however, the requirement outlined in NFPA 70, National Electrical Code (NEC) requiring a minimum separation of ¼" (6 mm) between power-limited and non-power-limited wiring must be adhered to. Where relays are used for control of critical functions, coordinate testing with site manager so as not to interfere with normal facility operation.

⚠Caution

Relays may be used to switch voltages up to 125 VAC. Exercise appropriate care when testing the relay card operation. Only a qualified service technician shall test the relay functions.

⚠Caution

During the first few seconds of power-up, the associated control panel may not have full control of the relay contacts and they may momentarily chatter. If using the relays for critical functions, control the output closed or open respectively during controller power-up and power-down.

SERVICE AND MAINTENANCE

There are no serviceable components on the Relay Card. If the assembly should begin to operate incorrectly, first use C-Linx to validate the programming options of the card. Should the card continue to operate incorrectly, remove the card and return it to Fike for repair or replacement using Fike's RMA procedure.

To ensure proper system operation, this product must be tested in accordance with the requirements of NFPA 72 after programming operation or change in site-specific software. Reacceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring.

⚠Caution

Voltages up to 125 VAC may be present on the relay connection screw terminals. Exercise appropriate care when servicing a wired relay card. Only a qualified service technician shall perform repairs or maintenance.

PARTS LIST

Part Number	Description
10-2785	Relay Card
02-12420	Mounting Hardware Kit
10-2799	100 ohm Termination Resistor

Exhibit 9 Parts List

RELAY LEGEND

The following table shall be used to identify the function and switching voltage of each relay connection. The completed form shall be supplied to the end user for future reference by a qualified service technician.

⚠Caution

Relays may be used to switch voltages up to 125 VAC. Exercise appropriate care when working with the relay card connections. Only a qualified service technician shall perform testing or maintenance of the relay card.

	Relay	Function	Assignment		
			Device	Zone (1 – 254)	Net Device
Group 1	#1		Loop: _____ Addr: _____	Zone: _____ State: _____	Panel: _____ Loop: _____ Addr: _____
	#2		Loop: _____ Addr: _____	Zone: _____ State: _____	Panel: _____ Loop: _____ Addr: _____
	#3		Loop: _____ Addr: _____	Zone: _____ State: _____	Panel: _____ Loop: _____ Addr: _____
	#4		Loop: _____ Addr: _____	Zone: _____ State: _____	Panel: _____ Loop: _____ Addr: _____
Group 2	#1		Loop: _____ Addr: _____	Zone: _____ State: _____	Panel: _____ Loop: _____ Addr: _____
	#2		Loop: _____ Addr: _____	Zone: _____ State: _____	Panel: _____ Loop: _____ Addr: _____
	#3		Loop: _____ Addr: _____	Zone: _____ State: _____	Panel: _____ Loop: _____ Addr: _____
	#4		Loop: _____ Addr: _____	Zone: _____ State: _____	Panel: _____ Loop: _____ Addr: _____
Group 3	#1		Loop: _____ Addr: _____	Zone: _____ State: _____	Panel: _____ Loop: _____ Addr: _____
	#2		Loop: _____ Addr: _____	Zone: _____ State: _____	Panel: _____ Loop: _____ Addr: _____
	#3		Loop: _____ Addr: _____	Zone: _____ State: _____	Panel: _____ Loop: _____ Addr: _____
	#4		Loop: _____ Addr: _____	Zone: _____ State: _____	Panel: _____ Loop: _____ Addr: _____