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GEMC-FW-SLC

FIRE SIGNALING LINE CIRCUIT MODULE

INSTALLATION INSTRUCTIONS

WI1647A 11/11

DESCRIPTION

The GEMC-FW-SLC *Signaling Line Circuit* Module is the hard-wired interface between compatible NAPCO Fire SLC devices and the Gemini C-Series control panels. The 2-Wire UL Commercial Fire Listed SLC system requires a Gemini C-Series control panel and at least one of the below listed compatible SLC Fire devices in order to operate. These devices may be smoke detectors, heat detectors, NAC devices, single or dual Fire-initiating circuit-input devices, or other compatible devices that report zone status and supervision information to the GEMC-FW-SLC.

THE GEMC-FW-SLC module supports up to 126 Fire SLC devices. A maximum of two GEMC-FW-SLC modules may be used with any Gemini C-Series control panel for a maximum total of 252 Fire SLC zones. The GEMC-FW-SLC module is mounted inside the control panel metal housing and is connected to the control panel motherboard via the supplied connector. The GEMC-FW-SLC module polls each device, continually monitoring and updating the Fire status and conveying this information to the control panel. If there is no response from a Fire SLC device, a trouble will occur within 200 seconds.

IMPORTANT: *Only the NAPCO Firewolf SLC devices are compatible with the Gemini C-Series system. These NAPCO Fire SLC devices may NOT be used on other systems due to incompatibilities with this proprietary communication protocol.*

VERY IMPORTANT: For ANY keypad programming, the SLC board MUST be enabled in PCD-Windows Quickloader by opening the **System Assignment** screen, **RF-Receiver/SLC** tab.

SPECIFICATIONS, GEMC-FW-SLC MODULE

Electrical Ratings

Input Power:

Power Requirements: 24VDC, 70mA (standby current) + device current.

Maximum Total Combined 24V Input Current: 475mA.

Output Power: 36V pk, 150mA maximum. The additional alarm current (5 LED's @ 8mA for 40mA) is automatically added to determine standby + alarm current.

Note: Refer to PCD-Windows Quickloader download software's calculation tools for 24V standby current calculation. GEMC-Series total combined 24V auxiliary standby current must be reduced by GEMC-FW-SLC input current.

Dimensions W x D x H: 4.5" x 4" x 1"

Maximum Line Impedance: 50Ω

NAPCO COMPATIBLE FIRE SLC DEVICES

Any of the following NAPCO devices may be used with the GEMC-FW-SLC module:

FWC-FSLC-SMK - Analog Photoelectric Supervised Smoke Sensor Detector. Note: The GEMC-FW-SLC employs drift compensation for all FWC-FSLC-SMK detectors on the loop. For more information, see WI1709.

FWC-FSLC-HEAT - Low profile Heat Sensor with adjustable

threshold temperature, 0°F-190°F (default = 135°F). For more information, see WI1709.

FWC-FSLC-SMK6B - 6" Analog Smoke Detector (base only). For more information, see WI1709.

FWC-FSLC-DUCT - Easy-Install Photoelectric Analog Duct Detector. Detects and limits the spread of smoke throughout building HVAC ducts. For more information, see WI1711. **Note:** If the FW-SLC-DUCT is used for damper control, it must be programmed in Quickloader as a supervisory fire zone by programming **Area 1 (Fire)** and **Supervisory** on the zone in the **By Zone** features screen.

FWC-FSLC-SMKALG - Replacement head for the FWC-FSLC-DUCT Photoelectric Analog Duct Detector (see above description).

FWC-FSLC-EZM2 - Dual Input Monitor Module. Monitors Fire alarm and other supervisory devices. Fits into a standard 4" square or double gang electrical back box. **Note:** The FWC-FSLC-EZM2 contains two inputs; when mapping these inputs (using PCD-Windows Quickloader), the second input MUST immediately follow the first input; *the second input cannot be mapped without first mapping the first input.* Note: For more information, see WI1712.

FWC-FSLC-EZM1, -EZM1B - Fast Response Contact Module. Single-input contact monitors dry contact alarm initiating devices. For more information, see WI1713.

FWC-FSLC-CZM - Conventional Zone Module. Allows the panel to interface and monitor dry contacts such as pull stations and compatible two-wire conventional smoke detectors. Status conditions are reported as normal, open or alarm. Maximum 8 allowed per GEMC-FW-SLC board. For more information, see WI1714.

FWC-FSLC-RM2 - (Output device) Dual Relay Module provides two independently configurable Form C contacts per address, Contacts rated 1.0A @ 30VDC or 0.5A @ 125VAC. For more information, see WI1715.

FWC-FSLC-ISO - (Circuit protector) Loop Short Circuit Isolator. The FWC-FSLC-ISO is used to prevent a short from disabling the entire GEMC-FW-SLC polling loop. For more information, see WI1716.

FWC-FSLC-SOM1 - (Output device) Supervised Output Module, provides a Class B Individual Circuit rated for 2A/30VDC. For more information, see WI1717.

FWC-FSLC-PULL, FWC-FSLC-PULL2, FWC-FSLC-PULLK, FWC-FSLC-PULL2K - Analog Pull Station. For more information, see WI1736.

FN-CTM - City Tie Master Box Initiating Module. For more information, see the FN-CTM instructions..

Note: The **FWC-FSLC-PROG2** is a hand held programming tool; it is not a "device" that is wired to the GEMC-FW-SLC. The **FWC-FSLC-PROG2** is used to manually confirm or reset a 3-digit "internal device address" number programmed within each device. These three numbers (001-126) are used to identify the device to the system. For more information, see WI1738.

INSTALLATION

DESIGNING THE SYSTEM

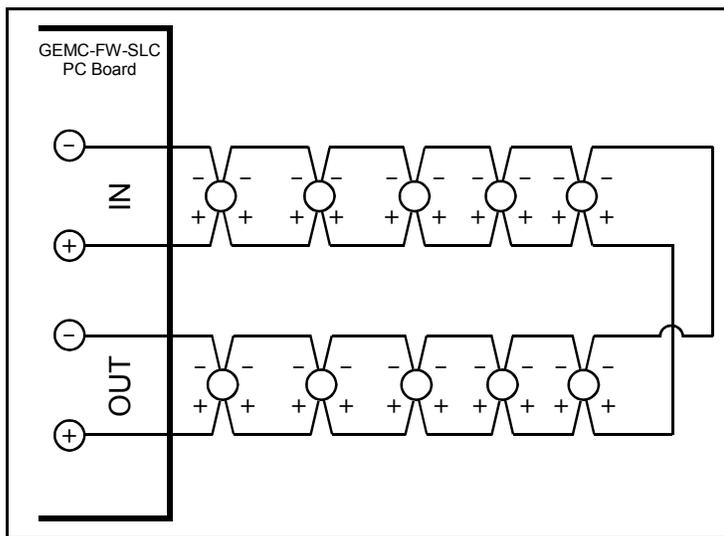
While planning the layout of the system, the required class and style of the SLC loop must first be determined.

Class A wiring comprises a 4-wire circuit, with two wires from the control panel connecting to the devices and returning to the same control panel. A break in a wire generates a trouble condition, with all active devices remaining able to detect an alarm.

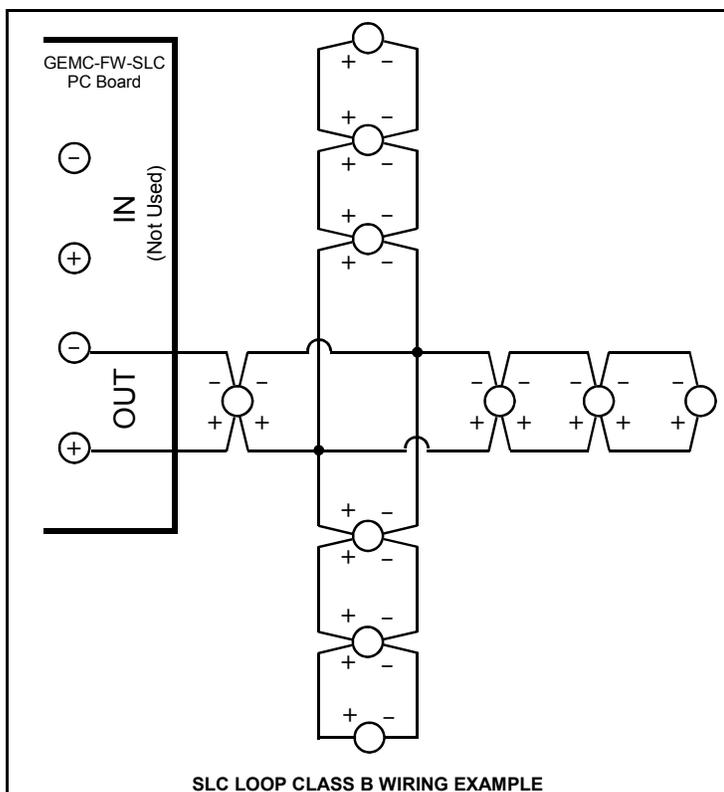
Class B wiring comprises a 2-wire circuit, with two wires from the control panel connecting to the devices, with the final connection to a UL Listed "End of Line" device. A break in a wire causes a trouble condition but all devices past the break will not function.

Class A Style 6 and 7

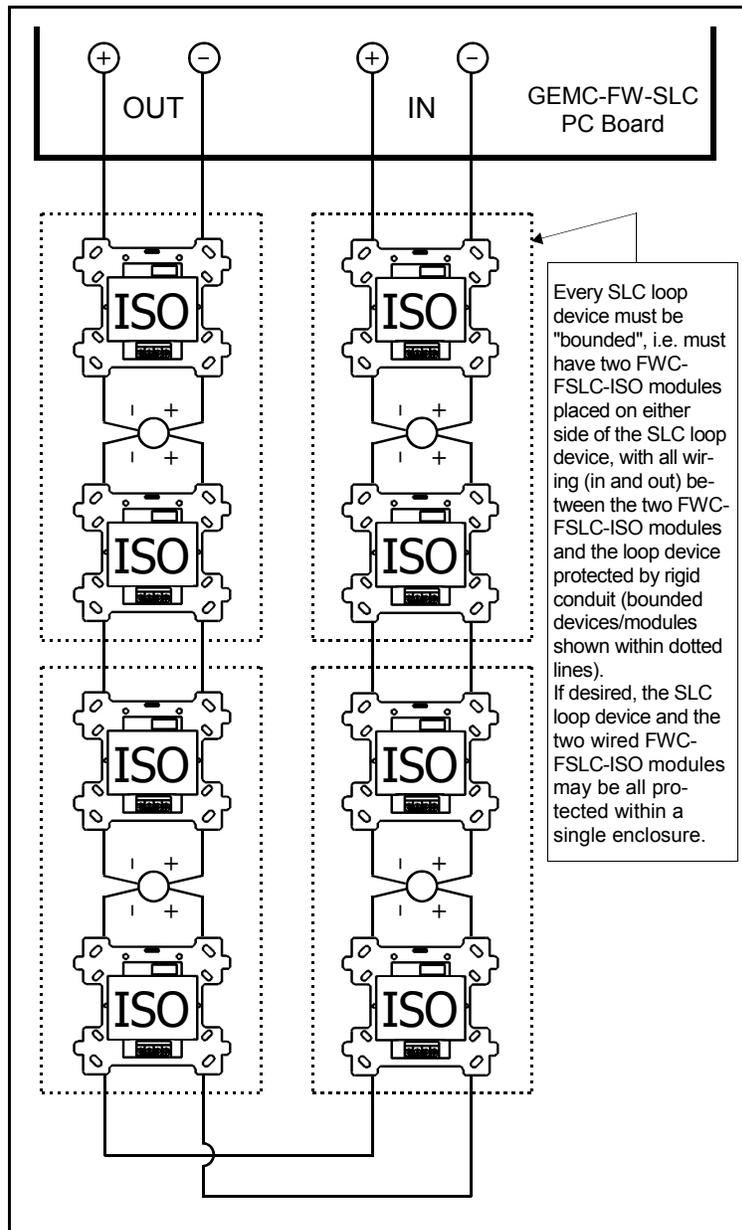
Wiring Requirements: Both the **SLC OUT** and **SLC IN** terminals must be daisy chained with the first device wired to



SLC LOOP CLASS A WIRING EXAMPLE (FOR STYLE 6)



SLC LOOP CLASS B WIRING EXAMPLE



SLC LOOP CLASS A (STYLE 7) WIRING EXAMPLE WITH SHORT CIRCUIT ISOLATOR FWC-FSLC-ISO MODULES.

Every SLC loop device must be "bounded", i.e. must have two FWC-FSLC-ISO modules placed on either side of the SLC loop device, with all wiring (in and out) between the two FWC-FSLC-ISO modules and the loop device protected by rigid conduit (bounded devices/modules shown within dotted lines). If desired, the SLC loop device and the two wired FWC-FSLC-ISO modules may be all protected within a single enclosure.

SLC OUT and the last device wired to **SLC IN**.

For NFPA 72 Class A Style 7 compliance, every SLC loop device must be "bounded", i.e. must have two FWC-FSLC-ISO modules placed on either side of the SLC loop device, with all wiring (in and out) between the two FWC-FSLC-ISO modules and the loop device protected by rigid conduit as shown in the above diagram. In place of rigid conduit, the bounded devices/modules may be all protected within a single enclosure. **Note:** Rigid conduit is not required for the wiring between the bounded devices/modules (between two adjacent FWC-FSLC-ISO modules where no SLC loop devices exist). A short circuit on these exposed wires outside of rigid conduit will be detected by the control panel, and will still allow any device to initiate an alarm. **Note:** A short circuit or an open on a Class A Style 7 SLC loop will indicate a trouble condition on the system keypad (trouble E96-01 or E96-02 depending on the module in trouble).

Class B Styles 3 and 4

Wiring Requirements: Only the two **SLC OUT** terminals are required, wire runs may be daisy chained, home run and/or T-tapped off the main section.

All devices must be wired with the correct polarity:

Wire the (+) device input to the (+) SLC module terminal

Wire the (-) device input to the (-) SLC module terminal

Draw a layout of the system, identifying all proposed FWC device locations and the anticipated control panel location. Also include notations indicating device types and other relevant information for review by the authority having jurisdiction.

WIRE GAUGES

Wiring gauges must be calculated using distance and device loads as shown in the list below:

#18AWG - 150mA in alarm/standby @ 3900 ft. (1189m)

#16AWG - 150mA in alarm/standby @ 6200 ft. (1890m)

#14AWG - 150mA in alarm/standby @ 10,000 ft. (3048m)

MOUNTING

There are two mounting locations in the control panel housing for the GEMC-FW-SLC module(s). If the maximum of two GEMC-FW-SLC modules are connected to the control panel, each module must be individually addressed (via the "ADDR" dip switches) to allow the control panel to identify each module correctly. See WI1653 Volume 1 for complete mounting instructions, either into the large enclosure (GEMC-HSKIT1425) or the small enclosure (GEMC-HSKIT1416).

Note: A total of four (4) SLC / RF Receiver modules can be added to the system. Modules 1 and 2 can be either GEMC-FW-SLC or GEMC-BSLC modules (mounted within the control panel enclosure), or GEMC-RECV wireless RF receivers (wired to either the control panel Burg bus or control panel Fire bus and mounted throughout the premises). Modules 3 and 4 cannot be GEMC-FW-SLC or GEMC-BSLC modules but can only be GEMC-RECV wireless RF receivers. See the GEMC-RECV installation instructions (WI1682) for programming the wireless devices into the system. **Note:** Modules must be addressed contiguously (no skipped addresses).

Before mounting the GEMC-FW-SLC module inside the control panel enclosure, orient the GEMC-FW-SLC module so that the "ADDR" dip switches and "RELAY" dip switches are located on the right side of the PCB board, and set the switches as follows:

One GEMC-FW-SLC Module Used in the System

If only one GEMC-FW-SLC module is used inside the enclosure, the #1 "ADDR" dip switch must be pushed up and the #2 must be pushed down.

The module is connected to the Gemini C-Series control panel motherboard via its supplied 4-wire harness. Connect this harness between the motherboard receptacle SLC1 (located on the bottom right of the motherboard) and the GEMC-FW-SLC module receptacle JP1 (located on the top right of the GEMC-FW-SLC module). See WI1653 Volume 1 for complete mounting instructions.

If using Output Devices, the RELAY dip switches must be set. See "**MAPPING THE FIRE OUTPUT DEVICES**" further in this manual.

Two GEMC-FW-SLC Modules Used in the System

If a second GEMC-FW-SLC module is used inside the enclosure, the #1 "ADDR" dip switch must be pushed down and the #2 must be pushed up.

The second module is also connected to the Gemini C-Series control panel motherboard via its individually supplied 4-wire harness. Connect this harness between the motherboard receptacle SLC2 (located on the bottom right of the motherboard) and the GEMC-FW-SLC module receptacle JP1 (located on the top right of the GEMC-FW-SLC module). See WI1653 Volume 1 for complete mounting instructions.

If using Output Devices, the RELAY dip switches must be set. See "**MAPPING THE FIRE OUTPUT DEVICES**" further in this manual.

DEVICES AND PRELIMINARY INFORMATION

All of the devices that can be used with the GEMC-FW-SLC module (listed on page 1) can be separated into 3 distinct categories. Each of these 3 categories requires a different installation procedure.

- **Zone Input Devices**
- **Output Devices**
- **Short Circuit Protector**

All devices must be wired to at least one GEMC-FW-SLC module. All Zone Input Devices must be "mapped" or "associated" to a zone on the control panel. Similarly, the Output Devices (FWC-FSLC-SOM1 and FWC-FSLC-RM2) must be "mapped" to an external output numbered 1 through 40. The Short Circuit Protector (FWC-FSLC-ISO) does not require "mapping"; it requires only to be physically wired to the GEMC-FW-SLC polling loop. In addition:

- Zone input devices can be mapped using PCD-Windows Quickloader Download software.
- Output Devices (FWC-FSLC-SOM1 and FWC-FSLC-RM2) **MUST** be mapped via PCD-Windows Quickloader download software. See "**MAPPING THE FIRE OUTPUT DEVICES**" further in this manual.

SPECIAL NOTE: FWC-FSLC-SOM1

To prevent a single break, single ground, or wire-to-wire fault on the installation conductors of a signaling line circuit for use with addressable notification appliances or modules shall not affect operation of more than one notification zone, the following is required when using FWC-FSLC-SOM1's on more than one zone:

1. The SLC must be configured and programmed as grade A style 7;
2. The Regulated 24VDC power circuit on different NAC zones must either be wired from different power circuits, or when circuits are shared, must be protected with rigid conduit suitable for the application;
3. To ensure survivability from attack of both the SLC and power circuits, the installation must meet or exceed the *Pathway Survivability Levels* 1-3 as described in NFPA 2010 edition, clauses 12.4.2, 12.4.3 and/or 12.4.4.

Unlocking the Keypad

GEMC-FK1 Fire keypads must be "unlocked" before they can be used to change the state of the system. Use the Fire keypad to enter the 6-digit Master Security Code (located on

a sticker on the motherboard), then press **ENTER**.

"ENABLE PROGRAMMING"

To allow changes to be made to the Fire portion of the system (the Fire program), including "mapping" the Fire SLC devices, the Function Menu item "ENABLE PROGRAMMING" must be selected. To ensure the panel is free of errors, the Fire portion of the system will display a panel trouble E28 "Error Check Required" unless a download is performed from PCD-Windows Quickloader software. PCD-Windows performs an "Error Check" of the system to ensure that there are no logical errors or inconsistencies in the programming of Fire attributes.

To activate "Enable Programming", use the Fire keypad to enter the 6-digit Master Security Code (located on a sticker on the motherboard), then press **ENTER**. (If the keypad is locked, pressing **ENTER** will also unlock the keypad). Next, press **MENU** to scroll through each menu option until "ENABLE PROGRAMMING" appears, then press **ENTER** to select. Be aware that entering "ENABLE PROGRAMMING" generates a system trouble--the keypad displays the "ErrorCheck Req" trouble (E28-00) and starts beeping. Press **ACK** to silence this trouble audible and continue with the procedure despite this generated system trouble. **Note:** To remove this trouble, the new program will need to be uploaded into PCD-Windows and then downloaded back to the panel. In addition, PCD-Windows must be used before the E28 trouble is removed.

Device Six-Character ID

Fire SLC devices are mapped to a zone in the control panel with a six-character ID similar to wireless transmitters. This six-character ID is a combination of significant numbers and/or letters used by the system to identify and associate ("map") each device to one of the system zones in the control panel.

When mapping a device, using either the keypad or PCD-Windows, a series of 6 zeros are displayed, followed by a colon (":") and two additional zeros separated by a dash ("-"), as shown:

"000000:0-0"

The first 6 zeros are reserved for the 6-character device ID (explained below). The digit after the colon is a sum check digit, calculated by PCD-Windows after all other characters are entered in this field, and should be disregarded as it has no effective use by the installer. The digit after the dash is the "Device Point", that only applies to certain devices such as the FWC-FSLC-EZM2 that provide more than one independent zone input contact monitoring circuit while only utilizing one address on the SLC loop.

An typical example of a device's six-character ID is "421007", with the six characters arranged as follows:

- **The first character** of a Fire SLC device is always "4" to identify the type as "Fire SLC Device".
- **The second character** identifies the "Type" of the device as one of nine listed below:
 - 1: **FWC-FSLC-SMK** Photoelectric Smoke
 - 2: **FWC-FSLC-HEAT** Heat Sensor
 - 3: **FWC-FSLC-PULL** Analog Manual Pull Station
 - 4: **FWC-FSLC-EZM1, -EZM1B** Fast Response Contact Monitor Module
 - 5: **FWC-FSLC-SOM1** Supervised Output Module*

6: **FWC-FSLC-RM2** Dual Relay Module*

7: **FWC-FSLC-DUCT** Photoelectric Duct Sensor

8: **FWC-FSLC-EZM2** Dual Input Monitoring Module

9: **FWC-FSLC-CZM** Conventional Zone Module

(*Output device type used in the PCD-Windows "Relay Assignment" screen; it is included here for reference only).

- **The third character** identifies the number of the GEMC-FW-SLC module to which the device is wired as specified by the "ADDR" dip switch positions located on the GEMC-FW-SLC module PCB board (either a "1" or a "2").
- **The fourth, fifth and sixth characters** identify the "internal device address" (decimal 001-126) and are either generated and automatically programmed by the system--or--are assigned and manually programmed by the installer. The automatic "Easy Enroll" method (see **Method 1** below) is initiated from within the *Easy Menu Driven Program Mode*; in this mode, the GEMC-FW-SLC continually looks for any new devices placed on the live polling loop--when found, the system picks a new internal device address and reprograms the device to this new address. For manual assignment, two methods exist: The first method (see **Method 2** below) is initiated from within *Direct Address Program Mode* where the installer selects and enters an internal device address, then manually programs that address into the device using the **FWC-FSLC-PROG2** hand held programmer. The second manual method (see **Method 3** below) is initiated from PCD-Windows Quickloader download software; the internal device address is selected by the application, then the installer manually programs that address into the device using the **FWC-FSLC-PROG2** hand held programmer. The next section details the procedures for mapping Fire input devices to control panel zones, including the Methods 1, 2 and 3.

MAPPING THE FIRE INPUT DEVICES

Each C-Series control panel can support up to a specific number of zones, and each zone can support a particular device. Mapping involves associating a specific control panel zone to a specific device.

There are three separate methods that can be used map the Fire Input SLC devices to the intended control panel zones:

METHOD 1: EASY ENROLL

METHOD 2: DIRECT ENTRY

METHOD 3: PCD-WINDOWS DOWNLOAD

Method 1 makes use of a menu selection within the keypad; Method 2 also makes use of a menu selection within the keypad, but allows for manual entry and requires the use of the **FWC-FSLC-PROG2** hand held programmer; Method 3 makes full use of the PCD-Windows Quickloader Download software, and thus might be considered the easiest method for mapping devices. The method selected will differ for each installation type and your preference may change with the total number of devices used; therefore it is recommended to review each method before mapping.

Note: The FWC-FSLC-EZM2 contains two inputs; when

mapping these inputs (using PCD-Windows Quickloader), the second input **MUST** immediately follow the first input; *the second input cannot be mapped without first mapping the first input.*

MAPPING THE FIRE INPUT DEVICES

METHOD 1: EASY ENROLL

Note: If you wish map devices FWC-FSLC-SOM1 and FWC-FSLC-RM2, you must use PCD-Windows Quickloader download software (Method 3); see page 10. If you wish to install an FWC-FSLC-ISO device, turn to page 16.

With this mapping method, the basic procedure requires the panel first be programmed to look for new devices added to the system, then the keypad is used to set the system into the Easy Enroll mode. Upon making the final wired connection to a device (or upon installing the device into its wired base) the system detects the device, creates its unique 6-character ID, and maps the device to a zone (as determined by the installer) in the system. Proceed as follows:

1. The GEMC-FW-SLC module must be connected to the correct SLC jack on the Gemini C-Series control panel motherboard via its supplied 4-wire harness, and the "ADDR" dip switches are set correctly (see **MOUNTING AND WIRING THE MODULE**, above).
2. The GEMC-FW-SLC loop wires must be connected from the GEMC-FW-SLC to the mounting bases of the devices (the devices must not yet be installed into their bases). Devices with bases include the FWC-FSLC-SMK, FWC-FSLC-HEAT, and FWC-FSLC-DUCT. For all other devices without mounting bases, the negative wire can be connected to the device terminal marked [SC -] but the positive device terminal (marked [S+]) must remain unconnected, as follows:
 - a. Insert negative wire(s) into the GEMC-FW-SLC module terminal marked [SC -]. **Note:** Some devices have two negative wires, others may have only one if they are located at the end of a loop. See Class B wiring example above.
 - b. Short both positive (+) SLC wire(s) together (do NOT connect the wires to the GEMC-FW-SLC module terminals at this time). **Note:** Some devices have two positive wires, others may have only one if they are located at the end of a loop. See Class B wiring example above. Shorting both positive wires together allows devices in the loop that are further away from the GEMC-FW-SLC module to receive power and thus be learned out of sequence.
3. The SLC devices to be added to the system must have the factory programmed "internal device address" of 127. Note that all new SLC devices "out of the box" have an internal device address of 127 pre-programmed. Use the **FWC-FSLC-PROG2** to confirm or to reset this address number to 127. When using Easy Enroll, this internal device address number will be changed to an available number (001-126) as determined by the system.
4. A GEMC-FK1 keypad is connected to the control panel keypad bus, and the system control panel is powered up.

Note that upon power up, some installations may cause troubles to appear. You can silence the system trouble audibles by first unlocking the keypad with the 6-digit Master Security Code and pressing **ENTER**; then press **ACK**. to silence the troubles.

5. Make sure the Fire portion of the system has "ENABLE PROGRAMMING" activated (refer to the "**ENABLE PROGRAMMING**" section above for instructions).
6. The panel must first be programmed to look for the GEMC-FW-SLC module in its correct address location as set by its dip switches and its connector. To do this, you can use Direct Address Program Mode using the keypad or use PCD-Windows Quickloader Download software.

If using Direct Address Program Mode to look for the GEMC-FW-SLC module:

With the keypad in Dealer Mode and the Fire portion of the system with "ENABLE PROGRAMMING" activated, press **MENU** to scroll thru menu options until "CF DEALER PROG MODE" appears, then press **ENTER** to enter Dealer Mode. Press **ENTER** again to enter Direct Address Program Mode, press 7959 to access address location 7959. The first entry is to type the total number of GEMC-FW-SLC modules in the system (enter 0 through 3). Press **ENTER**. Press **NEXT** to proceed to the second entry which is the type of device for address #1. (See address 7958 of the Gemini C-Series control panel programming instructions WI1673).

If using PCD-Windows to look for the GEMC-FW-SLC module:

If creating a new Account, select "Combo Panel" for the panel type, and the Download Security Code is located on a triangle-shaped sticker on the control panel PC board). If local downloading, the computer is connected to a PCI2000 Computer Interface module which in turn is connected via an RJ-45 plug located on the bottom left of the control panel PC board. **Note:** The RJ-45 receptacle used by the system is selected via PCD-Windows Quickloader using the **Communication** screen. **Note:** Before downloading, be certain the GEMC-FK1 keypad wired to the control panel is configured in the **Keypad Assignment** screen as **Keypad 1**, and its **Type** is selected as "Fire".

Click **System Assignment** button; in the **System Assignment** screen, click the *RF Receivers / SLC* tab, click the **SLC Fire Address 1** radio button. If a Class A style wiring to the SLC device was used, check the **Class A** checkbox. If Class B style wiring to the SLC device was used, uncheck the **Class A** checkbox. Click **OK** to save. Click the **Local Communication** button to start the download to the panel process.

After exiting Direct Address Program Mode by pressing **RESET** or after completing the PCD-Windows download process, the control panel begins to download data to the GEMC-FW-SLC module(s) to permit communication to devices that will be added later. During this data transfer, the keypad will display "PLEASE WAIT SYSTEM INITIALIZING" indicating that the system is busy while the GEMC-FW-SLC module(s) are looking for any existing SLC devices wired to the SLC loop (this process may take several

minutes). **Note:** The Trouble keypad icon will appear. Unlock the keypad by pressing the Dealer Code programmed into the panel (default is 112233 **ENTER**), then press **MENU** until the keypad reads "CF DEALER PROG MODE".

7. With "CF DEALER PROG MODE" displayed on the keypad, press **ENTER** to select, then press **NEXT** to scroll through menu options until the following appears:

```
Zn# DEVIC+CS P R
01- 000000:0-0 0
```

The top line of the keypad indicates the menu option that allows new devices to be mapped to control panel zones. The "01" in the second line indicates the zone number to which this device will be mapped. You can enter this number manually or use the existing number that appears on the keypad (it is the next available zone number as selected by the system). The series of 6 zeros indicate the soon-to-be-determined 6-character device ID. These 6 zeros will change upon making the initial wired connection to the device.

8. Press **SILENCE** to enter "learn mode"; the **FIRE** and **AC ON** lights on the keypad will flash. The 6 zeros change to the word "ENROLL" and the system begins to look for any new devices with an "internal device address" of "127".

For devices with bases: Insert the device (programmed as "127") into its base. **For devices without bases:** Press the two positive shorted wire(s) that were left unconnected in step 2b to the top of the GEMC-FW-SLC module terminal marked "S+" for several seconds (when the system detects the new device, the device LED's flash and the keypad beeps). When the device LED's stop flashing, remove the two shorted wires from the top of the terminal marked "S+" and secure the wire(s) to the "S+" terminal with its terminal screw.

When the LED's flash, the panel is scanning the device to determine its Type and the GEMC-FW-SLC module address to which the device is wired. This scanned data and the lowest available panel address number are then used to generate the new 6-character ID for the device. Once generated, the ID appears on the keypad display. The system will then re-program the internal device address number from 127 to its new number and maps the device to its selected zone.

9. The system will continue to look for any additional devices added to the system that are programmed as "127", therefore continue to add devices to the SLC loop as detailed in step 8. If the system detects an additional device, the device will be enrolled into the next available zone (the zone number automatically increments to the next available zone). Continue adding devices in this manner until all devices are added and mapped to their assigned zones. **Note:** See below for examples.

You can view the mapped 6-character ID's of each device later by re-entering this Easy Enroll mode and pressing the zone number using the keypad number keys.

10. Press **RESET** twice to exit Program Mode.
11. Before the system can be put into operation, and to ensure the panel is free of errors, the panel program

MUST be uploaded into PCD-Windows Quickloader software and then downloaded back to the panel from PCD-Windows. This "Error Check" of the system is performed by PCD-Windows when downloading to the control panel to ensure all changes made to the panel programming do not conflict with any new or existing programming.

12. Test all devices in the system as detailed in the **TESTING THE DEVICES** section, below.

Example: 6-character device ID "472003"

The device intended to be mapped is a photoelectric duct sensor (the second character in the 6-character device ID is device "type" 7) and is wired to the second GEMC-FW-SLC module (dip switches addressed as #2). Two existing heat sensors have already been mapped into the system, each with internal device addresses of 001 and 002. When the new photoelectric duct sensor is detected by the system, the system automatically creates the 6-character device ID as "472003", as follows:

4 = Fire SLC device

7 = Type = Photoelectric Duct sensor

2 = SLC Module dip switches are set to indicate the module address is number "2" (the #1 "ADDR" dip switch is pushed down and the #2 dip switch is pushed up)

003 = The lowest available internal device address number (the two other devices mapped previously force the lowest available number to be "003" out of a possible 126 devices).

The keypad will indicate:

```
Zn# DEVIC+CS P R
03- 472003:4-1 0
```

The "03" in the second line of the keypad display indicates the zone number to which this device is mapped (zone 3).

Note: For SLC devices, the digit that appears after the colon (":") in the second line is an internal system sum check digit that should be disregarded as it has no effective use by the installer.

The digit after the dash is the "Device Point", that only applies to certain devices such as the FWC-FSLC-EZM2 that provide more than one independent zone input contact monitoring circuit while only utilizing one address on the SLC loop.

Another Example: 6-character device ID "482004"

Let's continue the previous example by adding another device, this time an **FWC-FSLC-EZM2** into the next available zone location, in this case in zone 4. Be aware that the **FWC-FSLC-EZM2** has two "Device Points" (two independent zone input contact monitoring circuits available); the second input is to be open and the first is to be closed. When the device is detected by the system, the system automatically creates the 6-character device ID as "482004", as follows

4 = Fire SLC device

8 = Type = Dual Input Monitoring Module

2 = SLC Module dip switches are set to indicate the module address is number "2"

004 = The lowest available internal device address number.

The keypad will indicate:

```
Zh# DEVIC+CS P R
04- 482004:7-2 0
```

The number 7 is the check digit (as stated previously, disregard this check digit) and the number after the dash is a "2" indicating the second of the two "Device Points" (the second of the two independent zone input contact monitoring circuits available on the **FWC-FSLC-EZM2**).

MAPPING THE FIRE INPUT DEVICES

METHOD 2: DIRECT ENTRY

OVERVIEW--Using the Planned System Layout

Before installing most Commercial Fire alarm systems, a detailed diagram of the Fire alarm system must be created and approved by the authority having jurisdiction. This Fire installation diagram will detail the planned layout of the system, identifying all devices and indicating where each is to be installed.

With this detailed planned layout, a complete list can be created detailing the specific installation location for each device, the specific panel zone to which each device will be mapped and the specific six-character internal ID for each device can be determined.

Equipped with this specific installation information, the installer can visit the installation site, pre-wire the system by performing all physical wiring of the device bases and devices as needed, and return to the installation site at a later date to power up and program the system.

Similarly, the control panel and the GEMC-FW-SLC module(s) can be programmed in another location even before visiting the installation site, with the intention of performing all wiring at some future date. Therefore, wiring the GEMC-FW-SLC module(s) and wiring the devices to the loop (step 8) can be performed before or delayed until after the system is programmed with steps 1-6 below.

Note: Because Fire devices can be sensitive to dusty environments, the installer may wish to wait until after any construction dust has settled before installing the devices themselves. In addition, prior to installing the actual devices, the installer can pre-program each device with the FWC-FSLC-PROG2 programming tool, physically marking each device with its assigned internal device address (001-126) to simplify the installation.

The system can be powered or unpowered when the devices are installed; in the end, a powered system will look for and configure each device for correct operation.

Note: If you wish map devices FWC-FSLC-SOM1 and FWC-FSLC-RM2, you must use PCD-Windows Quickloader download software (Method 3); see page 8. If you wish to install an FWC-FSLC-ISO device, turn to page 16.

If you wish to perform all wiring of the GEMC-FW-SLC devices before the system is programmed, proceed to step 8; otherwise ensure the following conditions exist in steps 1-7 before proceeding.

1. The GEMC-FW-SLC module must be connected to the correct SLC jack on the Gemini C-Series control panel motherboard via its supplied 4-wire harness, and the "ADDR" dip switches are set correctly (see **MOUNTING AND WIRING THE MODULE**, above).

2. A GEMC-FK1 keypad is connected to the control panel keypad bus, and the system control panel is powered up.

Note that upon power up, some installations may cause troubles to appear. You can silence the system trouble audibles by first unlocking the keypad with the 6-digit Master Security Code and pressing **ENTER**; then press **ACK**. to silence the troubles.

3. Make sure the Fire portion of the system has "ENABLE PROGRAMMING" enabled (refer to the "**ENABLE PROGRAMMING**" section above for instructions).
4. The panel must first be programmed to look for the GEMC-FW-SLC module in its correct address location as set by its dip switches and its connector. Use PCD-Windows Quickloader software as follows:

If creating a new Account, select "Combo Panel" for the panel type, and the Download Security Code is located on a triangle-shaped sticker on the control panel PC board). If local downloading, the computer is connected to a PCI2000 Computer Interface module which in turn is connected via an RJ-45 plug located on the bottom left of the control panel PC board.

Note: The RJ-45 receptacle used by the system is selected via PCD-Windows Quickloader using the **Communication** screen. **Note:** Before downloading, be certain the GEMC-FK1 keypad wired to the control panel is configured in the **Keypad Assignment** screen as **Keypad 1**, and its **Type** is selected as "Fire".

Click **System Assignment** button; in the **System Assignment** screen, click the **RF Receivers / SLC** tab, click the **SLC Fire Address 1** radio button. If a Class A style wiring to the SLC device was used, check the **Class A** checkbox. If Class B style wiring to the SLC device was used, uncheck the **Class A** checkbox. Click **OK** to save. Click the **Local Communication** button to start the download to the panel process.

After completing the PCD-Windows download process, the control panel begins to download data to the GEMC-FW-SLC module(s) to permit communication to devices that will be added later. During this data transfer, the keypad will display "PLEASE WAIT SYSTEM INITIALIZING" indicating that the system is busy while the GEMC-FW-SLC module(s) are looking for any existing SLC devices wired to the SLC loop (this process may take several minutes). **Note:** The **Trouble** keypad icon will appear.

Unlock the keypad (by pressing the 6-digit Master Security Code located on a sticker on the motherboard, then press **ENTER**), then press **MENU** until the keypad reads "CF DEALER PROG MODE".

5. With "CF DEALER PROG MODE" displayed on the keypad, press **ENTER** to select, then press **NEXT** to scroll thru menu options until the following appears:

```
Zh# DEVIC+CS P R
01- 000000:0-0 0
```

The top line of the keypad indicates the menu option that allows new devices to be detected. The "01" in the second line indicates the zone number to which this device will be mapped. Press the desired zone number that you wish to program using the keypad. The series of 6 zeros indicate the soon-to-be-assigned 6-character device ID.

6. With the desired zone number displayed in the second line, enter the 6-character ID as follows: For the first character, press a "4" (the "4" is used for the Fire SLC module type). Next, press the device "type" (1-9) from the following list:

- 1: **FWC-FSLC-SMK** Photoelectric Smoke
- 2: **FWC-FSLC-HEAT** Heat Sensor
- 3: **FWC-FSLC-PULL** Analog Manual Pull Station
- 4: **FWC-FSLC-EZM1**, **-EZM1B** Fast Response Contact Monitor Module
- 5: **FWC-FSLC-SOM1** Supervised Output Module
- 6: **FWC-FSLC-RM2** Dual Relay Module
- 7: **FWC-FSLC-DUCT** Photoelectric Duct Sensor
- 8: **FWC-FSLC-EZM2** Dual Input Monitoring Module
- 9: **FWC-FSLC-CZM** Conventional Zone Module

Next press the number of the GEMC-FW-SLC module to which each device is wired. Then press the internal device address programmed by the FWC-FSLC-PROG2 programming tool (001-126). Press **ENTER** to save this information.

Change the desired zone number that you wish to program and repeat this step for all other devices, pressing **ENTER** to save your data after each entry.

Caution: The FWC-FSLC-SOM1 and the FWC-FSLC-RM2 must use the highest addresses, therefore reserve these for relays (see page 13).

7. When finished, press **RESET** twice to exit Program Mode.

8. **Note:** Some devices have two negative and two positive wires each, others may have only one each if they are located at the end of a loop. See Class A and Class B wiring examples earlier in this manual and the installation instructions for each device for more information.

Note: Because Fire devices can be sensitive to dusty environments, the installer may wish to wait until after construction dust has settled before installing the devices themselves. In addition, prior to installing the actual devices, the installer can pre-program each device with the FWC-FSLC-PROG2 programming tool, physically marking each device with its assigned internal device address (001-126) to simplify the installation.

For devices with mounting bases, connect the GEMC-FW-SLC loop wires from the GEMC-FW-SLC module(s) to the device mounting bases, observing polarity, and insert all devices into their bases. Connect the negative wire(s) to the device terminal marked [SC -] and connect the positive wires to the positive device terminal (marked "S+"). Devices with bases include the FWC-FSLC-SMK and the FWC-FSLC-HEAT.

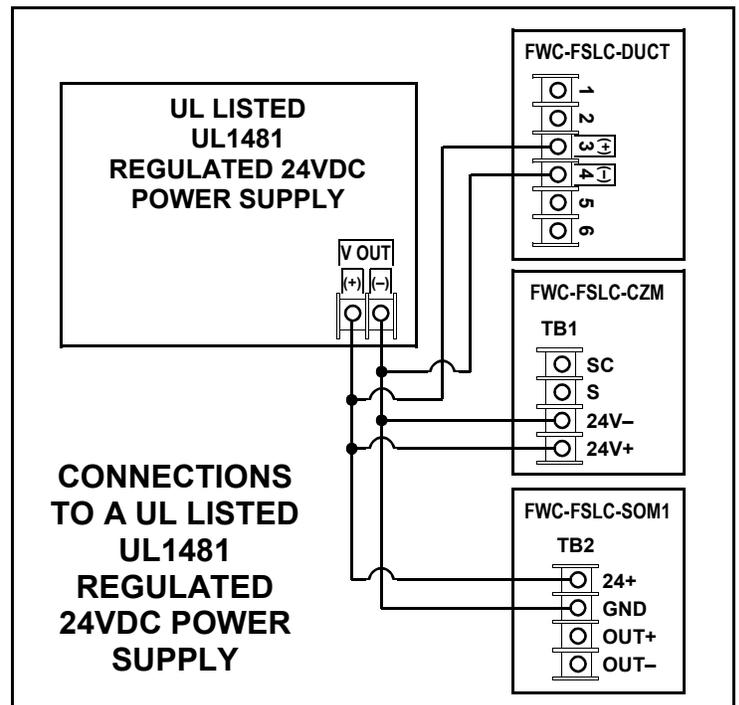
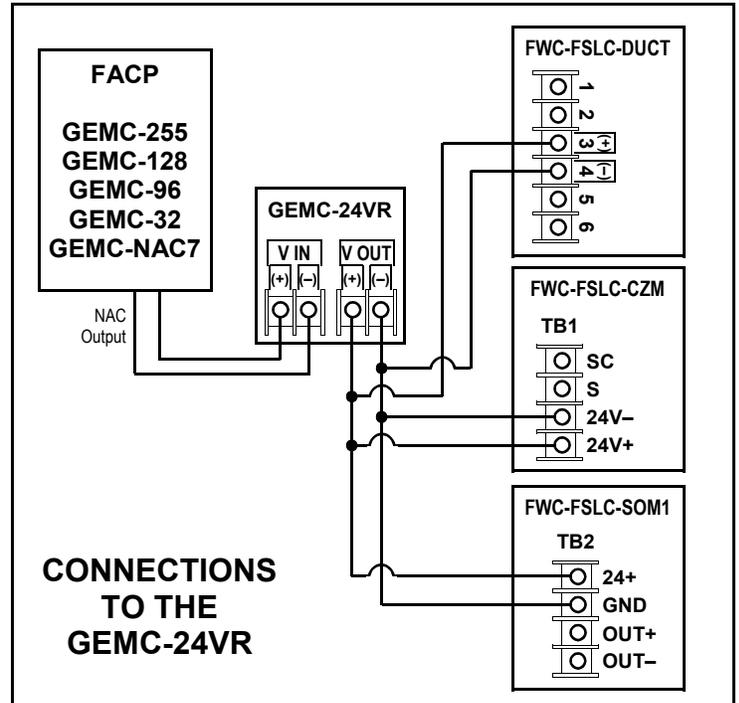
For devices without mounting bases, connect the negative wire(s) to the device terminal marked [SC -] and connect the positive wire(s) to the positive device terminal (marked "S+").

9. Before the system can be put into operation, and to ensure the panel is free of errors, the panel program **MUST** be uploaded into PCD-Windows Quickloader software and then downloaded back to the panel from PCD-Windows. This "Error Check" of the system is always performed by PCD-Windows when downloading to the control panel to ensure all changes made to

the panel programming do not conflict with any new or existing programming.

REGULATED 24VDC CONNECTIONS

The **FWC-FSLC-SOM1**, **FWC-FSLC-DUCT** and **FWC-FSLC-CZM** require regulated 24VDC from the GEMC-24VR output module (recommended) or a UL Listed UL1481 regulated 24VDC power supply. See wiring diagrams below.



SYSTEM CONFIGURATION DATA SHEET

PANEL ZONE #	ZONE DESCRIPTION	INSTALLATION LOCATION	6-CHARACTER RF/SLC POINT DEVICE ID			DEVICE POINT	STANDBY CURRENT	ALARM CURRENT
			RF/SLC DEVICE	DEVICE TYPE	RECEIVER/SLC ADDRESS			
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								
16.								
17.								
18.								
19.								
20.								
21.								
22.								
23.								
24.								
25.								
26.								
27.								
28.								
29.								
30.								
31.								
32.								
33.								
34.								
35.								
36.								

Note: Standby current may be determined by clicking **Tools, System Current Calculator (Burg SLC 1 tab)** in Quickloader to calculate SLC current.

MAPPING THE FIRE INPUT DEVICES

METHOD 3: PCD-WINDOWS DOWNLOAD

OVERVIEW

ALL devices can be mapped using PCD-Windows Quickloader download software. As shown above, Method 1 and Method 2 use menu selections within the keypad; Method 3 makes full use of the PCD-Windows Quickloader download software, and thus might be considered the easiest method for mapping devices. Method 3 is basically the same as Method 2, except that instead of selecting zone numbers and adding the calculated 6-character ID using the keypad, the data is added to PCD-Windows and then downloaded to the control panel.

As with Method 2, a detailed diagram of the Fire alarm system is used to collect the information needed to program PCD-Windows. Therefore, use the detailed planned layout to create a complete list detailing the specific installation location for each device, the specific panel zone to which each device will be mapped and the specific six-character internal ID for each device can be determined.

In addition, the physical wiring can be performed before or after PCD-Windows is programmed.

Note: Because Fire devices can be sensitive to dusty environments, the installer may wish to wait until after any construction dust has settled before installing the devices themselves. In addition, prior to installing the actual devices, the installer **MUST** pre-program each device with the FWC-FSLC-PROG2 programming tool, physically marking each device with its assigned internal device address (001-126) to simplify the installation.

The system can be powered or unpowered when the devices are installed; in the end, a powered system will look for and configure each device for correct operation.

Note: If you wish map devices FWC-FSLC-SOM1 and FWC-FSLC-RM2, you must use PCD-Windows Quickloader download software (Method 3); see page 8. If you wish to install an FWC-FSLC-ISO device, turn to page 16.

Remember, what makes using PCD-Windows so convenient and efficient is that all data can be entered and saved within PCD-Windows even before visiting the installation site. If you wish to perform all wiring of the GEMC-FW-SLC devices before the system is programmed, proceed to the section **"WIRING"**, below. If you wish to enter the SLC data to PCD-Windows, go to the section **"PCD-WINDOWS"**, below. Just be sure steps 1-3 are performed before placing the system into operation.

WIRING

Some devices have two negative and two positive wires each, others may have only one each if they are located at the end of a loop. See Class A and Class B wiring examples earlier in this manual and the installation instructions for each device for more information.

Note: Because Fire devices can be sensitive to dusty environments, the installer may wish to wait until after any construction dust has settled before installing the devices themselves. In addition, prior to installing the actual devices, the installer **MUST** pre-program each device with the FWC-FSLC-PROG2 programming tool, physically marking each device with its assigned internal device address (001-126) to simplify the installation.

For devices with mounting bases, connect the GEMC-FW-SLC loop wires from the GEMC-FW-SLC module(s) to

the device mounting bases, observing polarity, and insert all devices into their bases. Connect the negative wire(s) to the device terminal marked [SC -] and connect the positive wires to the positive device terminal (marked "S+"). Devices with bases include the FWC-FSLC-SMK and the FWC-FSLC-HEAT.

For devices without mounting bases, connect the negative wire(s) to the device terminal marked [SC -] and connect the positive wire(s) to the positive device terminal (marked "S+"). **Note:** Fire devices are polarity sensitive.

PCD-WINDOWS

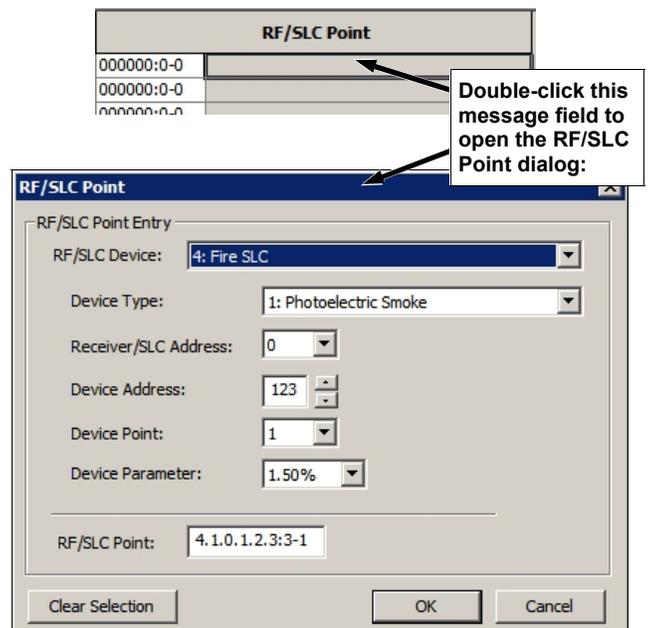
Open PCD-Windows and if creating a new Account, select "Combo Panel" for the panel type, and the Download Security Code is located on a triangle-shaped sticker on the control panel PC board.

1. PCD-Windows must first be informed that the GEMC-FW-SLC module exists and to look for it in its correct address location as set by its dip switches and its plug/connector. Click the **System Assignment** button; in the **System Assignment** screen, click the **RF Receivers / SLC** tab, click the **SLC Fire Address 1** radio button. If a Class A style wiring to the SLC device was used, check the **Class A** checkbox. If Class B style wiring to the SLC device was used, uncheck the **Class A** checkbox. Click **OK** to save.
2. In the **Workspace** (press Ctrl + Shift + W), click **Zone Assignment**. Notice the 6-character ID for each device is entered into the **RF/SLC Point** column in the **Zone Assignment** screen. The **RF/SLC Point** column displays the series of 6 zeros, followed by a colon (":") and two additional zeros separated by a dash ("-"), as shown:

"000000:0-0"

See the section **"Device Six-character ID"** for a full explanation of these six-plus-two characters.

Simply click to highlight the first zero, and type the 6-character ID for the device to be assigned to that zone. You can also open the **RF/SLC Point** dialog box that allows you to build each element of the 6-character ID by double-clicking the message field to the right of the **RF/SLC Point** column, as shown:



The **RF/SLC Point** dialog box allows you to click pull-down menus and scroll buttons to input the data. Calculate the 6-character ID as follows:

RF/SLC Device (first character): This pull-down identifies the device as a Fire SLC device, always "4" for devices wired to the GEMC-FW-SLC module.

Device Type (second character): This pull-down identifies the device model "Type", digits 1-9, as selected from the following list:

- 1: **FWC-FSLC-SMK** Photoelectric Smoke
- 2: **FWC-FSLC-HEAT** Heat Sensor
- 3: **FWC-FSLC-PULL** Analog Manual Pull Station
- 4: **FWC-FSLC-EZM1, -EZM1B** Fast Response Contact Monitor Module
- 5: **FWC-FSLC-SOM1** Supervised Output Module
- 6: **FWC-FSLC-RM2** Dual Relay Module
- 7: **FWC-FSLC-DUCT** Photoelectric Duct Sensor
- 8: **FWC-FSLC-EZM2** Dual Input Monitoring Module
- 9: **FWC-FSLC-CZM** Conventional Zone Module

Receiver/SLC Address (third character): This pull-down identifies the address number of the GEMC-FW-SLC PC board module to which the device is wired, as indicated by its "ADDR" dip switches (see the section, "**MOUNTING AND WIRING THE MODULE**").

Device Address (fourth through sixth characters): This numerical scroll field assigns the internal address of the device (decimal 001-126).

Other fields may appear depending on the **Device Type (second character)**; the **Device Point** appears if the FWC-FSLC-EZM2 is selected, identifying the first or second independent zone input contact monitoring circuit that will be associated with the selected control panel zone. Another field, the **Device Parameter**, appears when the FWC-FSLC-SMK Photoelectric Smoke or the FWC-FSLC-HEAT Heat Sensor is selected, allowing a range of values to be selected to identify the characteristics of the device in use.

Notice that as these fields are populated with data, the **RF/SLC Point** field at the bottom of the dialog box also populates with data. **Note:** The digit after the colon is a sum check digit, calculated by PCD-Windows after all other characters are saved into memory, and should be disregarded as it has no effective use by the installer.

When finished entering data, click the **OK** button to save or click **Cancel** to exit without saving. In PCD-Windows, you can always click **File, Save Work** to update and retain all data previously entered.

Repeat for all other devices and zones, and remember to save your work.

OTHER CONSIDERATIONS

Before downloading the data from PCD-Windows to the control panel, be sure the following conditions exist:

- The GEMC-FW-SLC module must be connected to the correct SLC jack on the Gemini C-Series control panel motherboard via its supplied 4-wire harness, and the "ADDR" dip switches are set correctly (see the section "**MOUNTING AND WIRING THE MODULE**").
- A GEMC-FK1 keypad is connected to the control panel keypad bus, and the system control panel is powered up. Ensure this GEMC-FK1 keypad is configured in the **Keypad Assignment** screen as **Keypad 1**, and its **Type** is selected as **"Fire"**. Note that upon power up, some installations may cause troubles to appear. You can silence the system trouble audibles by first unlocking the keypad with the 6-digit Master Security Code and pressing **ENTER**; then press **ACK**. to silence the troubles.
- Make sure the Fire keypad displays the panel trouble E28 "Error Check Required"; if not, you must unlock the keypad and select "ENABLE PROGRAMMING" in the keypad Function Menu (refer to the "**ENABLE PROGRAMMING**" section above for instructions).

To ensure the control panel is free of errors, an "Error Check" of the system is performed when downloading the panel program (from PCD-Windows Quickloader software to the control panel) thus ensuring the new programming does not conflict with any existing programming in the control panel.

To Download: If local downloading, connect the computer to a PCI2000 Computer Interface module, then connect the PCI2000 to the RJ-45 receptacle located on the bottom left of the control panel PC board. **Note:** The RJ-45 receptacle used by the system is selected via PCD-Windows Quickloader using the **Communication** screen.

Click the **Local Communication** button to start the download to the panel process.

After completing the PCD-Windows download process, the control panel begins to download data to the GEMC-FW-SLC module(s) to permit communication to devices that may be already wired to the module or to devices that may be added later. At the end of this data transfer, the keypad will display "PLEASE WAIT SYSTEM INITIALIZING" indicating that the system is busy while the GEMC-FW-SLC module(s) are looking for any existing SLC devices wired to the SLC loop (this process may take several minutes). **Note:** The **Trouble** keypad icon will appear.

Test all devices in the system as detailed in the **TESTING THE DEVICES** section, below.

MAPPING THE FIRE OUTPUT DEVICES

DESCRIPTION OF SYSTEM OUTPUTS

The Gemini C-Series control panel motherboards have the ability to provide up to seven (7) integral programmable outputs, four (4) optional Burglary outputs requiring the GEMC-BM or GEMC-BM/PS, and 88 additional external outputs requiring external modules and devices. These outputs are either **Fire outputs** or **Burglary outputs** as follows:

- **Fire outputs** are available on the motherboard Fire Bus output modules (GEMC-OUT8 or GEMC-RM3008) or the Fire SLC relay modules (FWC-FSLC-SOM1 and FWC-FSLC-RM2).
- **Burglary outputs** are available on the Burglary modules (GEMC-BM or GEMC-BM/PS), Burg Bus output modules (GEMC-OUT8 or GEMC-RM3008) or the Burglary SLC relay module (GEMC-BSLC-RLY). For more information regarding the Burglary outputs, see the GEMC-BSLC Burg SLC module installation instructions, WI1648.

Motherboard Integral Fire Outputs

The motherboard has seven (7) integral programmable outputs:

- Three 24V regulated NAC outputs;
- One NAC output selectable for 24V regulated or 12V regulated output;
- One unsupervised Form-C relay output selectable for 12V regulated or dry contacts; also suitable as a trouble output;
- Two active-low unsupervised 2A outputs (requires power-limited connection from panel **AUX PWR** output or other listed power supply with maximum voltage of 28VDC).

In addition, the motherboard also has a dedicated unsupervised **TBL** (trouble) sounder output that activates when there is a keypad 1 supervision failure.

88 Additional External Outputs

The system supports up to 88 additional external outputs, enabled in 11 "groups" of eight and enabled only on the addressed device. Each group of eight is distinctly addressed as group "1" through group "11", and only one group of the same address may be placed on the system. Additionally, the groups do **NOT** have to be contiguous (output groups can skip addresses, if desired).

Of the 88 external outputs, the first 40 external outputs (the first 5 groups) can be dedicated to external Fire outputs; the remaining 48 external outputs (outputs 41-88) **must** be non-Fire (thus Burglary) outputs. **Note:** Only these first 40 external outputs are able to have a description appear on the GEMC-FK1 Fire keypad LCD display.

GEMC-OUT8 & GEMC-RM3008 Modules

Of the first 40 external Fire outputs, the GEMC-OUT8 output module provides one group of eight unsupervised active low outputs, and the GEMC-RM3008 relay module provides one group of eight unsupervised Form C dry relay contact outputs. These outputs can be used for controlling bells, door latches, lights, strobes and other similar devices.

With the GEMC-RM3008 and the GEM-OUT8, the panel controls the closure of each relay or output. The panel identifies the relay or output by the proper placement of 4 address jumpers located on the module printed circuit board. For example, when relay number 1 is activated, relay #1 of module #1 activates if it is on the system. If output number 88 is activated, the 8th output of the module #11 is activated. See the **GEMC-FW-SLC EXTERNAL OUTPUT ASSIGNMENT** chart. For more information, see WI1706 (GEMC-RM3008 installation instructions) and WI1707 (GEMC-OUT8 installation instructions).

FWC-FSLC-RM2 & FWC-FSLC-SOM1 Devices

Two GEMC-FW-SLC Fire SLC module output devices are available: The FWC-FSLC-RM2 Dual Relay Module provides two unsupervised independently configurable Form C relay contacts per address, and the FWC-FSLC-SOM1 Supervised Output Module provides a single supervised NAC output (requires a listed power supply, properly installed, to power the output). Each GEMC-FW-SLC can support 11 relay groups (of 8 relays each), allowing up to a maximum of 88 FWC-FSLC-SOM1's and/or FWC-FSLC-RM2's on the GEMC-FW-SLC.

To be used in the system, the FWC-FSLC-RM2 and the FWC-FSLC-SOM1 must be pre-programmed prior to installation to the correct internal device address using the FWC-FSLC-PROG2 hand held programming tool. The SOM / RM2 must be programmed with a **FWC-FSLC-PROG2** hand held programmer as 126 to 103. (The progression is as follows: 126 is Relay #1, 125 is relay #2 ... 103 is relay #24). The address (126-103) is determined by the number of the External Relay as directed by the **GEMC-FW-SLC EXTERNAL OUTPUT ASSIGNMENT** chart. In addition, the selected GEMC-FW-SLC module must also be configured for the correct relay group (1-8) using the **RELAY** dip-switch located on the module printed circuit board.

For more information, see WI1715 (FWC-FSLC-RM2 installation instructions) and WI1717 (FWC-FSLC-SOM1 installation instructions).

Note: If two relays are added to the FWC-FSLC-RM2, the second relay must be mapped to the same relay group as the first relay.

Each SLC can have all three relay groups enabled, but the system can not have duplicate relay group address numbers on the same or different busses.

Preliminary Steps

When using Output Devices with the GEMC-FW-SLC module(s), the associated GEMC-FW-SLC (addressed as 1 or 2) must have the "RELAY" dip switches set to the correct group number(s). The "RELAY" dip switches are located on the right side of the GEMC-FW-SLC module printed circuit board and provide for up to 11 relay groups. Only the first 5 selections can be used, as follows:

- If devices are used in the first relay group (external relay outputs 1-8), switch 1 must be set (pushed up).
- If devices are used in the second relay group (external relay outputs 9-16), switch 2 must be set (pushed up).
- If devices are used in the third relay group (external relay outputs 17-24), switch 3 must be set (pushed up).
- If devices are used in the fourth relay group (external relay outputs 25-32), switch 4 must be set (pushed up).

- If devices are used in the fifth relay group (external relay outputs 33-40), switch 5 must be set (pushed up). The devices must also be wired correctly to the GEMC-FW-SLC, as shown on their individually printed installation instructions.

MAPPING PROCEDURE

Output Devices (FWC-FSLC-SOM1 and FWC-FSLC-RM2) can ONLY be mapped to a panel External Output via PCD-Windows Quickloader download software. Using PCD-Windows, the selected panel External Output must be enabled before being programmed to activate upon appropriate events. Once programmed, features may then be assigned to the External Outputs. Proceed as follows:

1. Enable panel External Output(s)

Open the **NAC/OUTPUT Assignment** screen, click the *External Output Assignment* tab.

1. In the first **Board Type** pull-down menu, select "Fire Output on Fire SLC 1" or "Fire Output on Fire SLC 2" in the associated output group.
2. In the **Device Type** column, pull-down menus appear allowing the selection of devices; select the Device Type, noting the following rules:
 - A "**R2M on 2nd Relay**" may not be the first device of an output group.
 - If "**R2M on 2nd Relay**" is selected, it must be immediately preceded by an "**R2M on 1st Relay**" with the same device address.

2. Program the selected panel External Output(s) to activate on the appropriate event(s).

For External Outputs 1-8, open the **Feature View** screen and program the selected Fire External Output to activate any zone numbered 1-255 upon alarm. For External Outputs 9-40, use the **NAC/OUTPUT Assignment** screen (in the *NAC/OUTPUT Events* tab).

3. Assign the selected panel External Output(s) features as displayed in the *External Output Assignment* tab and in the *NAC/Output Reporting* tab.

- If the devices wired to the SLC device Output are **intended to remain on until all fire alarm conditions restore** (for example, a strobe) then do not program SILENCEABLE, SUPPLEMENTAL, REVERSE POLARITY or FIRE RESET.
- If the devices wired to the SLC device Output are **intended to turn off when [SILENCE] is pressed** (audible sounding appliances) then program SILENCEABLE, but do not program SUPPLEMENTAL, REVERSE POLARITY or FIRE RESET.
- If the devices wired to the SLC device Output are **intended for supplementary devices that will turn off when [RESET] is pressed**, program SILENCE NON-FIRE, but do not program SILENCE or REVERSE POLARITY.
- If the devices wired to the SLC device Output are **intended to be normally energized and have power removed when a fire alarm occurs and power restored after fire alarms are reset** (for example, a fire door latch), then program REVERSE POLARITY, do not program SILENCE or SILENCE NON-FIRE.

FIRE SLC SYSTEM TROUBLES

The following system-trouble codes displayed at the keypad(s) are related to SLC operation. For more information regarding these troubles, see the Gemini C-Series motherboard installation instructions, WI1653.

SLC DEVICE TROUBLES

Displayed with the transmitter trouble code are the zone number to which device 1 is mapped, and the transmitter's identification number.

E35 – Fire Supervised output trouble. Check the following:

1. NAC's A-D open or short on output.
2. GEMC-SLC-SOM has open or short.
3. GEMC-SLC-SOM is not powered correctly. "NN" is the external output number.

E66 – RF (Wireless) SLC transmitter sensitivity trouble. Transmitter is indicating it needs to be cleaned or its sensitivity is falling below an acceptable level. NNN is the associated zone number; XXXXXX is the Device Six-Character ID number.

E92 – "Unmapped" Device Trouble. One or more Fire SLC device(s) associated with the GEMC-FW-SLC Fire SLC module was found on the loop but not mapped (programmed) to any zone.

E94 – A response failure in a Fire SLC device mapped to a GEMC-FW-SLC Fire SLC Module. The device was learned correctly during installation, but has stopped responding.

E97 – Trouble detected on a Fire SLC device. Each device generates troubles specific to its Type (see list numbered 1-9 below) and all troubles are indicated with this trouble except the E66 "CleanSmk" sensitivity trouble. NNN is the associated zone number; XXXXXX is the Device Six-Character ID number (the second number from left is the "Type" as per the list below). To determine the specific trouble, PCD-Windows Quickloader "Status Upload" must be performed. Each device Type is as follows:

- 1: FWC-FSLC-SMK Photoelectric Smoke
- 2: FWC-FSLC-HEAT Heat Sensor
- 3: FWC-FSLC-PULL Analog Manual Pull Station
- 4: FWC-FSLC-EZM1, -EZM1B Fast Response Contact Monitor Module
- 5: FWC-FSLC-SOM1 Supervised Output Module
- 6: FWC-FSLC-RM2 Dual Relay Module
- 7: FWC-FSLC-DUCT Photoelectric Duct Sensor
- 8: FWC-FSLC-EZM2 Dual Input Monitoring Module
- 9: FWC-FSLC-CZM Conventional Zone Module

MODULE TROUBLES

Note: Also displayed with the module trouble code is the module number.

E14 – NAC / Relay board response failure. NNN = Relay board number (address). Check to make sure correct Relay group address jumpers are set (no duplicates) and GEMC-RM3008's and GEMC-OUT8's are wired to Fire bus (not Burg bus). If the GEMC-FW-SLC is used, check to ensure correct relay group dip switch settings.

E90 – Fire SLC module memory failure. Indicates the onboard memory of the Fire SLC device is not working as intended. Attempt to correct by downloading via PCD-Windows. Replace module if trouble persists.

E96 – GEMC-FW-SLC Fire SLC Module wiring trouble. Short detected on Class B loop; open or short detected on a Class A loop. Check SLC loop wiring connections. NNN = module number.

INSTALLING AN FWC-FSLC-ISO

An FWC-FSLC-ISO Loop Short Circuit Isolator is used to prevent a short from disabling the entire GEMC-FW-SLC polling loop. For Class A wiring, an FWC-FSLC-ISO must be placed at the very start of the loop (before the first device) and one placed at the very end of the loop (after the last device); additional isolators can also be added throughout the polling loop, as desired. For more information, see WI1716.

REPLACING A DEVICE

There are 2 methods to replace a malfunctioning or damaged Fire device: *Easy Enroll* and *Direct Device Replacement*.

EASY ENROLL

1. Determine zone, type and location of malfunctioning Fire device.
2. Acquire same type of device with factory address 127.
3. Remove damaged device.
4. Enter Easy Program Enroll Mode at keypad.
5. Enter the associated zone number.
6. Insert new device into the loop.
7. Confirm device is enrolled.
8. Exit Easy Program Mode by pressing **Reset**.
9. Wait for keypad indicate the SLC's have finished configuring (may take up to 7 minutes).
10. Confirm system operation.

DIRECT DEVICE REPLACEMENT

*(This method requires a Napco **FWC-FSLC-PROG2** Programmer)*

1. Determine zone, type, Napco Address* and location of malfunctioning Fire device.
2. Acquire same type of device.
3. Program the device using Napco **FWC-FSLC-PROG2** Programmer to the identical Napco number.
3. Replace damaged device with programmed device.
4. Confirm system operation.

* *Napco address is the same as the last three digits of the existing device address.*

FUNCTION MENU FIRE KEYPAD

REINITIALIZE FSLC (Dealer access only). This menu item is typically used when replacing a defective SLC device while keeping the existing Fire system in operation (thus allowing the Fire system to continue protecting life and property). The menu item is designed to re-initialize (establish a "starting" condition) for each Fire SLC device in the system to ensure valid communication and correct device operation.

When this menu item is first initiated, each Fire SLC device "type" is accessed (this process takes about 20 seconds) to ensure each device's ability to communicate with the Fire SLC board. Next, the SLC loop is polled, and for each complete poll around the loop, a single device is targeted and is re-initialized completely using the pre-existing programming data already stored in the Fire SLC board's flash memory.

Note: This re-initialization process may take up to 1.25 hours to complete, depending on the number of SLC devices in the system. However, the system will be capable of responding to any Fire initiating device alarm during this period.

When you wish to re-initialize the Fire SLC devices, and the system does not need to remain in operation, one of the following two methods can be used:

1. Re-power the Fire SLC module (may take up to 7 minutes to complete).
2. In the PCD-Windows Quickloader toolbar, click **Panel History**, **Status History**, and click the "**Fire SLC Init**" button (may take up to 7 minutes to complete).

GEMC-FW-SLC EXTERNAL OUTPUT ASSIGNMENT CHART

EXTERNAL OUTPUT #	DESCRIPTION	RLY DIP SWITCH SET					DEVICE TYPE			
		1	2	3	4	5	NONE	RM2 RLY1	RM2 RLY2	SOM
1		Y								
2		Y								
3		Y								
4		Y								
5		Y								
6		Y								
7		Y								
8		Y								
9			Y							
10			Y							
11			Y							
12			Y							
13			Y							
14			Y							
15			Y							
16			Y							
17				Y						
18				Y						
19				Y						
20				Y						
21				Y						
22				Y						
23				Y						
24				Y						
25					Y					
26					Y					
27					Y					
28					Y					
29					Y					
20					Y					
31					Y					
32					Y					
33						Y				
34						Y				
35						Y				
36						Y				
37						Y				
38						Y				
39						Y				
40						Y				

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This warranty shall not apply to any equipment, or any part thereof, which has been repaired by others, improperly installed, improperly used, abused, altered, damaged, subjected to acts of God, or on which any serial numbers have been altered, defaced or removed. Seller will not be responsible for any dismantling or reinstallation charges.

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In case of defect, contact the security professional who installed and maintains your security system. In order to exercise the warranty, the product must be returned by the security professional, shipping costs prepaid and insured to NAPCO. After repair or replacement, NAPCO assumes the cost of returning products under warranty. NAPCO shall have no obligation under this warranty, or otherwise, if the product has been repaired by others, improperly installed, improperly used, abused, altered, damaged, subjected to accident, nuisance, flood, fire or acts of God, or on which any serial numbers have been altered, defaced or removed. NAPCO will not be responsible for any dismantling, reassembly or reinstallation charges.

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behalf to modify, to change, or to assume for it, any other warranty or liability concerning its products.

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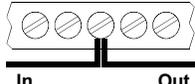
NAPCO RECOMMENDS THAT THE ENTIRE SYSTEM BE COMPLETELY TESTED WEEKLY.

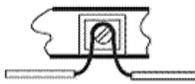
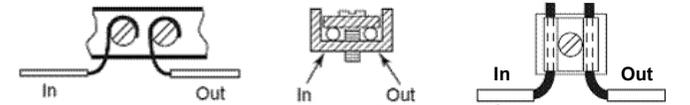
Warning: Despite frequent testing, and due to, but not limited to, any or all of the following; criminal tampering, electrical or communications disruption, it is possible for the system to fail to perform as expected. NAPCO does not represent that the product/system may not be compromised or circumvented; or that the product or system will prevent any personal injury or property loss by burglary, robbery, fire or otherwise; nor that the product or system will in all cases provide adequate warning or protection. A properly installed and maintained alarm may only reduce risk of burglary, robbery, fire or otherwise but it is not insurance or a guarantee that these events will not occur. CONSEQUENTLY, SELLER SHALL HAVE NO LIABILITY FOR ANY PERSONAL INJURY, PROPERTY DAMAGE, OR OTHER LOSS BASED ON A CLAIM THE PRODUCT FAILED TO GIVE WARNING. Therefore, the installer should in turn advise the consumer to take any and all precautions for his or her safety including, but not limited to, fleeing the premises and calling police or fire department, in order to mitigate the possibilities of harm and/or damage.

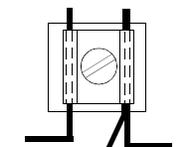
NAPCO is not an insurer of either the property or safety of the user's family or employees, and limits its liability for any loss or damage including incidental or consequential damages to NAPCO's original selling price of the product regardless of the cause of such loss or damage.

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IMPORTANT WIRING METHODS

 <p>For single-conductor terminal blocks (like the type shown at left), to terminate more than one conductor to a terminal, use the wiring methods shown at right:</p>	 <p>Incorrect</p>	 <p>Correct -- Single incoming and/or pigtail with wire nut / crimp connectors</p>
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 <p>For "barrier" type terminal blocks (like the type shown at left), to terminate two conductors to a terminal, use the wiring methods shown at right:</p>	 <p>Incorrect</p>	 <p>Correct -- Separate incoming and outgoing conductors</p>
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<p>To terminate more than two conductors or conductors of different wire sizes to a terminal, use the "pigtail" type wiring method as shown at right. Use insulated wire for the pigtail, and firmly secure the conductors to the pigtail using an appropriate wire nut or crimp connector for the number and gauge of conductors used.</p>	 <p>Incorrect</p>	 <p>Correct -- Use pigtail and wire nut / crimp connector</p>
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