INSTALLATION INSTRUCTIONS VOLUME 3

REFERENCE DOCUMENTATION

- FOR CONTROL PANEL FIRMWARE **V85** OR LATER;
- FOR PCD-WINDOWS QUICKLOADER **V6.3.2** OR LATER
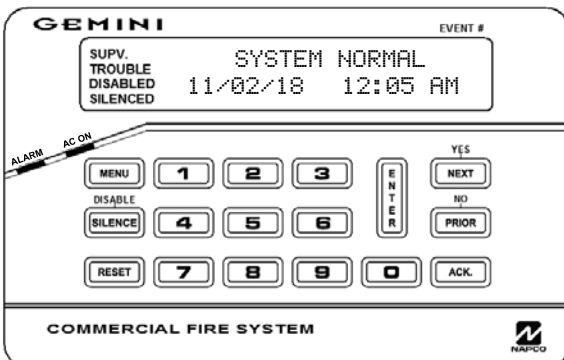
HARDWIRE = •))) *WIRELESS*
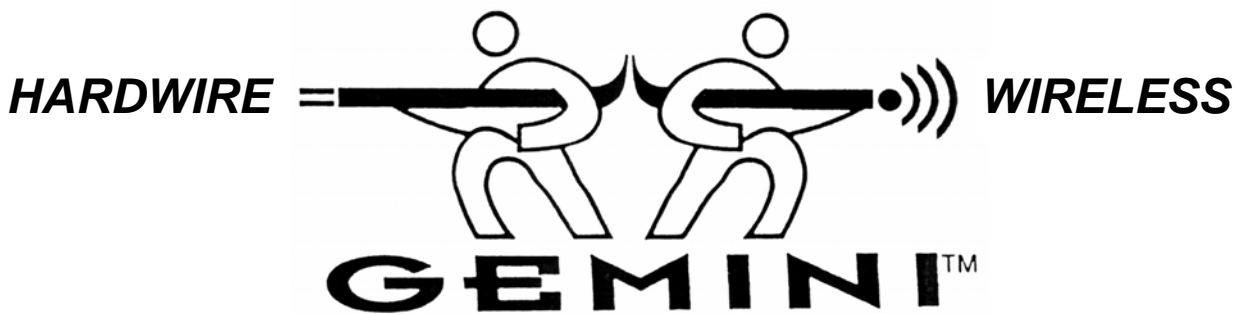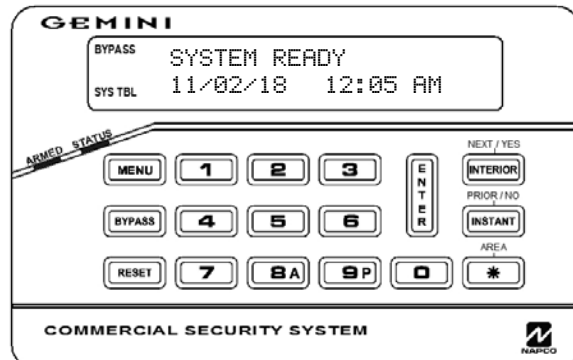
GEMINI™

COMMERCIAL / RESIDENTIAL
GEMC-255
GEMC-128
GEMC-96
GEMC-32

CONTROL PANEL / COMMUNICATOR

Installing the GEMINI C-Series Control Panels with the
GEMC-FK1 Keypad and the **GEMC-BK1** Keypad

GEMC-FK1 Keypad

GEMC-BK1 Keypad

THIS MANUAL INCLUDES FEATURES WHICH ARE ONLY AVAILABLE IN CONTROL PANEL FIRMWARE VERSION 85 OR LATER, AND REFLECTS THE FEATURES FOUND IN PCD-WINDOWS QUICKLOADER DOWNLOAD SOFTWARE VERSION 6.3.2 OR GREATER.

DISCLAIMER

Napco Security Technologies, Inc. (Napco) makes no representations or warranties with respect to the contents hereof and specifically disclaims any implied warranties of merchantability or fitness for any particular purpose. Further, Napco reserves the right to revise this publication and to make changes from time to time in the content hereof without obligation of Napco to notify any person of such revision or changes.

Information furnished by Napco is believed to be accurate and reliable. However, no responsibility is assumed by Napco for its use; nor for any infringements of other rights of third parties which may result from its use. No license is granted by implications or otherwise under any patent or patent rights of Napco.

Microsoft® and Windows® are registered trademarks of the Microsoft Corporation.

All other trademarks cited in this manual are for reference only and are the property of their respective owners.

For systems that include CO detectors, the system must be monitored by a central station.

Napco Security Technologies, Inc., 333 Bayview Avenue, Amityville, New York 11701
Publicly traded on NASDAQ   Symbol: NSSC
Visit our website at http://www.napcosecurity.com/
For Sales and Repairs - (800) 645-9445
Fax: 631-789-9292

FOR HELP CALL US	**NAPCO Security Systems, Inc.** **333 Bayview Avenue, Amityville, New York 11701** **For Sales and Repairs, call toll free: (800) 645-9445** **For direct line to Technical Service, call toll free: (800) 645-9440** **Internet: http://www.napcosecurity.com**	**Contact your Local Service** **Representative:** _____ _____ _____ _____

TABLE OF CONTENTS

NOTE: THESE INSTRUCTIONS ARE INTENDED AND WRITTEN FOR PROFESSIONAL INSTALLATION PERSONNEL HAVING SUITABLE TRAINING, EXPERIENCE AND INSTALLATION EQUIPMENT. IT IS RECOMMENDED THAT AFTER PROGRAMMING, THE ERROR CHECK UTILITY OF PCD-WINDOWS DOWNLOAD SOFTWARE BE USED TO VERIFY THAT THE CONTROL PANEL PROGRAM CONTAINS NO ERRORS OR CONFLICTS WHICH MAY INHIBIT ITS INTENDED OPERATION.

SPECIFICATIONS AND RATINGS

Note: See individual accessory work instructions (WI's) for exceptions and other information.

GEMC-255MB, GEMC-128MB, GEMC-96MB and GEMC-32MB Gemini C-Series Motherboards

Motherboard Power Supply (GEMC-PS24V7A and GEMC-PS24V4A) Input Power: 120AC 60Hz, 3A; maximum 15A dedicated branch circuit.

Motherboard (GEMC-255MB, GEMC-128MB, GEMC-96MB and GEMC-32MB) Input Power: 24VDC, maximum 7A.

Output Power:
Note: All outputs circuits are power-limited.
Note: The GEMC-96MB and GEMC-32MB provide two 2A NAC circuits (one 24V and one 12V or 24V selectable).

- **NAC A, NAC B, NAC C:** Regulated 24V NAC circuit; 2A maximum. When configured for 24V Auxiliary Power, it is a Special Application output only listed with the GEMC-24VR. The GEMC-24VR output is Regulated 24VDC, 1A maximum.
- **NAC D: When configured for 24V:** Regulated 24V NAC circuit; 2A maximum. When configured for 24V Auxiliary Power, it is a Special Application output only listed with the GEMC-24VR. The GEMC-24VR output is Regulated 24VDC, 1A maximum.
- **NAC D: When configured for 12V:** Regulated 12V NAC circuit, 2A maximum or Regulated 12V Auxiliary Power, 1.4A maximum.
- **Fire Aux. Relay Output:** Wet: 12V Regulated, 750mA max.; Dry: Remove shunt for dry contacts; see Wiring Diagram; dry contact Form C relay rated 30VAC / VDC, 2.5A maximum.
- **Two Active low programmable outputs:** (2A maximum). **Note:** Relies on 2A over-current protection of connected circuit.
- **Trouble Sounder Output:** 12V Regulated, 30mA.
- **E7 and E8 Terminals:** Active low open collector outputs; 0.1V, 2A (wire only to power limited circuits 30VDC or less).
- **Auxiliary Power Output:** Output 12V Regulated @ 750mA maximum current.
- **Remote Bus Power Output:** 12V Regulated @ 750mA maximum current, supporting up to 7 keypads, zone expansion modules, or wireless receivers, etc.
- **Auxiliary Power 24V Regulated:** Can only be supplied through NAC A, NAC B, NAC C or NAC D (configured for 24V) programmed for Reverse Polarity and wired to GEMC-24VR. 1.0A* Maximum (must reduce total combined standby and alarm current by 1.1 times 24V Regulated current).
- **Maximum Combined 12V Regulated standby current:** Remote Power + Auxiliary Power + NAC D 12V Output and programmed for Reverse Polarity + AUX relay if shunt connector is installed:
  plus GEMC-BM total standby current plus 25mA;
  plus Fire Relay: 35mA (when energized);
  plus GEMC-F8ZCPIM total combined standby current +120mA = 1.4A*.
  If additional 12V current is required, use the GEMC-12V2APS-CF (for Fire applications) and/or GEMC-12V2APS-R (for non-Fire applications) Auxiliary Power supplies.
- **Maximum Total Combined 12V Regulated Standby and Alarm Current:** Remote Power + Auxiliary Power + NAC D 12V Output and programmed for Reverse Polarity + AUX relay if shunt connector is installed + NAC D alarm current:
  plus GEMC-BM total combined standby and alarm current + 25mA;
  plus GEMC-F8ZCPIM total standby and alarm current).
- **Maximum Total Combined 24V Standby:** (Total combined 12V standby plus alarm current times 0.6) + NAC A-D 24V standby current:
  plus (GEMC-BM total combined standby + 25mA) times 0.6;
  plus (GEMC-F8ZCPIM total combined standby + 120mA) times 0.6;
  plus GEMC-BM/PS total combined standby + 25mA;
  plus GEMC-FW-SLC total combined 24V standby current;
  plus GEMC-BSLC total combined 24V standby current = 1A*.

- **Maximum Total combined 24V Standby and Alarm Current:** (Total combined 12V standby plus alarm current times 0.6) + NAC A-D 24V standby plus alarm current:
  plus (GEMC-BM total combined standby and alarm current + 25mA) times 0.6;
  plus GEMC-BM/PS total 24V standby and alarm current + 25mA;
  plus GEMC-FW-SLC total combined 24V standby and alarm current;
  plus GEMC-BSLC total combined 24V standby and alarm current **=** 6.8A with 7A supply (GEMC-PS24V7A); 3.8A with 4A supply (GEMC-PS24V4A).
- **Maximum Battery Charging Current:** Refer to the GEMC-PS24V7A or GEMC-PS24V4A power supply specifications. The maximum charging current (trickle charge and fast charge) and the maximum ampere-hour capacity of the battery that the product is intended to charge:

Standby Time: See following charts.
Battery Power: See tables in sections "**GEMC-PS24V7A 7 AMP POWER SUPPLY**" and "**GEMC-PS24V4A 4 AMP POWER SUPPLY**" (data also located in WI1646 and WI1702).
Loop Voltage: See zone expansion modules.
Loop Current: See zone expansion modules.
Loop Resistance: See zone expansion modules.
Operating Environment: 0-49°C (32-120°F).

Modules that plug into the GEMC-XXXMB Gemini C-Series Motherboards:

GEMC-BM / PS Burglary Module with Power Supply
Electrical Ratings
Input Power: 24V, 25mA standby from motherboard plus 0.6 multiplied by the "**Total Combined Standby and Alarm Current**".
Output Power:
Burg Bell Power: 10.8 - 12.5VDC, 2A maximum.
AUX Power: 11.3 - 12.5VDC, 750mA maximum.
Burg Bus Power ("Remote Bus Power"): 11.2 - 12.5VDC, 750mA maximum.
PGM1: Active low, 8.2 - 12.0V @ 150mA.
PGM2: Active low, 8.2 - 12.0V @ 150mA.
Aux Relay: Wet 11.2 - 12.5VDC @ 750mA maximum (subtract from AUX Power); may be set to a dry form "c" relay contact upon removing or cutting the jumper "R"; output rated 30VAC/DC, 3A (Resistive Load Only)
Total Combined Standby Current (Auxiliary Power + Burg Bus power + Aux Relay power): 750mA.
Total Combined Standby and Alarm Current (Auxiliary power + Burg Bus power + Aux Relay power + Bell power): 2.5A.
Battery Options:
- One 12V 4AH battery: Maximum standby 500mA + maximum alarm 1A = total 1.5A.
- One 12V 7AH or 8AH battery: Maximum standby 750mA + maximum alarm 1.75A = total 2.5A.

Maximum Battery Charging Current: 1A.
Note: Does not affect GEMC-XXXMB standby battery calculations, as all standby current is from dedicated battery. Maximum GEMC-XXXMB combined alarm and standby current must be reduced by 0.6 times the combined alarm and standby current of the GEMC-BM/PS plus 25mA.

GEMC-BM BURGLARY MODULE
Electrical Ratings
Input Power: 12V Regulated, 25mA standby plus total combined standby and alarm current. Must reduce GEMC-XXXMB total 12V standby current by GEMC-MB total standby current plus 25mA.

---

* Must be reduced if an insufficient number of standby batteries are used. Refer to Battery Standby chart.

Note: GEMC-BM total standby and alarm current plus GEMC-XXXMB total 12V standby and 12V alarm current must not exceed 2.5A.
Output Power:
Burg Bell Power: 12VDC Regulated, 2A maximum.
AUX Power: 12VDC Regulated, 750mA maximum.
Burg Bus Power ("Remote Bus Power"): 12V Regulated, 750mA maximum.
PGM1: Active low, 10.6 - 12VDC @ 150mA.
PGM2: Active low, 10.6 - 12VDC @ 150mA (For UL Commercial installations)
Aux Relay: Wet 12V Regulated @ 750mA maximum (subtract from AUX Power); may be set to a dry form "c" relay contact upon removing the jumper "R"; output rated 30VDC, 3A (Resistive Load)
Total Combined Standby Current (Auxiliary power + Burg Bus power + Aux Relay power +25mA standby current): 750mA.
Total Combined Standby and Alarm Current (Auxiliary power + Burg Bus power + Aux Relay power + Bell power): 2.5A.

GEMC-F8ZCPIM Conventional 8 Fire Zone Expander Module
ELECTRICAL RATINGS
Input Power: 12V Regulated, 120mA standby + total combined standby and alarm current.
Output Power:
AUX PWR: 12V Regulated, 700mA maximum.
RST PWR: 12V Regulated, 700mA maximum.
Maximum Total Combined Standby and Alarm Current: 120MA + total combined standby current. Must reduce GEMC-XXXMB total combined 12V standby power by GEMC-F8ZCPIM total combined standby current.
Zone Ratings:
Voltage: 13.8 - 8.5VDC.
Current: 2mA standby loop current.
Alarm: 42mA maximum alarm current per zone.
Maximum Loop Resistance: 10 ohms.
Note: Zones not programmed into Area 1 and not wired with an EOLR will not pull any current in standby or in alarm. All initiating circuits are Class B.

GEMC-FW-SLC Fire Signaling Line Circuit Module
Electrical Ratings
Input Power:
Power Requirements: 24VDC, 70mA (standby current) + device current.
Maximum Total Combined 24V Input Current: 475mA.
Output Power: 36V, 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-XXXMB total combined 24V auxiliary standby current must be reduced by GEMC-FW-SLC input current.
Operating Temperature: 0°C to 49°C
Storage Temperature: 20°C to + 85°C
Dimensions W x D x H: 4.5" x 4" x 1"

GEMC-BSLC Burglary Signaling Line Circuit Module
Electrical Ratings
Input Power:
Power Requirements: 24VDC, 55mA (standby current) + device current (provided by GEMC Series control panel).
Maximum Total Combined 24V Input Current: 590mA.
Output Power: 16.5V, 500mA maximum.
Note: Refer to PCD-Windows Quickloader download software's calculation tools for 24V standby current calculation. GEMC-XXXMB total combined 24V auxiliary standby current must be reduced by GEMC-BSLC current.
Operating Temperature: 32° to 120°F (0° to 49°C)
Dimensions W x D x H: 4.5" x 4" x 1"

Modules Mounted Inside the C-Series Motherboard Enclosure:

GEMC-NL-MOD Network Communication Module
Electrical Ratings
Input Power: Nominal 12VDC, 85mA.
Note: 12V power must be supplied from GEMC-XXXMB **AUX PWR** terminals. Available panel 12V combined auxiliary current is reduced by 85mA.
Output Power: PGM-style open collector (negative trigger) with a maximum sink current of 50mA. Wire only to power-limited circuits less than 14VDC.
Dimensions: 1½" x 7" x 4¾" (H x W x D)
Note: The GEMC-NL-MOD Network Communication Module can be used as the primary communicator; see WI1754 for details.

GEMC-RS232 Control Panel / Computer Converter
Electrical Ratings
Input Power: 12.6 - 10.2, 60mA.
Note: 12V power must be supplied from GEMC-XXXMB **AUX PWR** terminals. Available GEMC-XXXMB total combined 12V auxiliary current must be reduced by 60mA.
Output: RS232 format, maximum 50 feet.
Note: For supplementary use only.
Dimensions (HxWxD) : 11/16" x 2 9/16" x 2 9/16"
Range: 50 feet using RS232 serial cable; 100 feet using Cat5 cable
Note: For supplementary use only.

GEMC-24VR 24 Volt "Regulated" Output Module
Electrical Ratings
Input Power: 24V Unregulated, 2A maximum. Supplied from NAC output of the GEMC-XXXMB or GEMC-NACXX programmed for reversed polarity.
Output Power: 24V Regulated, 1.0A maximum (maximum is reduced by battery configuration and required standby time).
Dimensions: W = 3.5", L = 4.32", H = 1.15"

Modules Wired to Fire Bus and/or Burglary Bus:

GEMC-FK1 FIRE KEYPAD
ELECTRICAL RATINGS
Input Power: 12VDC nominal, 110mA maximum, 35mA if back-lighting is disabled (cut jumpers W1, W2 & W3).
Maximum Number of Fire Keypads: 7
Maximum Number of Fire Keypads + Burglary Keypads: 15
POWER RATINGS
GEMC-FK1 is powered by the Fire bus of the GEMC-Series motherboard, GEMC-12V2APS or an appropriately rated UL Listed Security/Signaling power limited power supply. Deduct these values from the system standby current, as described in the control panel wiring diagram.

GEMC-BK1 BURGLARY KEYPAD
ELECTRICAL RATINGS
Input Power: 12.5 - 7.5VDC, 110mA maximum (120mA when using integral EZM). 35mA if backlighting is disabled (cut jumpers W1, W2 & W3).
Output Power:
PGM Output (active low): 5mA, 12V. Wiring to power limited circuits less than 14VDC.
Maximum Number of Burglary Keypads: 15.
Maximum Number of Fire Keypads + Burglary Keypads: 15.
Maximum Wiring Length for each run: (#22AWG): 1000' divided by total number of keypads on run.
POWER RATINGS
GEMC-FK1 and GEMC-BK1 are both powered by the keypad bus of the control panel, GEMC-12V2APS or an appropriately rated UL Listed Security/Signaling power-limited power supply. Deduct these values from the system standby current, as described in the control panel wiring diagram.

GEMC-BK1 supports an integral 4 zone EZM:
Zone Loop Voltage: 12V
Zone Loop Current: 4.7mA nominal, 5.5mA when shorted.
Maximum Zone Loop Resistance: 300 ohms.
2.2K End of line resistor.

GEMC-EZM8 Expansion Zone Module
Electrical Ratings
Input Power: 12.5 - 7.5VDC, 60mA.
Zone Loop current: 4.7mA nominal, 5.5mA when shorted.
Maximum Zone Loop Resistance: 300 ohms.
2.2K End of line resistor (UL Listed part number EOL2.2K required in Fire applications).

Output Power:
PGM Output (Active low): 5mA, 12V. Connect only to power-limited circuits less than 14VDC. Use only in Burglary applications.
Ground Faults Detected: 1.25KΩ to ground or less.

GEMC-RM3008 Relay Module
Electrical Ratings
Input Power: 12.6 - 11.8VDC, 22mA + 12mA per energized relay, total 118mA of all relays energized.
Contact Ratings:
Voltage: 30VAC or 30VDC maximum.
Current: 2A maximum (resistive load).
Maximum Wiring Length for each run (on Fire Bus or GEMC-BM burg bus): 750 feet with #22AWG, 1000 feet with #18AWG.
Maximum Wiring Length for each run (on GEMC-BM/PS burg bus): 20 feet with #22AWG, 40 feet with #18AWG. **Note:** Do not use bus power to power devices on relay outputs or wire length must be reduced by half for each 120mA used.
Metal Housing (H x W x D): 10 5/16" x 8 ⅜" x 3"

GEMC-OUT8 Programmable Output Module
Electrical Ratings
Input Power: 12.5 - 7.5VDC, 35mA standby maximum.
Current: Standby 35mA + current required for each active output.
Output Power: Active low outputs.
Maximum Single Output Current: 50mA power-limited circuits 14VDC maximum.
Maximum Combined Output Current: 400mA power-limited circuits 14VDC maximum.
Note: Output current must be deducted from either standby current or alarm current depending on the function of the output unless current is provided by a separate UL Listed power supply at 12 volts.

GEMC-RECV Wireless RF Receiver
Electrical Ratings
Input Power: 12.5 - 9.4VDC, 70mA.
Operating Temperature: 0°C to 49°C.
Storage Temperature: 20°C to + 85°C.
Antenna: ¼-Wave (2)
Dimensions: 6¾" x 3⅝" x 1½" (W x H x D)
Operating Frequency: 319.5Mhz

GEMC-NACXX Supervised NAC Extender
The GEMC 7 ampere NAC Extender includes 2 models as determined by the housing used: The GEMC-NAC7L (for large enclosure) and GEMC-NAC7S (for small enclosure).

Electrical Ratings

Input Power:
Primary input power: 120VAC, 50/60Hz, 3A, maximum 15A dedicated branch circuit.
Secondary power: 24V operation, up to eight 12V / 7AH / 7.5AH / 8AH batteries in pairs (7AH-32AH standby).
Fire Bus Input Power Rating: 12.5 - 7.5VDC, 8mA.

Output Power:
Total Output Power: 24VDC, 7A maximum, power limited outputs. Each NAC circuit output rated @ 2A maximum.
Optional Auxiliary Output Power: 2A maximum per NAC circuit; 1.1A @ 24V maximum standby current (depending on batteries utilized) for 24 hours. Any of the 4 NACs can be used for auxiliary outputs by programming the output with the feature "Reverse Polari-

ty" (see the **NAC/Output Assignment** screen in PCD-Windows Quick-loader software). Auxiliary power is 24V Unregulated. When used with the GEMC-24VR, these auxiliary outputs are 24V Regulated.
Supervision:
- AC fail supervision, approximate 1 minute delay to prevent nuisance swingers
- Battery presence, low battery supervision and battery charger voltage supervision; combined to generate a common battery trouble
- Remote bus supervised for opens, shorts or ground faults

Additional GEMC-NACXX Specifications:
NAC End-of-Line Resistor: 2.2K ohms.
Common Trouble Relay ("Out Relay 5"): 30VDC @ 1A, 30VAC @ .5A Resistive, connect to power limited circuits only.
Common Trouble Relay ("Out Relay 6"): 30VDC @ 1A, 30VAC @ .5A Resistive, connect to power limited circuits only.
Common Trouble Relay ("Out Relay 7"): 10A / 120VAC; 2.5A / 30VAC / DC Resistive Load.
Input control circuit: 9–32VDC @ 4mA maximum.
Operating Temperature: 32°F to 122°F (0°C to 50°C).
Operating Humidity Range: 10% to 90% relative humidity, from 32°F to 104°F (0°C to 40°C) non-condensing.

Housing
The GEMC-NACXX comes complete with 7A power supply, enclosure and ample room for standby batteries. Two models are available, as determined by the size of the enclosure:

Enclosure Dimensions (W x H x D, Inches):
- The **GEMC-NAC7S** uses the small housing with sufficient room for a pair of 12V standby batteries (model **GEMC-HSKIT1416**, size 14.25" x 16" x 5.25")
- The **GEMC-NAC7L** uses the large housing with room for four pairs of 12V standby batteries (model **GEMC-HSKIT1425**, size 14.25" x 24" x 5.25")

GEMC-FPRINT Parallel Printer Interface (Fire Bus only)
Electrical Ratings
Input Power: 12VDC nominal; 90mA maximum.
Output Power: N/A.
Dimensions: 1½" x 7" x 4¾" (3.8 x 17.8 x 12cm) H x W x D
MAXIMUM WIRE LENGTH: The GEMC-FPRINT may be mounted on the control panel fire bus up to 500 feet (with #22AWG wire) or 1000 feet (with #18AWG wire) from the control panel. The Parallel Printer must be mounted with 20 feet (6.1m) of the GEMC-FPRINT module.
NOTE: For UL approved installations, the wire length (GEMC-FPRINT to printer) must be no more than 20 feet (6.1m) and the printer shall reside in the same room as the GEMC-FPRINT with no intervening walls or barriers.

GEMC-12V2APS-CF SPECIFICATIONS
Electrical Ratings
(Use dedicated 15A circuit for input power)
Primary Input Power: 120VAC, 60Hz, 1A.
Secondary Input Power: Minimum two 12V / 4AH batteries; two 12AH batteries maximum (see **Standby Current Charts** for battery requirements).
Total Output Power: 12VDC, 2A maximum combined alarm and standby current (less 40mA standby current for power supply board).
Two Auxiliary Power Outputs: 12V Regulated, 1.5A maximum each; 0.80A @ 12V combined maximum standby current for 24 hours.
Standby Current: 40mA for main board (subtract from overall rating).
Additional Specifications (for GEMC-12V2APS-CF and GEMC-12V2APS-R)
NO AC: Active Low, switches up to 2A DC. Normally active, turns off when no AC or brownout is detected. Connect to power-limited circuits only, 30VDC maximum.
BAT TBL: Active Low, switches up to 2A DC. Normally active, turns off when no battery, low battery and/or battery charging circuit trouble is detected. Connect to power-limited circuits only, 30VDC maximum.
TBL: Active Low, switches up to 2A DC. Normally active, turns off when microprocessor stops functioning, no AC, brownout or battery trouble. Connect to power-limited circuits only, 30VDC maximum.
Operating Temperature: 32°F to 122°F (0°C to 49°C).
Operating Humidity Range: Maximum 85% relative humidity @

30°C.

Enclosure Dimensions (WxHxD): Inches: 13.875" x 12.375" x 3.80" (enclosure not provided with the GEMC-12V2ABOARD)

GEMC-12V2APS-R SPECIFICATIONS

Electrical Ratings

Primary Input Power: 120VAC, 60Hz, 60W (NAPCO TRF-14).

Secondary Input Power: Two 12AH batteries maximum.

Total Output Power: 2.1A minus selected charging current. (see **JUMPERS** section for charging current selections).

Two Auxiliary Power Outputs: 12V Regulated, 1.5A maximum each; 0.80A @ 12V maximum standby current for 24 hours (see **GEMC-12V2APS BATTERY / CURRENT SPECIFICATIONS** tables).

Standby Current: 40mA for main board (less 40mA standby current for power supply board).

Housing

The GEMC-12V2APS comes complete with transformer, enclosure and ample room for standby batteries. Each model requires either two 12V 4AH, 4.5AH, 5AH batteries, two 12V 7AH, 7.5AH, 8AH batteries or two 12V / 12AH batteries.

Modules Wired to the Fire SLC Bus:

For the devices listed below, refer to PCD-Windows Quickloader download software's calculation tools.

- **FWC-FSLC-CZM**
- **FWC-FSLC-DUCT**
- **FWC-FSLC-EZM1**
- **FWC-FSLC-EZM2**
- **FWC-FSLC-HEAT**
- **FWC-FSLC-ISO**
- **FWC-FSLC-PROG2**
- **FWC-FSLC-PULL**
- **FWC-FSLC-RM2**
- **FWC-FSLC-SMK**
- **FWC-FSLC-SOM1**

Fire or Burglary Bus Wire Gauges

Gauge (solid)	Resistance (Ω)	Length (ft)	Max. Current (ma)
22	16.8	1000	120
	8.4	500	240
	4.2	250	450
18	6.6	1000	240
	3.3	500	480
	1.65	250	850
16	4.2	1000	480
	2.1	500	850
	1.1	250	1700
14	2.6	1000	600
	1.3	500	1000
	.65	250	2000
12	1.7	1000	750
	.85	500	1500
	.51	300	2000

Modules Wired to the Burglary SLC Bus:

GEMC-BSLC-1PT Single Point Expander

Electrical Ratings

Input Power: 13.6-16.3VDC, 2mA supplied by GEMC-BSLC control unit.

Output Power:

Zone Loop Ratings: 16V, 0.31mA, 0.34mA short.

Maximum Zone Loop Resistance: 300Ω.

Maximum Wiring Length: 3000' (#16 AWG). Refer to GEMC-BSLC documentation (WI1648) for complete wiring information.

Operating Temperature: 32° to 120°F (0° to 49°C)

Refer to PCD-Windows Quickloader download software's calculation tools for 24V standby current calculation.

GEMC-BSLC-4PT Four Point Expander

Electrical Ratings

Input Power: 13.6-16.3VDC, 3mA supplied by GEMC-BSLC control unit.

Output Power:

Zone Loop Ratings: 16V, 0.31mA, 0.34mA short per zone.

Maximum zone loop Resistance: 300 ohms.

Maximum Wiring Length: 3000' (#16 AWG). Refer to GEMC-BSLC documentation (WI1648) for complete wiring information.

Operating Temperature: 32° to 120°F (0° to 49°C)

Refer to PCD-Windows Quickloader download software's calculation tools for 24V standby current calculation.

GEMC-BSLC-PIR Burglary SLC Passive Infrared Sensor

Coverage (L x W): 50 feet x 50 feet (15.2m x 15.2m) at 68°F (20°C), typical (with High Sensitivity Jumper "**SEN**" installed) 30 feet x 35 feet (9.1m x 10.6m) at 68°F (20°C), typical (with Normal Sensitivity)

Operating Temperature: 14°F to 120°F (-10° to + 49°C)

Mounting: Wall or corner, 6 - 12 feet (3.6m) max.

High Temperature Set Point: 90°F +/- 4°F

Low Temperature Set Point: 40°F +/- 4°

RATINGS

Electrical Ratings

Input Power: 13.6-16.3VDC (supplied by GEMC-BSLC module), 19mA.

Output Power: (not applicable)

Maximum Wiring Length: 2000 feet (#16 AWG). Refer to GEMC-BSLC documentation for complete wiring information.

Unit shall be connected to model GEMC-BSLC which is employed in the GEMC C-Series control panel which is provided with a minimum of 4 hours standby on battery power.

PHYSICAL

Dimensions (HxWxD): 3.3in x 2.5in x 1.9in (8.4cm x 6.4cm x 4.8cm)

Shipping Weight: 5oz. (142g)

GEMC-BSLC-DT Burglary SLC Dual Technology Sensor

General Coverage with standard wide-angle lens, measured indoors at 68°F (20°C), typical: 50 feet long x 40 feet wide; "Look Down" zone added.

Operating Temperature: 14° to 122°F (-10° to +49°C)

Mounting: Wall or corner, 6 - 9.8 feet (2 - 3m) max.

Microwave Frequency: 10.525GHz ±25MHz

Physical Dimensions: (HxWxD) 4.6 x 2.9 x 2.9 in.

Shipping Weight: 1.0 lb (454g)

Electrical Ratings

Input Power: 13.6-16.3VDC supplied by model GEMC-BSLC, 19mA.

Maximum Wiring Length: 2000' (#16 AWG). Refer to GEMC-BSLC documentation for complete wiring information.

Unit shall be connected to model GEMC-BSLC which is employed in the GEMC C-Series control panel which is provided with a minimum of 4 hours standby on battery power.

GEMC-BSLC-RLY Burglary SLC Single Point Relay Module

Electrical Ratings

Input Power:

Voltage: 13.6-16.5VDC (connected to the GEMC-BSLC).

Current: Standby, 3.0mA + 5.0mA with energized relay.

Note: The GEMC-BSLC-RLY is equivalent to 5 devices (and have a maximum distance of 3000 feet per home run when using 16AWG wire). See WI1648.

Output Power: Form C dry contact. Wire only to power-limited circuits.

UL Contact Ratings: 30VDC, 2A and 30VAC, 1A (resistive load).

Maximum Wiring Length: 3000' (#16 AWG). Refer to GEMC-BSLC documentation for complete wiring information.

Dimensions (inches): Width: 1½ (38mm) Height: 3⅛ (79mm) Depth: 1 (25mm)

Operating Temperature: 32° to 120°F (0° to 49°C)

GEMC-BSLC-GB: SLC Glass-Break Detector with Tamper

Electrical Ratings

Input Power: 13.6-16.3VDC, 8mA supplied by GEMC-BSLC control unit.

Maximum Wiring Length: 3000 feet (#16 AWG). Refer to GEMC-BSLC documentation (WI1648) for complete wiring information.

Operating Temperature: 32° to 120°F (0° to 49°C). Refer to the PCD-

Windows Quickloader download software calculation tools for 24V standby current calculation.

Note: Detector stabilizes within 3 minutes of power up.

Relative humidity: 85% (non-condensing)

Glass types:

- Minimum size: 10⅞ x 10⅞ in. (276 x 276mm) plate, $^{3}/_{32}$ - ⅜ in. (2.4 x 9.5mm) plate;
- ⅛ in. - ⅜ in. (3mm - 9.5mm) tempered;
- ⅛ in. - $^{9}/_{16}$ in. (3mm - 14mm) laminated;
- ¼ in. (6.4mm) wired;
- ⅝ in. (16mm) overall sealed insulated

Note: Coated glass with security films, including films for solar protection, up to 12 mil. (12/1000 in.) thick may be used. **This product has been evaluated with a maximum range of 6m (20 feet) with sensitivity set at maximum for protecting 3mm (1.8 in.) sealed insulating glass and 3mm (⅛ in.) laminated glass**. **Note:** (1) Use 20 feet (6m) radius if unsure of glass type. (2) If not using a FG-700 or FG-701 glassbreak simulator to verify range, reduce range to 15 feet (4.5m) for windows with blinds or unlined drapes. (3) Reduce coverage 50% for armor-coated glass.

Housing material: Flame-retardant ABS plastic

Dimensions (HxWxD): (122 x 106 x 33mm) 4.8 x 4.16 x 1.25in.

Weight: 5.5oz (160g) [without batteries or transmitter]

Accessories: FG-700 & FG-701 glassbreak simulator (not included)

NOTE: The GEMC-BSLC-GB detects shattering of framed glass by a direct impact. It may not consistently detect breakage by blows that only crack the glass, by high velocity projectiles such as bullets, or glass broken without an impact.

Wireless Devices:

GEMC-WL-WD2 Wireless Window / Door Transmitter

Electrical Ratings

Input Power:
Powered by a 3-volt lithium battery.
Two zone inputs.
Use only one device when used with Fire initiating devices.

Maximum Zone Wiring Length: 25' (#18-22 AWG).

GEMC-WL-WD Low Profile Window / Door Transmitter

Electrical Ratings

Input Power:
Powered by a 3-volt lithium battery (Energizer CR2032 or Duracell DL2032).

Operating Frequency: 319.5Mhz

Operating Temperature: 0°C - 49°C

Maximum External Loop Resistance: 10Ω

GEMC-WL-HEAT Wireless Heat Detector

Electrical Ratings

Input Power:
Powered by a 3-volt lithium battery.

Fixed Temperature Point: 135°F (57°C).

NOTE: Replace battery with a 3V Duracell DL123A, Varta / Power-One CR123A or Panasonic CR123A only.

GEMC-WL-GB Wireless Glass Break Detector

Range of Coverage (radius distance from sensor): 7.6m (25') maximum, omnidirectional or 4.6m (15'). No minimum range.

Input Power:
Powered by a 3-volt lithium battery; use Duracell DL123A, Varta / Power-One CR123A or Panasonic CR123A only.

Alarm current (LED's disabled): 40uA maximum (transient)

Standby current: 40uA typical

Operating Frequency: 319.5Mhz

Operating temperature: 0°C to 49°C (32°F to 120°F) (Indoor use environment)

Note: Detector stabilizes within 3 minutes of power up.

Relative humidity: 85% (non-condensing)

Glass types:

- minimum size: 10-7/8" x 10-7/8", (280 mm x 280 mm) 3/32" - 3/8"

plate;

- 1/8" - 3/8" tempered;
- 1/8" - 9/16" laminated;
- 1/4" wired;
- 5/8" overall sealed insulated

Note: Coated glass with security films, including films for solar protection, up to 12 mil. thick may be used. The Glass-Gard GGLL1200 has been evaluated with this product by Underwriters Laboratories Inc. **UL Recognizes a maximum range of 6m (20') with sensitivity set at maximum for protecting 3mm (1.8") sealed insulating glass and 3mm (1/8") laminated glass**. **Note:** (1) Use 20' (6m) radius if unsure of glass type. (2) If not using a FG-700 or FG-701 glassbreak simulator to verify range, reduce range to 15' (4.5m) for windows with blinds or unlined drapes. (3) Reduce coverage 50% for armor-coated glass.

Housing material: Flame-retardant ABS plastic

Dimensions (HxWxD): (122mm x 105mm x 33mm) 4.75" x 4.13" x 1.25"

Weight: 5.5oz (160g) [without batteries or transmitter]

Accessories: FG-700 & FG-701 glassbreak simulator (not included)

NOTE: The GEMC-WL-GB detects shattering of framed glass by a direct impact. It may not consistently detect breakage by blows that only crack the glass, by high velocity projectiles such as bullets, or glass broken without an impact.

GEM-KEYF Wireless Keyfob

Electrical Ratings

Input Power: Powered by a 3-volt lithium battery.

Operating Frequency: 319.5Mhz

GEMC-WL-SMK Wireless Supervised Smoke Detector

Electrical Ratings

Input Power:
Powered by a 3-volt lithium battery. Use one 3-volt lithium Duracell DL123A, Varta CR123A, Panasonic CR123A or Sanyo CR123A.

GEMC-WL-PIR Wireless PIR Transmitter

PIR Coverage (l x w): 50' x 50' (15.2m x 15.2m) at 20°C (68°F), typical.

Operating Temperature: 0° to +50°C (32° to 122°F)

Mounting: Wall or corner, 10' (3m) max.

Dimensions: 4.5'' x 2.5'' x 1.7'' (11.4cm x 6.4cm x 4.3cm) (HxWxD)

Shipping Weight: 6.4oz (181gm)

GEMC-WL-DT Wireless Dual Technology Sensor

Coverage (l x w): 40' x 40' (12.2m x 12.2m) at 20°C (68°F), typical.

Operating Temperature: 0° to +50°C (32° to 122°F)

Self-Test Interval: 11-16 hours

Microwave Frequency: 10.525GHz ± 25MHz

Recommended Mounting Height: 6--8', wall or corner

Dimensions: 5.5'' x 3.25'' x 2.4'' (14cm x 8.3cm x 6.1cm) (HxWxD)

Shipping Weight: 1.2 lb (600 gm)

GEMC-WL-CO Wireless Carbon Monoxide (CO) Detector

Dimensions (W×L×D): 5-3/8 x 5-3/8 x 2-1/8" (13.7 x 13.7 x 5.4cm)

Electrical Ratings

Input Power: Powered by a 3-volt lithium battery. Use one 3-volt lithium Duracell DL123A, Varta CR123A, Panasonic CR123A or Sanyo CR123A.

Operating Environment

Temperature: 32°F to 122°F (0°C to 49°C)

Relative humidity: 15% - 95% RH

Regulatory Information

Manufacturer: Napco Security Technologies, Inc. 333 Bayview Avenue, Amityville, NY 11701

UL rating: This detector has been evaluated to the CO detector sensitivity limits of UL 2075 / UL 2034.

Environmental class: Indoor, in accordance with the Operating Environment specifications.

Note: For systems that include CO detectors, the system must be monitored by a central station.

GEMC-PS24V7A 7 AMP POWER SUPPLY

DESCRIPTION
The GEMC-PS24V7A-R is both a charger and a super-vised power supply rated at 24VDC/7A. Input rating is 120VAC, 60Hz, 3A. Fuse rated 5A, 250V. Replace on-ly with UL Listed fuse rated 5A, 250V (see WI1653).

FEATURES
- 24VDC output.
- Maximum charge current 1.96A.
- 7 ampere continuous supply current at 24VDC.
- Built-in charger for sealed lead acid or gel type bat-teries.
- Automatic switch over to stand-by battery when AC fails.
- AC input, DC output.
- Short circuit and thermal overload protection.
- Board Dimensions: 9"(L) x 6"(W) x 1⅝"(H) Specified at 25°C ambient.

INSTALLATION INSTRUCTIONS
⚠ **Caution: Turn off branch circuit before servicing power supply.**

The GEMC-PS24V7A-R should be installed in accord-ance with The National Electrical Code, ANSI / NFPA 70 and all applicable Local Regulations.
To install, see the Gemini C-Series control panel instal-lation instructions (WI1653) detailing removal and re-installation instructions for all models of the Gemini C-Series control panels. Install jumpers on J3 as per the chart below:

BATTERY CHARGE CURRENT JUMPERS			
No. of Jumpers	Trickle Charge	Total Charge	No. of Batteries
0	210 mA	1.50A	2 sets
1	440 mA	1.72A	3 sets
2	680 mA	1.96A	4 sets

GEMC-PS24V4A 4 AMP POWER SUPPLY

DESCRIPTION
The GEMC-PS24V4A-R is both a charger and a super-vised power supply rated at 24VDC/4A. Input rating is 120VAC, 60Hz, 3A. Fuse rated 5A, 250V. Replace on-ly with UL Listed fuse rated 5A, 250V (see WI1653).

FEATURES
- 24VDC output.
- Maximum charge current 1.96A.
- 4 ampere continuous supply current at 24VDC.
- Built-in charger for sealed lead acid or gel type bat-teries.
- Automatic switch over to stand-by battery when AC fails.
- AC input, DC output.
- Short circuit and thermal overload protection.
- Board Dimensions: 9"(L) x 6"(W) x 1⅝"(H) Specified at 25° C ambient.

INSTALLATION INSTRUCTIONS
⚠ **Caution: Turn off branch circuit before servicing power supply.**

The GEMC-PS24V4A-R should be installed in accord-ance with The National Electrical Code, ANSI / NFPA 70 and all applicable Local Regulations.
To install, see the Gemini C-Series control panel instal-lation instructions (WI1653) detailing removal and re-installation instructions for all models of the Gemini C-Series control panels. Install jumpers on J3 as per the chart below:

BATTERY CHARGE CURRENT JUMPERS			
No. of Jumpers	Trickle Charge	Total Charge	No. of Batteries
0	210 mA	1.50A	2 sets
1	440 mA	1.72A	3 sets
2	680 mA	1.96A	4 sets

AES TO POINT ID TRANSLATION CODES

1st column is the report "Type".
2nd column is the Point ID translation code to be reported.
3rd column is the text for that alarm

00	E110	Fire Alarm
01	R110	Fire Restore
02	E373	Fire Trouble
03	R373	Fire Trouble Restore
04	E123	Panic Alarm
05	R123	Panic Restore
06	E370	Panic Trouble
07	R370	Panic Trouble Restore
08	E130	Burglary Alarm
09	R130	Burglary Restore
10	E370	Burglary Trouble
11	R370	Burglary Trouble Restore
12	E122	Holdup Alarm
13	R122	Holdup Restore
14	E370	Holdup Trouble
15	R370	Holdup Trouble Restore
16	E200	Fire Supervisory
17	R200	Fire Supervisory Restore
18	E373	Fire Supervisory Trouble
19	R373	Fire Supervisory Trouble Restore
20	E113	Sprinkler Alarm (waterflow)
21	R113	Sprinkler Restore
22	E373	Sprinkler Trouble
23	R373	Sprinkler Trouble Restore
24	E151	Gas Alarm
25	R151	Gas Restore
26	E370	Gas Trouble
27	R370	Gas Trouble Restore
28	E158	Heat Alarm
29	R158	Heat Restore
30	E370	Heat Trouble
31	R370	Heat Trouble Restore
32	E200	Sprinkler Supv Alarm
33	R200	Sprinkler Supv Restore
34	E373	Sprinkler Supv Trouble
35	R373	Sprinkler Supv Trouble Restore
36	E100	Medical Alarm
37	R100	Medical Restore
38	E370	Medical Trouble
39	R370	Medical Trouble Restore
40	E150	24 hour Aux. Alarm
41	R150	24 hour Aux. Restore
42	E370	24 hour Aux. Trouble
43	R370	24 hour Aux. Trouble Restore
44	E131	Burg Perimeter Alarm
45	R131	Burg Perimeter Restore
46	E370	Burg Perimeter Trouble
47	R370	Burg Perimeter Trouble Restore
48	E132	Burg Interior Alarm
49	R132	Burg Interior Restore
50	E370	Burg Interior Trouble
51	R370	Burg Interior Trouble Restore
52	E134	Burg Exit/Entry Alarm
53	R134	Burg Exit/Entry Restore
54	E370	Burg Exit/Entry Trouble
55	R370	Burg Exit/Entry Trouble Restore
56	E137	Burg Zone Tamper Alarm
57	R137	Burg Zone Tamper Restore
58	E370	Burg Zone Tamper Trouble
59	R370	Burg Zone Tamper Trouble Restore
60	E401	Opening
61	R401	Closing
62	E400	Opening Report After Alarm
63	R400	Forced Closing
64	E121	Keypad Holdup Alarm (ambush)
65	E123	Keypad Panic Alarm
66	E110	Keypad Fire Alarm
67	E140	Keypad Emergency Alarm
68	E137	Keypad Tamper Alarm
69	E404	Fail to Open
70	R404	Fail to Close
71	E140	Undefined General Alarm
72	E602	Test Timer
73	E321	Bell Supv
74	E338	Burg Mod Low Bat
75	E303	Memory Failure
76	E302	Low Battery
77	E301	A.C. Trouble
78	E145	Tamper Alarm EZM
79	E380	Sensor Watch
80	E140	Undefined General Alarm
81	R321	Bell Supv Restore
82	R338	Burg Mod Low Bat Restore
83	E140	Undefined General Alarm
84	R302	Low Battery Restore
85	R301	AC Trouble Restore
86	R145	Tamper Restore EZM
87	E140	Undefined General Alarm
88	E351	Tel 1 Fail
89	E352	Tel 2 Fail
90	E353	Telemetry Trouble
91	E354	Telemetry Fail
92	E310	Ground Fault
93	E333	Reserved
94	E338	ACM Low Bat
95	E342	ACM AC Failure
96	R351	Tel 1 Restore
97	R352	Tel 2 Restore
98	R353	Telemetry Trouble Restore
99	R354	Telemetry Fail Restore
100	R310	Ground Fault Restore
101	R333	Ground Fault Fire EZM Restore
102	R338	ACM Low Bat Restore
103	R342	ACM AC Fail Restore
104	E601	Manual Communication Test
105	E607	Guard Tour Fail
106	E300	Fire 4 Wire Bus Failure
107	E616	Service Message
108	E306	Panel Reprogrammed
109	E333	RF Receiver Supervision
110	E383	Transmitter Tamper
111	E381	Transmitter Trouble
112	E140	Undefined General Alarm
113	E140	Undefined General Alarm
114	R300	Fire 4 Wire Bus Restore
115	E140	Undefined General Alarm
116	R607	Test End - Restore
117	R333	RF Receiver Supervision Restore
118	R370	Transmitter Tamper Restore
119	R381	Transmitter Trouble Restore
120	E608	Test Timer (Fire System Faulted)
121	E374	Exit Error
122	E459	Recent Close
123	E607	Test Start
124	E140	Undefined General Alarm
125	E140	Undefined General Alarm
126	E140	Undefined General Alarm
127	E140	Undefined General Alarm
128	E570	Zone Bypassed
129	E406	User Cancelled
130	E384	RF Low Bat By Zone

131	E381	RF Supervision By Zone		194	R338	Fire Monitor Bat Test Trouble Restore
132	E383	RF Tamper By Zone		195	E341	Fire Monitor EZM Tamper Alarm
133	E140	Undefined General Alarm		196	R341	Fire Monitor EZM Tamper Restore
134	E140	Undefined General Alarm		197	E341	Fire Monitor EZM Tamper Trouble
135	E140	Undefined General Alarm		198	R331	Fire Monitor EZM Tamper Trouble Restore
136	E406	Cancel		199	E310	Fire Monitor Ground Fault Alarm
137	E380	Burg SLC Point Tbl		200	R310	Fire Monitor Ground Fault Restore
138	E383	Burg SLC Point Tamper		201	E310	Fire Monitor Ground Fault Trouble
139	E380	Fire SLC Point Tbl		202	R310	Fire Monitor Ground Fault Trouble Restore
140	E385	Fire SLC Sensitivity High		203	E111	Smoke Alarm
141	E386	Fire SLC Sensitivity Low		204	R111	Smoke Restore
142	E571	Fire Zone Bypass		205	E373	Smoke Trouble
143	R571	Fire Zone Bypass Restore		206	R373	Smoke Trouble Restore
144	E614	Fire One Man Test		207	E112	Combustion Alarm
145	E627	User Unlock		208	R112	Combustion Restore
146	E627	Dealer Unlock		209	E373	Combustion Trouble
147	E306	Out of Service		210	R373	Combustion Trouble Restore
148	E604	Fire Drill		211	E115	Pull Station Alarm
149	E382	NL-Mod Supv Trouble		212	R115	Pull Station Restore
150	E300	Tbl Resound		213	E373	Pull Station Trouble
151	R614	Fire One Man Test Exited		214	R373	Pull Station Trouble Restore
152	R627	User Unlock Exited		215	E116	Duct Alarm
153	R627	Dealer Unlock Exited		216	R116	Duct Restore
154	R305	Out of Service Exited		217	E373	Duct Trouble
155	R604	Fire Drill Exited		218	R373	Duct Trouble Restore
156	R382	NL-Mod Supv Tbl Restore		219	E162	CO Alarm
157	E344	RF Receiver Jam		220	R162	CO Restore
158	E140	RF Receiver Tamper		221	E373	CO Trouble
159	E140	RF Receiver No Response		222	R373	CO Trouble Restore
160	E344	RF Receiver High Noise		223	E330	Relay No Response
161	R344	RF Receiver Jam Restore		224	E330	KP No Response
162	R140	RF Receiver Tamper Restore		225	R330	Relay Board No Response Restore
163	R140	RF Receiver No Response Restore		226	R330	KP No Response Restore
164	R344	RF Receiver High Noise Restore		227	E140	Undefined General Alarm
165	E331	Burg SLC Tbl		228	R140	Undefined General Alarm
166	E341	Burg SLC Tamper		229	E140	Undefined General Alarm
167	E382	Burg SLC No Response		230	R140	Undefined General Alarm
168	E303	Burg SLC Memory Failure		231	E140	Undefined General Alarm
169	R331	Burg SLC Tbl Restore		232	R140	Undefined General Alarm
170	R341	Burg SLC Tamper Restore		233	E140	Undefined General Alarm
171	R382	Burg SLC NO Response Restore		234	R140	Undefined General Alarm
172	R303	Burg SLC Memory Failure Restore		235	R140	Undefined General Alarm
173	E331	Fire SLC Tbl		236	E422	Access Granted
174	E341	Fire SLC Tamper		237	E421	Access Denied
175	E382	Fire SLC No Response		238	E425	Egress Granted
176	E303	Fire SLC Memory Failure		239	E424	Egress Denied
177	R331	Fire SLC Tbl Restore		240	E433	Request to Exit
178	R341	Fire SLC Tamper Restore		241	E124	Duress Access Granted
179	R382	Fire SLC No Response Restore		242	E423	Door Forced Open
180	R303	Fire SLC Memory Failure Restore		243	E426	Door Propped Open
181	E137	Housing Tamper		244	R130	Door Open Restore
182	R137	Housing Tamper Restore		245	E577	ACM Point Bypass
183	E323	NAC Alarm		246	E137	Generic Tamper
184	R323	NAC Restore		247	R137	Generic Tamper Restore
185	E523	NAC Disable		248	E401	Opening Only (no restore)
186	R523	NAC Disable Restore		249	R140	Undefined General Restore
187	E342	Fire Monitor AC Fail		250	R356	Fail to Check-In Restore
188	R342	Fire Monitor AC Fail Restore		251	E300	System Trouble Event
189	E342	Fire Monitor AC Fail Trouble		252	R300	System Trouble Restore
190	R342	Fire Monitor AC Fail Trouble Restore		253	E341	NL-Mod Tamper
191	E338	Fire Monitor Bat Test Fail		254	E356	Fail to Check-In
192	R338	Fire Monitor Bat Test Restore		255	E998	Used to Disable Restores
193	E338	Fire Monitor Bat Test Trouble				

ORDERING INFORMATION

OPTIONAL ACCESSORIES AND PERIPHERALS

GEMC-255MB-R: 255 Zone C-Series Motherboard

GEMC-128MB-R: 128 Zone C-Series Motherboard

GEMC-96MB-R: 96 Zone C-Series Motherboard

GEMC-32MB-R: 32 Zone C-Series Motherboard

All C-Series Control Panels: Installation Instructions (see WI1653)

All C-Series Control Panels: Programming Instructions (see WI1673)

FWC-FSLC-CZM: Conventional Zone Module (see WI1714)

FWC-FSLC-DUCT: Duct Smoke Detector (with relay) (see WI1711)

FWC-FSLC-EZM1: Single Contact Point Monitor (see WI1713)

FWC-FSLC-EZM2: Dual Input Monitor Module (see WI1712)

FWC-FSLC-HEAT: Heat Detector (see WI1710)

FWC-FSLC-ISO: Loop Isolator (see WI1716)

FWC-FSLC-PROG2: Hand-Held Programmer (see WI1738)

FWC-FSLC-PULL: Pull Station (see WI1736)

FWC-FSLC-RM2: Dual Relay Module (see WI1715)

FWC-FSLC-SMK: Smoke Detector (see WI1709)

FWC-FSLC-SMK6B: 6" Smoke Base (see WI1737)

FWC-FSLC-SOM1: Supervised Output Module (see WI1717)

GEMC-12V2APS: Power Supply (see WI1828)

GEMC-120VAC-R: Replacement 120V wiring harness

GEMC-24VR: Commercial Fire 24V Regulated Output Module

GEMC-2D: 2nd Door Access Control Accessory (see WI1750)

GEMC-ACM1D: Integrated Access Control Accessory (see WI1749)

GEMC-BHBM-R: Battery Harness for GEMC-BM/PS (see WI1704)

GEMC-BHMB-R: Battery Harness Motherboard (see WI1703)

GEMC-BK1: Burg keypad (see WI1650, OI342)

GEMC-BM/PS: BURG Module with 24/12V Power Supply Converter for 3A/12 Burg and separate battery circuit (see WI1700)

GEMC-BM: BURG Module without 24/12V Converter or battery circuit; shares motherboard 12V (see WI1701)

GEMC-BSLC: Burg SLC Module (see WI1648)

GEMC-BSLC-1PT: Single point expander (see WI1718)

GEMC-BSLC-4PT: Four point expander (see WI1720)

GEMC-BSLC-DT: Wireless "Dual-Tech" PIR for SLC (see WI1721)

GEMC-BSLC-GB: SLC Glass-Break Detector with Tamper (see WI2080)

GEMC-BSLC-PIR: Wireless PIR for SLC (see WI1719)

GEMC-BSLC-RLY: Wireless Single Point Relay Module (see WI1723)

GEMC-EZM8: Zone Expansion Module listed for Commercial Fire and Burg (see WI1683)

GEMC-F8ZCPIM: Conventional 8 Fire Zone Expander Plug in Module (see WI1651)

GEMC-FK1: Fire keypad (see WI1649, OI341)

GEMC-FPRINT: Print module for Fire Bus (see WI1708)

GEMC-FW-SLC: Fire SLC Module (see WI1647)

GEMC-HSKIT1416: Small Enclosure only + PCB mounting bar kit

GEMC-HSKIT1425: Large Enclosure only + PCB mounting bar kit

GEMC-HSKIT1416W: For Burglary-only systems. Small Enclosure only + PCB mounting bar kit (white color)

GEMC-HSKIT1425W: For Burglary-only systems. Large Enclosure only + PCB mounting bar kit (white color)

GEMC-KOTAMPERKT: Control panel enclosure anti-tamper kit

GEMC-NAC7S: Commercial Fire NAC Extender (7A, small enclosure)

GEMC-NAC7L: Commercial Fire NAC Extender (7A, large enclosure)

GEMC-NL-MOD: NetLink™ TCP/IP reporting module (WI1731)

GEMC-OUT8: 8 Output OC module for Fire or Burg - outputs unsupervised (see WI1707)

GEMC-PS24V4A-R: 4 AMP 24V Main Power Supply (see WI1702)

GEMC-PS24V7A-R: 7 AMP 24V Main Power Supply (see WI1646)

GEMC-RECV: Modified RF Receiver (see WI1682)

GEMC-RM3008: 8 Output relay module for Fire or Burg - outputs unsupervised (see WI1706)

GEMC-RS232: Control Panel / Computer Converter

GEMC-TAMPERKIT: Two universal enclosure tamper switches and related hardware

GEMC-WL-CO: Wireless Commercial Carbon Monoxide (CO) Detector Transmitter with back tamper (see WI2108)

GEMC-WL-DT: Wireless Mercantile Burg Dual Tech Transmitter with back tamper (see WI1729)

GEMC-WL-GB: Wireless Commercial Glass-Break sensor (see WI1827)

GEMC-WL-HEAT: Wireless Commercial Fire Heat Detector Transmitter with back tamper (see WI1727)

GEMC-WL-PIR: Wireless Mercantile Burg PIR Transmitter with back tamper (see WI1728)

GEMC-WL-SMK: Wireless Commercial Fire Smoke Transmitter with back tamper (see WI1726)

GEMC-WL-WD: Wireless Window / Door contact (see WI1842)

GEMC-WL-WD2: Wireless Window / Door contact (see WI1743)

GEM-KEYF: Wireless Keyfob Transmitter (see WI1730)

RB1000: Relay Board (see WI737)

EXAMPLES OF COMPATIBLE UL-LISTED DEVICES

Refer to the following list of recommended devices:

Residential Fire / Burglary:

- Tane SCS101 (Self Contained Dual Tone Indoor Siren, Rated 6 - 15VDC 400mA)
- GE MPI-36 (Surface Mount 2-Channel Siren/Speaker, rated 6 - 13.8VDC 350mA)
- Honeywell Ademco Wave 2 (2-Tone Siren)

* Not investigated by UL.
** Not investigated by UL for Commercial applications.

ORDERING INFORMATION

Napco Commercial Combo. Burglary/Fire Kits

GEMC-COMBO255KT
255 Point GEM-C Commercial Combo. Fire/Burg System Kit
- 24V Panel, 255 Points via commercial addressable, wireless or conventional fire or burglary devices, 4 on board NACs, 8 partitions (No Loop Isolator/Extender required)
- 7 Amp, 24V Power Supply
- Burglary Module, with power supply with built in bus isolator for complete separation of fire and burg power and battery standby operation
- Built in horn/strobe synchronization module on each NAC
- Built in dual line communicator; dual onboard serial ports
- Quickloader up/downloading including remote smoke obscuration reporting
- Locking, Large Red Enclosure, 16 x 25" reversible door, with 14.25" x 25" base. Houses up to 32AH battery backup
- Menu-driven LCD Fire Keypad mounts anywhere on bus (also, full keyswitch support)

GEMC-COMBO128KT
128 Point GEM-C Commercial Combo. Fire/Burg System Kit
As above, but with
- 24V Panel, 128 Points via commercial addressable, wireless or conventional fire or burglary devices, 4 on board NACs, 8 partitions (No Loop Isolator/Extender required)
- 4 Amp, 24V Power Supply

GEMC-COMBO32KT
32 Point GEM-C Commercial Combo. Fire/Burg System Kit
Similar to above, but with
- 24V Panel, 32 Points via commercial addressable, wireless or conventional fire or burglary devices, 2 on board NACs, 8 partitions (No Loop Isolator/Extender required)
- 4 Amp, 24V Power Supply

Napco Commercial Fire Kits

GEMC-FW-255KT
255 Point GEM-C Firewolf™ 24V Commercial Fire System Kit
- 24V Panel, 255 Points via commercial addressable, wireless or conventional fire devices, 4 on board NACs providing up to 6.5A notification power
- 7 Amp, 24V Power Supply
- Built in horn/strobe synchronization module on each NAC
- Built in dual line communicator; dual onboard serial ports
- Quickloader up/downloading including remote smoke obscuration reporting
- Locking, Large Red Enclosure, 16 x 25" reversible door, with 14.25" x 25" base. Houses up to 32AH battery backup
- Menu-driven LCD Fire Keypad mounts anywhere on bus (also, full keyswitch support)

GEMC-FW-128KT
128 Point GEM-C Firewolf™ 24V Commercial Fire System Kit
As above, but with
- 24V Panel, 128 Points via commercial addressable, wireless or conventional fire devices, 4 on board NACs providing up to 6.5A notification power

GEMC-FW-32KT
32 Point GEM-C Firewolf™ 24V Commercial Fire System Kit
Similar to above, but with
- 24V Panel, 32 Points via commercial addressable, wireless or conventional fire devices, 2 on board NACs
- 4 Amp, 24V Power Supply
- Locking, Medium Red Enclosure, 16 x 17" door, with 14.25" x 16" base. Houses up to 16AH battery backup.

GEMC-FW32CONVKT
32 Point GEMC Conventional Commercial Fire System Kit, ideal for sprinkler/waterflow apps. 24V Panel, 32 Points via commercial addressable, wireless or conventional fire devices, 2 on board NACs.
- Locking, Medium Red Enclosure, 16 x 17" door, with 14.25" x 16" base. Houses up to 16AH battery backup.
- 4 Amp, 24V Power Supply
- Conventional 8-zone 2-wire fire input module, for conventional 2-wire smokes or any conventional fire detection device (GEMC-F8ZCPIM)
- Built in horn/strobe synchronization module on each NAC
- Built in dual line communicator; dual onboard serial ports
- Quickloader up/downloading including remote smoke obscuration reporting (for addressable detectors)
- Menu-driven LCD Fire Keypad mounts anywhere on bus (GEMC-FK1)

Napco Commercial Burglary Kit

GEMC-BURG96KT
96 Point GEMC Addressable Commercial Burglary System Kit
24V Panel, 96 Points via commercial addressable, wireless or conventional burglary devices, 7 partitions
- Locking, Medium White Enclosure, 16 x 17" door, with 14.25" x 16" base. Houses up to 16AH battery backup.
- 4 Amp, 24V Power Supply
- Addressable SLC Burg Module, supports up to 96 addressable SLC burg devices (GEMC-BSLC)
- Built in dual line communicator; dual onboard serial ports
- Quickloader up/downloading
- Menu-driven LCD Burglary Keypad with built-in 4 zone EZM, mounts anywhere on bus (GEMC-BK1)

Commercial Fire and Burglary Accessories and Options

GEMC-BM/PS
Burg Module, with Power Supply, provides isolated 4-wire Burg bus for Burg keypads and devices, plus 12V power output for aux devices. Independent Burg Bell output. Provides complete separation of Fire and Burg power, plus independent Burg battery connection and charger to allow independent Burg standby operation in case of power failure.

ORDERING INFORMATION

GEMC-BM
Burg Module, provides isolated 4-wire Burg bus for Burg keypads and devices, plus 12V power output for aux devices. Independent Burg Bell output.

GEMC-FW-SLC
Addressable SLC Fire Module, supports up to 128 addressable SLC Fire devices. Connects to the GEMC control panel (2 maximum).

GEMC-BSLC
Addressable SLC Burg Module, supports up to 128 addressable SLC Burg devices. Connects to the GEMC control panel (2 maximum).

GEMC-F8ZCPIM
Conventional (8) zone 2-wire fire input module. Plugs into GEMC Motherboard to provide support for conventional 2-wire smoke detectors, or any other conventional fire detection device.

Burglary Peripherals

GEMC-BK1
LCD Burg Keypad for GEMC Combo System (requires GEMC-BM or GEMC-BM/PS module).

GEMC-BSLC-4PT
Addressable SLC Commercial Burg Device - 4 Point Input Expansion Module.

GEMC-BSLC-1PT
Addressable SLC Commercial Burg Device - 1 Point Input Module.

GEMC-BSLC-DT
Addressable SLC Commercial Burg Device - Dual Technology Motion Detector , PIR and Microwave, Range 40'x40'.

GEMC-BSLC-GB
Addressable SLC Glass-Break Detector with Tamper - Maximum range 25 feet (7.6m) to the glass with no minimum range

GEMC-BSLC-PIR
Addressable SLC Commercial Burg Device - PIR Motion Detector, Range 50'x50'.

GEMC-BSLC-RLY
Addressable SLC Commercial Burg Device - 1 Point Output Module.

GEMC-WL-PIR
Wireless Commercial Burg Device - PIR Motion Detector, Range 50'x50'.

GEMC-WL-GB
Wireless Commercial Burg Device - Acoustic Glass break Sensor, Max Range 25'.

GEMC-WL-DT
Wireless Commercial Burg Device - Dual Technology Motion Detector, PIR and Microwave, Range 40'x40'.

Fire Peripherals

GEMC-FK1
LCD Fire Keypad for GEMC Combo System, Red.

GEMC-WL-SMK
Wireless Commercial Fire Device - Photoelectric Smoke Detector.

GEMC-WL-HEAT
Wireless Commercial Fire Device - Heat Detector, 135 F.

Common Peripherals

GEMC-WL-WD2
Wireless 2 Input Module, suitable for Commercial Fire and/or Burglary applications.

GEMC-RECV
Commercial Fire and Burg approved Wireless Receiver, supports 255 devices, maximum of (4) receivers supported by GEMC system.

GEMC-EZM8
8 Point Expansion Module, suitable for Commercial Fire and/or Burg applications.

GEMC-FPRINT
Printer Module, supports parallel printer, suitable for Commercial Fire and/or Burg applications.

GEMC-RM3008
Relay Output Module, provides (8) Form C outputs, suitable for Commercial Fire and/or Burg applications.

GEMC-NL-MOD
Internet Reporting Module, suitable for Commercial Fire and/or Burg applications.

GEMC-RS232
RS232 Adaptor, Provides Serial Output from GEMC Control Panel, suitable for Commercial Fire and/or Burg applications.

GEMC-OUT8
PGM Output Module, provides (8) Open Collector PGM Outputs, suitable for Commercial Fire and/or Burg applications.

FWC-FSLC-SMK
Addressable SLC Photoelectric Smoke Detector.

FWC-FSLC-HEAT
Addressable SLC Heat Detector 135°F.

FWC-FSLC-DUCT
Addressable SLC Photoelectric Duct Smoke Detector.

ORDERING INFORMATION

FWC-FSLC-EZM2
Addressable SLC 2 zone conventional input module. provides two independent contact monitoring circuits while only utilizing one address on the SLC loop. Designed to be used with pull stations, water flow switches, and other applications requiring the monitoring of dry contact alarm initiating devices.

FWC-FSLC-EZM1
Addressable SLC single input conventional input module. Designed to be used with pull stations, water flow switches, and other applications requiring the monitoring of dry contact alarm initiating devices.

FWC-FSLC-CZM
Addressable SLC single module allows the monitoring of dry contacts such as pull stations and two-wire conventional smoke detectors.

FWC-FSLC-RM2
Addressable SLC Dual Relay Module, provides 2 outputs while only requiring one SLC address.

FWC-FSLC-ISO
Addressable SLC Fire Isolation Module. Can be used to meet Class A, Style 7 loop requirements.

FWC-FSLC-SOM1
Addressable SLC Fire Supervised Output Module. Can be used for output functions such as elevator recall and HVAC shutdown, or as additional NAC output if used with an additional power supply.

FWC-FSLC-PULL
Addressable SLC Fire Pull Station.

FWC-FSLC-PROG2
Programmer required for programming address into SLC devices.

FWC-FSLC-SMK6B
Base required for FWC-FSLC-SMK and FWC-FSLC-HEAT devices.

Support Products
GEMC-12V2APS-CF
Remote Supervised 12VDC Power Supply. Connects to Fire Bus, powered by direct 120VAC connection, supports (2) pair of 12V, 7AH standby batteries.

GEMC-12V2APS-R
Remote Supervised 12VDC Power Supply. Connects to Burg Bus, powered by supplied 16.5V, 50VA plug-in transformer, supports (2) pair of 12V, 7AH standby batteries.

GEMC-NAC7L
GEMC-NAC7S
Remote NAC Extender. Provides four (4) NAC Outputs for a combined output rating of 6.5A, or a maximum of 2A on any one output. Includes red enclosure (14"x16"), must be connected to 120VAC source, supports maximum of 28AH standby batteries ((4) pair 12V, 7AH batteries). Connects to GEMC Fire Bus and is fully supervised. Any or all NAC outputs may be configured as remote power supply outputs. Supports Wheelock and System Sensor NAC synchronization. Maximum of (5) GEMC-NAC7L's or GEMC-NAC7S's may be added to GEMC control panel, allowing for a maximum of 20 additional NAC circuits.

OUTPUT ACTIVATION TABLE

"Area 1 General Alarm" Output Activation Table
Outputs can be programmed to activate on a particular event or combination of events using the PCD-Windows Quickloader **NAC/Output Assignment** screen, *NAC/Output Events* tab. The table below details which **Alarm Types** and **Conditions** will activate ("ON") the selected output (selected in the **Relay #** column in the **NAC/Output Assignment** screen) for an **Area 1 Gen. Alarm** event. For configurations that will not activate the output, an "X" is shown in the table cell.

OUTPUT EVENT "AREA 1 GENERAL ALARM"								
	FIRE ZONE ALARM (SHORT)	FIRE ZONE TROUBLE (OPEN)	WATER-FLOW ZONE ALARM	WATER-FLOW ZONE TROUBLE	FIRE SUPERVISORY ALARM (SHORT)	FIRE SUPERVISORY TROUBLE (OPEN)	MONITOR ZONE ALARM (SHORT)	MONITOR ZONE ALARM (OPEN)
FIRE ALARM	ON	X	ON	X	X	X	X	X
FIRE TROUBLE	X	ON	X	ON	X	ON	ON	ON
WATERFLOW ALARM	X	X	ON	X	X	X	X	X
WATERFLOW TROUBLE	X	X	X	ON	X	X	X	X
SPRINKLER SUPERVISORY ALARM	X	X	X	X	ON	X	X	X
SPRINKLER SUPERVISORY TROUBLE	X	X	X	X	X	ON	X	X
MONITOR ZONE ALARM	X	X	X	X	X	X	ON	X
MONITOR ZONE TROUBLE	X	X	X	X	X	X	X	ON

COMMERCIAL STANDBY CURRENT CALCULATION WORKSHEETS

Most installations can be configured without using additional power supplies, however larger systems may require them. In large systems, the current charts must be used to determine if the design is possible and how many additional power supplies are required.

As the GEMC-FW-SLC, GEMC-BSLC and the GEMC-F8ZCPIM can only derive their power from the motherboard, additional power supplies cannot be used to increase the capability of these circuits. Therefore, the **NAPCO Commercial Standby Current Calculation Worksheet(s)** must first be completed to determine if the system design is possible.

These Worksheets have been placed into a single Microsoft® Excel file, available online at the Napco website:

http://www.napcosecurity.com/

Once at the Napco website, click the link "**Dealer support docs**" and follow the links to find and download the Excel file to your local computer.

This Excel file contains all of the calculation worksheets that may be required by the AHJ ("authority having jurisdiction") for each installation NAPCO Commercial (GEMC) C- Series configuration type, namely:

- GEMC-COMBO with GEMC-BM-PS
  (Use to calculate standby current draw of the Fire section of GEMC-Combo control panel).

- GEMC-BM/PS (BURG STANDBY ONLY)
  (Use to calculate standby current draw of burglary devices powered through the GEMC-BM/PS Burglary Module).

- GEMC-COMBO with GEMC-BM

- GEMC Fire Only

- GEMC Burg Only

When completed, these Worksheets can easily be printed and presented to the AHJ to conform with all applicable codes.

GEMC C-SERIES CONTROL PANEL
GROUND FAULT TROUBLESHOOTING INSTRUCTIONS

These instructions are designed to help resolve a *ground fault* System Trouble on the Gemini C-Series (GEMC) control panels, for combination Burg/Fire systems that use the GEMC-BM (Burglary Module), GEMC-BM/PS (Burglary Module with Power Supply) and/or the GEMC-BSLC (Burglary SLC Module). The ground fault occurs when earth ground is shorted to a wire extending from the control panel. Use the *Burglary* and/or *Fire Ground Fault Troubleshooting Chart* (see next page) and a volt meter with the procedure that follows.

With GEMC Fire-only or combination Fire and Burglary Alarm systems: A Fire alarm system disabled for servicing is no longer protecting the individuals within the premises; therefore *extra measures MUST be taken* (as required by the authority having jurisdiction) to protect these individuals before the Fire system is disabled. It is far easier to disable and service the Burglary portion of the system alone, since the Fire portion can remain in operation. Therefore, the most rational first step is to always test the Burglary portion of the system before taking the extra measures required when testing the Fire portion of the system. All tests start with the following preliminary voltage reading:

1. Measure the DC voltage between *system ground* and *earth ground* by placing your DC volt meter negative probe to AUX Power system ground (terminal 23), and the positive probe to earth ground (terminal 1). Make note of the voltage reading in writing. A "normal" reading without a ground fault is approximately 19V (with a ground fault, the abnormal voltage reading could be higher or lower than 19V).

   With the abnormal voltage reading noted, find this voltage in the first column of the *Burglary* and/or *Fire Ground Fault Troubleshooting Chart* to help find the likely shorted wire. If the abnormal voltage reading appears on both charts, test the Burglary portion first; if the abnormal voltage reading appears on the Fire chart only, it is still worth testing and ruling out the Burglary portion of the system before the Fire portion. With the general information you learned with the charts, the following steps will help you confirm the location of the ground fault wire.

Test the Burglary portion of the system:

2. Without removing power, place the Burg Service Jumper (located on the bottom left of the motherboard) from OFF to ON; the red LED to the left of the jumper lights indicating the Burglary/Access Control portion of the system is disabled.

3. **If the GEMC-BM, GEMC-BM/PS or GEMC-BSLC module(s) are used:** The general idea is to unplug each of these Burglary modules from the system, one by one, to see if (by removing the problem module) the meter reading returns to the "normal" 19V. With the volt meter probes in place (negative probe to terminal 23, positive probe to terminal 1), unplug one of these Burglary modules from the motherboard and observe the meter voltage reading. If the voltage does NOT return to the normal 19V, the ground fault is NOT due to the wires extending from that unplugged module (reconnect and try the next module). If the voltage DOES return to the normal 19V, the ground fault IS likely due to the wires extending from the module that was unplugged.

   Confirm your results: With the suspect Burglary Module still unplugged, remove the meter probes and set your meter to ohms (Ω resistance). Place one probe to earth ground (terminal 1), and place the other probe on each Burglary Module terminal one at a time and take a reading for each. When the resistance reads low (close to zero), the shorted wire terminal is likely found. Disconnect the wire(s) from the terminal and test the resistance of each individual wire(s); the resistance will read low for the shorted wire. Trace the wire and correct the fault to clear the trouble.

4. *If each Burglary Module has been disconnected from the motherboard and the voltage has not yet returned to the normal 19V, the problem is a ground fault on a Fire system wire.* Before attempting the following steps, take the appropriate measures to protect individuals in the premises, as required by the AHJ.

   With the Burg Service Jumper still in the ON position and the red LED (to the left of the jumper) is still lit to indicate the Burglary/Access Control portion of the system is disabled, proceed as follows:

5. Use the same general procedure outlined in step 3, but test each Fire module. With the volt meter probes in place (negative probe to terminal 23, positive probe to terminal 1), unplug each of the Fire modules one at a time, each time checking if the earth ground / system voltage has returned to 19V. Continue with the procedure in step 3 until the shorted wire is identified. Trace the wire run until the ground fault is found and remove it.

6. Confirm the earth ground terminal has returned to 19V.

7. Reconnect all wires to their correct terminals and reconnect all Modules. Place the Burg Service Jumper back to the OFF position to restore Burglary system operation.

Test the system and resume normal premises operation.

B U R G L A R Y   G R O U N D   F A U L T   T R O U B L E S H O O T I N G   C H A R T

VDC between *system* and *earth ground* (negative probe terminal 23; positive probe terminal 1)	Motherboard Terminal #	Accessory Terminal #	Wire most likely shorted to earth ground (terminal 1)
16V		1 or 3	GEMC-BSLC loop (+)
13V	24		TAMP
		1	BM BURG BELL (+)
		3	BM AUX PWR (+)
		7	BM REMOTE PWR (+)
14V-8V (pulsing when active)		9	BM REMOTE BUS GRN
		10	BM REMOTE BUS YEL
3V		1	BM BURG BELL (+)
3.5V		1	GEMC-BSLC POINT ZONE (+)
Zero (0) Volts		2	BM BURG BELL (-)
		8	BM REMOTE PWR (-)

F I R E   G R O U N D   F A U L T   T R O U B L E S H O O T I N G   C H A R T

VDC between *system* and *earth ground* (negative probe terminal 23; positive probe terminal 1)	Motherboard Terminal #	Accessory Terminal #	Wire most likely shorted to earth ground (terminal 1)
31V		1 or 3	GEMC-FW-SLC Loop (+)
26V	2		NAC A +
	4		NAC B +
	6		NAC C +
	8		NAC D +
18V	13		TBL SND +
	14		TBL SND -
16V	17		KEYSW (+)
13V	22		AUX PWR +
	18		REM PWR +
	3		NAC A -
	5		NAC B -
	7		NAC C -
	9		NAC D -
14V-8V (pulsing when active)	21		REMOTE BUS YEL
	20		REMOTE BUS GRN
10V	2		NAC A +
	4		NAC B +
	6		NAC C +
	8		NAC D +
Zero (0) Volts	3		NAC A -
	5		NAC B -
	7		NAC C -
	9		NAC D -
	19		REM PWR -
	23		AUX PWR -
		2 or 4	GEMC-FW-SLC Loop (-)

GEMINI C-SERIES (GEMC) CONTROL PANEL FIRMWARE UPDATE INSTRUCTIONS

Visit the Napco Technical Library (tech.napcosecurity.com) to find the latest versions of the Gemini C-Series (GEMC) firmware .hex file(s). Search the website for "GEMC firmware"; when found, copy the .hex file(s) to a temporary folder in your local PC. **Note:** The below instructions are also located in the GEMC control panel installation instructions, WI1653 Volume 3.

UPDATING PROCESS

1. Run PCD-Windows Quickloader download software (version 6.03 or greater) and open the Gemini C-Series account for the control panel you wish to upgrade.
2. When first opened, Fire Quickloader Accounts are locked; to open, click **Tools**, **Unlock the Fire Program**.
   A warning popup appears, indicating "**The Account is locked, it will not allow changes...do you want to proceed?**" Click **Yes** to continue.
3. Click **Tools**, **Firmware Download**. The **Firmware Download** dialog opens.
4. The .hex file name references the Micro number (either Micro 1 or Micro 2; for example, "ComboMicro1.hex"). Therefore, for the Micro

number referenced in the file name, click the appropriate **Browse** button (within either the **Micro 1** or the **Micro 2** area) to locate the .hex file. Upon selecting the .hex file, the checkbox located to the right of the **Browse** button becomes active; check this checkbox and click **Download**.

As the firmware update process proceeds, the keypad display indicates a variety of text messages; during the final update loading process the display reads:

   "**Updating Flash 05P**"

The "**05P**" indicates "5% complete". The "**05P**" increments to "**10P**" and so on until the update process completes and the display reads "**System Normal**".

5. If two .hex files are available, repeat the previous step using the appropriate **Browse** button. If only one .hex file is available, skip to the next step.
6. When the download completes, verify the control panel was correctly updated by clicking the **Versions** button. To ensure the latest version information is retrieved, click **Update** and click **OK** to immediately communicate with the control panel.

WI2077

NOTES

NOTES

NOTES

FCC STATEMENT

This equipment generates and uses radio-frequency energy and, if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class-B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: reorient the receiving antenna; relocate the computer with respect to the receiver; move the computer away from the receiver; plug the computer into a different outlet so that computer and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington, DC 20402; Stock No. 004-000-00345-4.

CAUTION: This equipment generates and uses radio-frequency energy. If not installed using conventional installation practices for RF devices, it may cause interference to radio and television reception. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart B of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference. However, there is no guarantee that interference will not occur in a particular installation. If it has been found to cause interference to radio or television reception, which can be determined by removing and reapplying AC and battery power to the equipment, the installer should try to correct the interference by one or more of the following measures: reorient the receiving antenna; connect the power transformer to a different outlet so that the control panel and receiver are on different branch circuits; relocate the control panel with respect to the receiver.

Warning: The use of non-NAPCO wireless devices with this control panel has not been evaluated by UL and voids the UL listing. In addition, the performance of these devices can not be guaranteed as compatible with NAPCO control panels. UL Listed to UL864 9th Edition when used in conjunction with GEMC-Series and other UL 864 9th edition Control Units as specified in the Control Unit Installation Instructions.

NAPCO LIMITED WARRANTY

NAPCO SECURITY SYSTEMS, INC. (NAPCO) warrants its products to be free from manufacturing defects in materials and workmanship for *thirty-six months* following the date of manufacture. NAPCO will, within said period, at its option, repair or replace any product failing to operate correctly without charge to the original purchaser or user.

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.

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. THERE IS NO EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. ADDITIONALLY, THIS WARRANTY IS IN LIEU OF ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF NAPCO.

Any action for breach of warranty, including but not limited to any implied warranty of merchantability, must be brought within the six months following the end of the warranty period. IN NO CASE SHALL NAPCO BE LIABLE TO ANYONE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF THIS OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, EVEN IF THE LOSS OR DAMAGE IS CAUSED BY THE SELLER'S OWN NEGLIGENCE OR FAULT.

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.

This warranty contains the entire warranty. It is the sole warranty and any prior agreements or representations, whether oral or written, are either merged herein or are expressly cancelled. NAPCO neither assumes, nor authorizes any other person purporting to act on its behalf to modify, to change, or to assume for it, any other warranty or liability concerning its products.

In no event shall NAPCO be liable for an amount in excess of NAPCO's original selling price of the product, for any loss or damage, whether direct, indirect, incidental, consequential, or otherwise arising out of any failure of the product. Seller's warranty, as hereinabove set forth, shall not be enlarged, diminished or affected by and no obligation or liability shall arise or grow out of Seller's rendering of technical advice or service in connection with Buyer's order of the goods furnished hereunder.
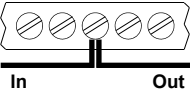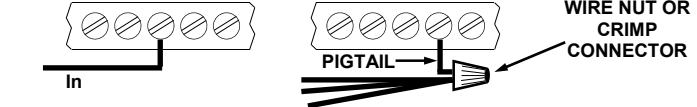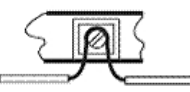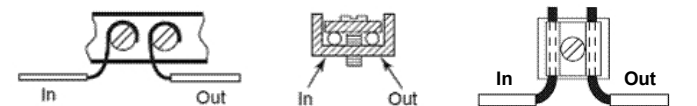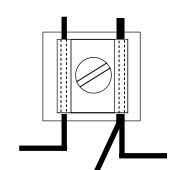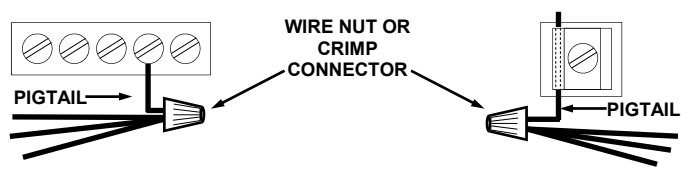
NAPCO RECOMMENDS THAT THE ENTIRE SYSTEM BE COMPLETELY TESTED WEEKLY.

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.

Some states do not allow limitations on how long an implied warranty lasts or do not allow the exclusion or limitation of incidental or consequential damages, or differentiate in their treatment of limitations of liability for ordinary or gross negligence, so the above limitations or exclusions may not apply to you. This Warranty gives you specific legal rights and you may also have other rights which vary from state to state.

IMPORTANT WIRING METHODS

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:	 **Incorrect**	 **Correct -- Single incoming and/or pigtail with wire nut / crimp connectors**
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:	 **Incorrect**	 **Correct -- Separate incoming and outgoing conductors**
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.	 **Incorrect**	 **Correct -- Use pigtail and wire nut / crimp connector**