

# CI-12V2APS-C POWER SUPPLY CI-12V2APS-R POWER SUPPLY CI-12V2ABOARD INSTALLATION INSTRUCTIONS

## OVERVIEW

There are two versions of the CI-12V2APS: CI-12V2APS-C contains a transformer mounted inside the housing that requires a licensed electrician to wire. The CI-12V2APS-R is without a transformer mounted inside the housing. It uses a plug-in 16.5VAC, 50VA class 2 transformer that does not require an electrician to wire. Both versions use the same CI-12V2ABOARD UL Listed Subassembly. The CI-12V2APS-C or CI-12V2APS-R can be used as:

- A UL Listed power supply or subassembly for use with any Listed Fire Alarm Control Panel (FACP), Burglary Control Panel or Access Control System requiring an additional 12VDC auxiliary power

## LISTINGS

- UL1481 (for -C only)
- UL603
- NFPA 72 compliant
- UL985

## FACP, BURGLARY ALARM CONTROL PANEL OR ACCESS CONTROL UNIT AUXILIARY POWER SUPPLY INSTRUCTIONS

## INTRODUCTION

When used with any Listed Control Panel or Access Control System, the CI-12V2APS functions as an auxiliary 12V power supply with 3 outputs that can be used to indicate status (AC ON/OFF, BATTERY GOOD/TBL and SYSTEM GOOD/TBL) to the control panel.

- 3-Unsupervised active-low 2A outputs activated by AC FAIL, BATTERY TBL and MICRO TBL.
- 4 status LED's
- Power supply contains integral battery charger capable of charging up to 1 pair of 12AH/12V sealed lead acid batteries
- Solid State over-current protection
- Integral housing tamper switch inputs to protect against the unauthorized opening of the housing cover and a rear tamper protecting removal of the housing from its mounting surface
- Cabinet included with -C and -R versions
- Automatic switchover to stand-by battery when AC Fails
- In Commercial installations, the power supplies are not to be employed as a power source for local audible alarm sounding devices or for off-premises alarm transmitter/communicators

## CI-12V2APS-C 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 CI-12V2APS-C, CI-12V2APS-R and CI-12V2ABOARD)**

**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.

**BATT 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 120°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" (not provided with CI-12V2A board)

**Product Weight:** Approximately 20 lbs.

## CI-12V2APS-R & CI-12V2ABOARD 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 **BATTERY / CURRENT SPECIFICATIONS** tables).

**Standby Current:** 40mA for main board (subtract from overall rating).

### Housing

The CI-12V2APS-R comes complete with transformer, en-

closure and ample room for standby batteries. Each model requires either two 12V 4AH, 4.5AH, 5AH, 7AH, 7.5AH, 8AH batteries or two 12V / 12AH batteries.

### Programming

Associated control panel must have the zones programmed for the appropriate trouble indication and signaling.

## JUMPERS

If using this product with a non-NAPCO control panel, jumper J3 should be addressed as zero without any shunts installed.

**ENABLE BROWNOUT** (Required for Commercial Fire): If enabled (shunt installed) the power supply detects if the 120VAC input drops below 85% and generates an AC Fail trouble. The brownout shunt is installed at the factory. Brownout is required in Commercial Fire installations. Shunt can be removed in Burglary and Residential Fire applications, and must be removed when the NAPCO TRF-14 16.5VAC / 50VA plug-in transformer is used.

**CHARGING CURRENT:** Use to configure battery charging current. Install both shunts for 1A battery charging current. Remove J5 shunt only for 750mA battery charging current. Remove J6 shunt only for 350mA battery charging current (see **Standby Current Charts** for required jumper settings).

## INSTALLATION

The CI-12V2APS must be installed in accordance with NFPA 70, NFPA 72 and with article 760 of The National Electrical Code as well as all applicable local codes. Ensure the 120VAC branch circuit breaker is turned off before proceeding. Install the CI-12V2APS-C as follows:

1. Select a suitable location for the CI-12V2APS enclosure, ensuring that adequate space is available for mounting the enclosure on a wall with no interference from wires, pipes, or other obstructions. Mount the enclosure using fasteners suitable for the mounting surface. The mounting surface must be capable of supporting 20 pounds (6.3Kg) plus any additional weight of the installation hardware.
2. A licensed electrician must route a continuously-powered 120VAC source with a maximum 15A dedicated branch circuit with grounding conductor in accordance with all national and local electrical codes. Route the three wires (hot/black, neutral/white and earth ground/green or bare copper) through the upper left side housing knockout directly to the three wires marked "HOT" (black), "NEUTRAL" (white) and "EG" (green/bare copper) using connectors suitable for the application. **Note:** The Earth Ground wire must always be first connected to the "EG" terminal and last disconnected from the "EG" terminal and secured by a separate nut). Ensure the 120VAC branch circuit breaker remains turned off before proceeding.

## MAINTENANCE

The CI-12V2APS (all versions) should be tested at least once a month for proper operation as follows:

**LED STATUS INDICATION TABLE**  
(for inputs, outputs & trouble memory status)

LED NAME	OFF	ON
BAT TBL	Normal	Low Battery, no battery or charging circuit trouble
AC ON	AC Loss (running on battery)	AC present (with or without battery power)
TBL	Normal	Low battery, no battery or charging circuit trouble, AC Loss (running on battery), tamper indication, microprocessor failure, or overcurrent on Aux 1 or Aux 2.
PWR	No Power	Power present
AUX 1	Normal	Output Overload
AUX 2	Normal	Output Overload

**Output Voltage Test:** Under normal load conditions, the DC output voltage should be checked for proper voltage levels (12.1VDC nominal).

**Battery Test:** Under normal load conditions check that the battery is fully charged (approximately 13.5 to 13.8VDC). Check the voltage at the battery terminal and at the board terminal marked [-BAT +] to insure there is no break in the battery connection wires.

**Note:** Maximum charging rate is 1.5A. Expected battery life is approximately five years, however it is recommended changing batteries in four years or less if needed.

## OVERCURRENT PROTECTION

The battery pairs are protected with two 3A overcurrent protection devices. If batteries are mis-wired, a battery trouble will be initiated (refer to **LED STATUS INDICATION TABLE**). In addition, the CI-12V2ABOARD has a **RESET** button and two LED's used to indicate over-current (or short) with the associated output.

- When an over-current condition (or short) is detected on the **AUX 1** output, the 12V output will turn off and the AUX 1 fault LED will turn on.
- When an over-current condition (or short) is detected on the **AUX 2** output, the 12V output will turn off and the AUX 2 fault LED will turn on.

In either condition, the output will remain off until the **RESET** button is pressed and held for one second, then released, and the over-current condition (short) is no longer present.

**Fuse Replacement:** For model "CI-12V2APS-C" only; order Napco part W1025 (blue-wire harness).

## TERMINAL DESCRIPTIONS

1. **(+) AUX 1**
2. **(-) AUX 1**
3. **(+) AUX 2**
4. **(-) AUX 2**  
Auxiliary power outputs rated 12VDC regulated, 2A maximum. Maximum combined alarm + standby current output is 2A (less 40mA standby current for power supply board).
5. **(-) NO AC**  
Optional output: Active Low 2A Output. Normally active turns off when no AC or brownout is detected. Connect to power limited circuits only, 30VDC maximum.
6. **(-) BAT TBL**  
Active Low 2A Output. 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.
7. **(-) TBL**  
Active Low 2A Output. Normally active turns off when microprocessor stops functioning. Connect to power limited circuits only, 30VDC maximum.
8. **(+) REMOTE**
9. **(-) REMOTE**
10. **(-) REMOTE GRN**
11. **(+) REMOTE YEL**  
Terminals 8-11 are not used in this configuration. Leave unconnected.
12. **(+) TAMPER**  
Housing tamper positive terminal. Terminal 12 is not used in this configuration. If housing tamper is required, you must program and dedicate a control panel zone for this function, and wire the front and/or back tamper as required.

# BATTERY / CURRENT SPECIFICATIONS

CI-12V2APS-R, CI-12V2ABOARD RESIDENTIAL BURGLARY BATTERY / CURRENT SPECIFICATIONS						
BATTERY CONFIGURATION	JUMPER SELECTION			MAXIMUM 4 HOUR 12V STANDBY CURRENT* (RESIDENTIAL BURG)	MAXIMUM 24 HOUR 12V STANDBY CURRENT*	MAXIMUM 12V STANDBY + ALARM CURRENT*
	SHUNT 5	SHUNT 6	RECHARGE CURRENT (mA)			
TWO 12V 4AH, 4.5AH, 5AH	OFF	ON	750	1.25A	0.250A	1.35A
TWO 12V 7AH, 7.5AH	OFF	ON	750	1.35A	0.500A	1.35A
TWO 12V 8AH	OFF	ON	750	1.35A	0.550A	1.35A
TWO 12V 12AH	ON	ON	1000	1.1A	0.85A	1.1A

CI-12V2APS-R, CI-12V2ABOARD COMMERCIAL BURGLARY BATTERY / CURRENT SPECIFICATIONS						
BATTERY CONFIGURATION	JUMPER SELECTION			MAXIMUM 4 HOUR 12V STANDBY CURRENT*	MAXIMUM 24 HOUR 12V STANDBY CURRENT*	MAXIMUM 12V STANDBY + ALARM CURRENT*
	SHUNT 5	SHUNT 6	RECHARGE CURRENT (mA)			
TWO 12V 4AH, 4.5AH, 5AH	OFF	ON	750	1.25A	0.250A	1.35A
TWO 12V 7AH, 7.5AH	OFF	ON	750	1.35A	0.500A	1.35A
TWO 12V 8AH	OFF	ON	750	1.35A	0.550A	1.35A
TWO 12V 12AH	ON	ON	1000	1.1A	0.85A	1.1A

CI-12V2APS-R, CI-12V2ABOARD RESIDENTIAL FIRE AND/OR COMBINATION RESIDENTIAL BURGLARY AND FIRE BATTERY / CURRENT SPECIFICATIONS					
BATTERY CONFIGURATION	JUMPER SELECTION			MAXIMUM 24 HOUR 12V STANDBY CURRENT*	MAXIMUM 12V STANDBY + ALARM CURRENT*
	SHUNT 5	SHUNT 6	RECHARGE CURRENT (mA)		
TWO 12V 4AH, 4.5AH, 5AH	ON	OFF	350	0.250A	1.75A
TWO 12V 7AH	ON	OFF	350	0.500A	1.75A
TWO 12V 8AH	ON	OFF	350	0.550A	1.75A
TWO 12V 12AH	OFF	ON	750	0.85A	1.35A

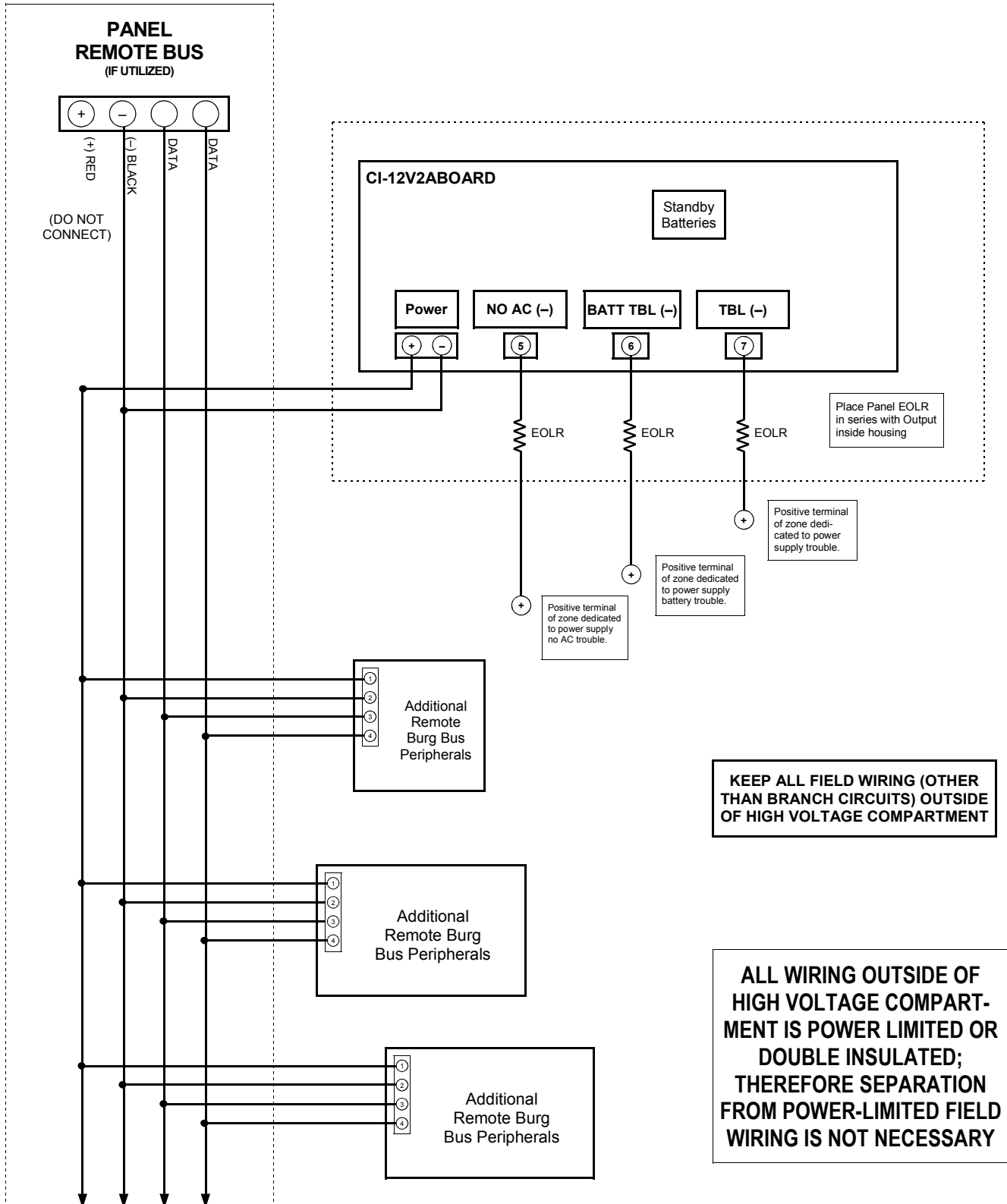
CI-12V2APS-C COMMERCIAL BURGLARY BATTERY / CURRENT SPECIFICATIONS						
BATTERY CONFIGURATION	JUMPER SELECTION			MAXIMUM 4 HOUR 12V STANDBY CURRENT*	MAXIMUM 24 HOUR 12V STANDBY CURRENT*	MAXIMUM 12V STANDBY + ALARM CURRENT*
	SHUNT 5	SHUNT 6	RECHARGE CURRENT (mA)			
TWO 12V 4AH, 4.5AH, 5AH	ON	ON	1000	1.25A	0.250A	1.75A
TWO 12V 7AH, 7.5AH	ON	ON	1000	2A	0.500A	2A
TWO 12V 8AH	ON	ON	1000	2A	0.550A	2A
TWO 12V 12AH	ON	ON	1000	1.1A	0.850A	2A

CI-12V2APS-C COMMERCIAL FIRE BATTERY / CURRENT SPECIFICATIONS					
BATTERY CONFIGURATION	JUMPER SELECTION			MAXIMUM 24 HOUR 12V STANDBY CURRENT*	MAXIMUM 12V STANDBY + ALARM CURRENT*
	SHUNT 5	SHUNT 6	RECHARGE CURRENT (mA)		
TWO 12V 4AH, 4.5AH, 5AH	ON	ON	1000	0.250A	2A
TWO 12V 7AH, 7.5AH	ON	ON	1000	0.500A	2A
TWO 12V 8AH	ON	ON	1000	0.550A	2A
TWO 12V 12AH	ON	ON	1000	0.85A	2A

\*Less 40mA standby current for power supply board

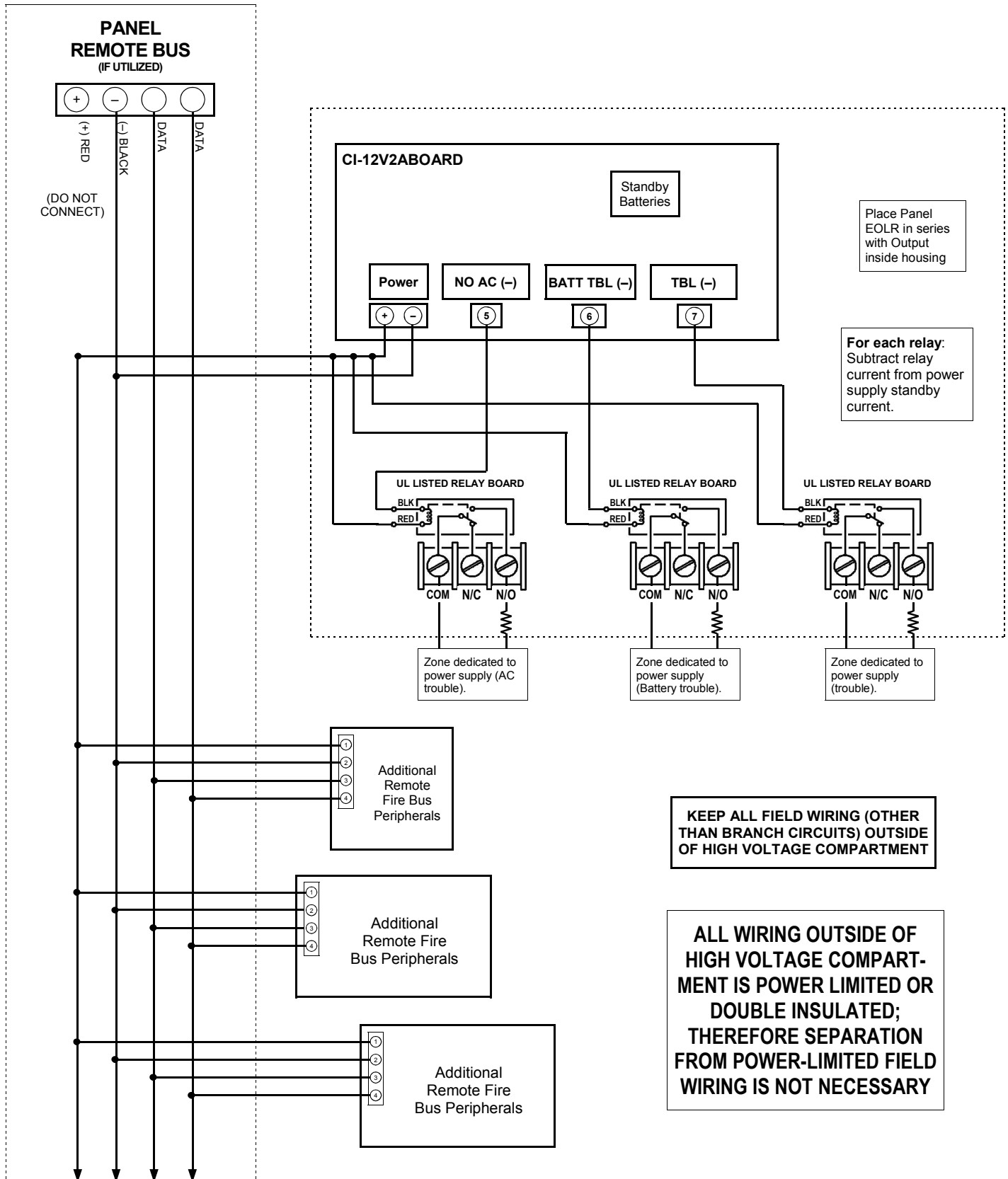
# BURGLARY ALARM AUXILIARY POWER SUPPLY WIRING DIAGRAM

This wiring is for panels where the negative terminal of the zone is common to system ground. If the negative terminal of the zone is not common to system ground, then each trouble output requires a relay suitable for the application as shown on page 5.



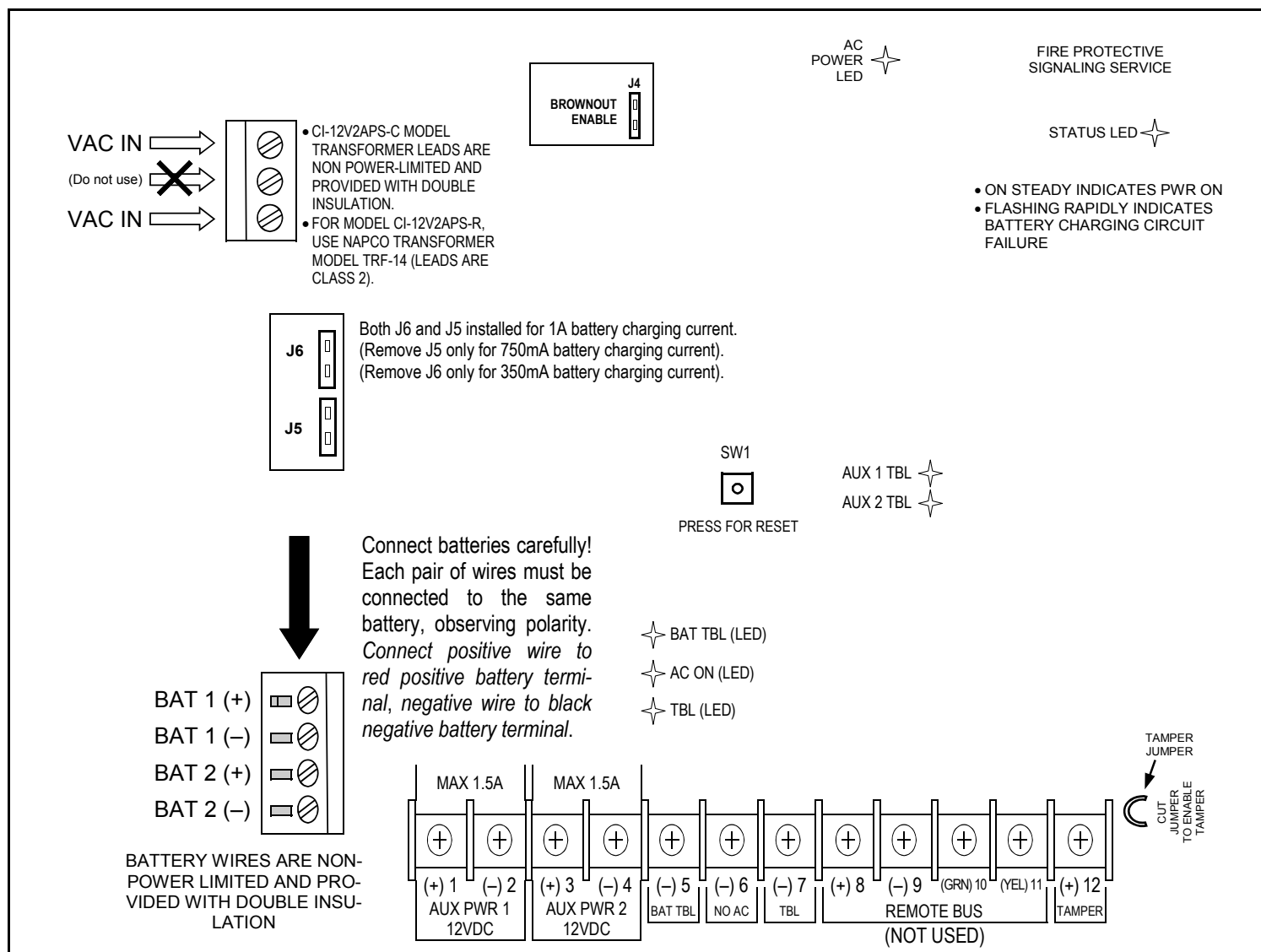
# FIRE ALARM AUXILIARY POWER SUPPLY WIRING DIAGRAM

This wiring is for panels where the negative terminal of the zone is not common to system ground. Each trouble output requires a relay suitable for the application as shown.



# REGULATED POWER SUPPLY

## CI-12V2APS-C, CI-12V2APS-R & CI-12V2ABOARD WIRING DIAGRAM



1. MAX COMBINED 12V REGULATED (MAX 0.5V RIPPLE) **AUX PWR** OUTPUT = 2 AMPS FOR -C VERSION, 1.75A FOR -R VERSION (**LESS 40mA** **STANDBY CURRENT FOR POWER SUPPLY BOARD**).
2. INPUT RATED 120V, 1A, 60HZ FOR -C VERSION; 120V, 60HZ, 60W FOR -R VERSION.
3. MAX 12V REGULATED (MAX 0.5V RIPPLE) **AUX PWR** OUTPUT FROM EITHER OUTPUT = 1.5 AMPS.
4. REFER TO W11872 FOR ADDITIONAL INSTALLATION INSTRUCTIONS AND STANDBY CURRENT BATTERY CHARTS.
5. **AUX PWR 1** AND **AUX PWR 2** WIRES ARE POWER LIMITED.
6. CONNECT **BAT TBL**, **NO AC** AND **TBL** TERMINALS ONLY TO POWER LIMITED SOURCES MAX 30V, 2A.
7. ROUTE POWER LIMITED WIRING OUTSIDE OF TRANSFORMER COMPARTMENT.
8. STANDBY CURRENT DETERMINED BY BATTERIES AND APPLICATION.
9. WIRE RANGE 14-22AWG. MAXIMUM TWO WIRES PER TERMINAL. EXCEPTION: ONE WIRE PER TERMINAL FOR BATTERY TERMINAL BLOCK AND "VAC IN" TERMINAL BLOCK.
10. INSTALL IN ACCORDANCE WITH NFPA 72 AND ALL LOCAL CODES.

### CI-12V2APS-C COMMERCIAL BURGLARY BATTERY / CURRENT SPECIFICATIONS

BATTERY CONFIGURATION	JUMPER SELECTION			MAXIMUM 4 HOUR 12V STANDBY CURRENT*	MAXIMUM 24 HOUR 12V STANDBY CURRENT*	MAXIMUM 12V STANDBY + ALARM CURRENT*
	SHUNT 5	SHUNT 6	RECHARGE CURRENT (mA)			
TWO 12V 4AH, 4.5AH, 5AH	ON	ON	1000	1.25A	0.250A	1.75A
TWO 12V 7AH, 7.5AH	ON	ON	1000	2A	0.500A	2A
TWO 12V 8AH	ON	ON	1000	2A	0.550A	2A
TWO 12V 12AH	ON	ON	1000	1.1A	0.850A	2A

### CI-12V2APS-C COMMERCIAL FIRE BATTERY / CURRENT SPECIFICATIONS

BATTERY CONFIGURATION	JUMPER SELECTION			MAXIMUM 24 HOUR 12V STANDBY CURRENT*	MAXIMUM 12V STANDBY + ALARM CURRENT*
	SHUNT 5	SHUNT 6	RECHARGE CURRENT (mA)		
TWO 12V 4AH, 4.5AH, 5AH	ON	ON	1000	0.250A	2A
TWO 12V 7AH, 7.5AH	ON	ON	1000	0.500A	2A
TWO 12V 8AH	ON	ON	1000	0.550A	2A
TWO 12V 12AH	ON	ON	1000	0.85A	2A

\*Less 40mA standby current for power supply board  
SEE W11828 FOR BURGLARY STANDBY AND ALARM RATINGS.

# WARRANTY / TERMS & CONDITIONS Standard Terms of Sale

## Ordering

Orders for Continental products may be placed by calling Continental's order department or by issuing a purchase order specifying the quantity of Products, the desired delivery date, shipping method, and the location to which product should be shipped. If an order is placed by telephone, it must be confirmed in writing by fax or mail.

If the customer requests a guaranteed ship date or expedited shipping, Continental reserves the right to add to the price, with the customer's approval, expenses which increase the cost of production and delivery, i.e. freight charges, overtime expenses, etc. Continental reserves the right to change any price on this price list and all prices are subject to factory reconfirmation at the time of placing an order.

## Sales Assistance

Continental will furnish to customers, reasonable quantities of product-related catalogs and other sales and promotional literature.

Continental will provide customer training, both technical and sales at Continentals facilities in New York. Contact the factory for costs and requirements.

## Payment Terms

- Sales terms are Cash on Delivery (COD) unless prior credit arrangements are established.
- If credit arrangements are established with Continental, terms of sale are net 10 days.
- Interest charges shall accrue on all past due accounts at a rate of 1.5% per month (18% APR).
- Continental reserves the right to place a customer on a C.O.D. status in the event that customer's account becomes delinquent or Continental becomes unsure about customer's financial capabilities.
- Continental will charge a Service Fee of \$50.00 for any returned check.
- If customer believes an invoice to be in error, customer shall notify Continental of the error within thirty (30) days.
- Continental reserves a security interest in all products sold hereunder, together with all proceeds thereof to secure the performance of the customer's obligations hereunder.
- All orders unless otherwise requested are shipped F.O.B. Amityville, NY.

## Cancelled Orders

Special or custom order items that cannot be cancelled with our suppliers are subject to a 100% cancellation charge.

No unauthorized, returned merchandise will be accepted for credit.

Orders returned or canceled are subject to a 25% restocking charge.

## Return Material Authorizations

No products will be accepted for return to Continental without prior written authorization (RMA). Unauthorized returns will not be accepted from the carrier by the receiving department. The customer may request a return material authorization (RMA), whether for credit or repair of the product. Continental will either issue an RMA or provide the customer with a written explanation for not issuing the RMA. Except for warranty claims, no returns will be accepted more than 60 days after shipment from Continental. Orders that are accepted for return are subject to a 25% restocking charge. No product will be accepted for return which has been special ordered or custom in nature.

## Limited Warranty

Return Material Authorization (RMA) numbers are required to be issued by Continental prior to returning any Product for service, repair, credit or exchange. Continental warrants that its Products shall be free from defects in materials and workmanship for a period of one year from date of shipment of the product to purchaser. The warranty on 3rd party equipment such as terminals, printers, and communications devices shall be 1 year from date of shipment. Remediation of this warranty shall be limited to the repair or replacement of those products which are defective or become defective under normal use. Continental's warranty shall not extend to any product which is found after examination to be defective as a result of misuse, improper storage, incorrect installation, operation or maintenance, alteration, modification or accident.

There are no other warranties which extend beyond this provision. This warranty is in lieu of all other warranties whether express, implied or statutory, including implied warranties of merchantability or fitness for any particular purpose. No representation or warranty of the distributor shall extend the liability or responsibility of the manufacturer beyond the terms of this provision. In no event shall Continental be liable for any costs, loss of profits, loss of use, incidental, consequential or special damages to any person resulting from the use of Continental's products.

The above limited warranty is the only warranty provided by Continental. Continental makes no other warranties or guarantees, whether expressed or implied, including, but not limited to, warranties and/or guarantees of merchantability or fitness for a particular purpose. In no event shall Continental be liable for any indirect, consequential or incidental damages, including those to person and those for lost wages, or other economic loss.

## Product Liability

Continental's sole Liability and the customer's exclusive remedy for damages, shall not exceed the cost of correcting the defect and in no event shall such liability be greater than the purchase price paid by the customer for the defective equipment or software. Under no Circumstances will Continental be liable for direct, indirect or consequential damages of any kind.

## General Notices:

In order to assure that Continental's customers receive the most accurate and reliable information possible, Continental at times monitors telephone calls. Information and pricing contained within this document are subject to change without notice.

Continental does not recommend that these products be used as the primary means of monitoring, warning or egress. Primary warning or monitoring systems should always meet local fire and safety code requirements.

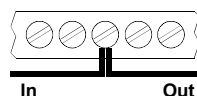
This transaction shall be governed and construed in accordance with the laws of the State of New York.

Continental specifically rejects any terms or conditions stated by the customer or contained within purchase documents or correspondence from the customer which are in addition to, conflict with or limit, terms or conditions set forth herein. The customer's execution or other acceptance of this proposal or its acceptance of delivery of all or part of the goods to be delivered hereunder shall constitute customer's acceptance of the terms and conditions herein and shall be deemed to exclude any additional, conflicting or limiting terms stated by customer or contained in customer's purchase documents or correspondence.

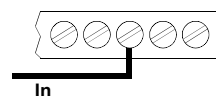
## IMPORTANT WIRING METHODS



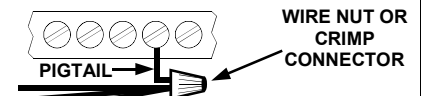
**For single-conductor terminal blocks** (like the type shown at left), to terminate more than one conductor to a terminal, use the wiring methods shown at right:



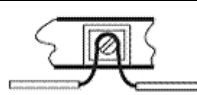
Incorrect



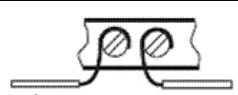
Correct -- Single incoming and/or pigtail with wire nut / crimp connectors



**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:



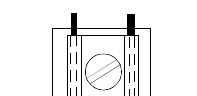
Incorrect



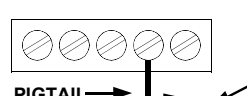
Correct -- Separate incoming and outgoing conductors



**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



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