

**NT1-200, NT1-200/296
Battery Backup
NT1-200 Add-on Battery
Installation Instructions**

The Battery Backup units for Tone Commander NT1 Racks and ISDN Power Supplies provide backup NT1 and terminal power (PS1 and PS2) during a power failure. The NT1-200 Battery Backup is used with the NT1B-300 Rack, NT1-220 Rack, and PS-50 ISDN Power Supply; the NT1-200/296 version is used with the NT1-296 Rack. An optional Add-on Battery is available to increase the duration of backup power.



Specifications

NT1-200, NT1-200/296 Battery Backup

Built-in management circuit (protection, charging, and monitor display).
 Output Voltage 42 - 55 VDC
 Charging Current 700 mA max. (shared with the NT1-200 Add-on Battery if present)
 Battery Capacity 7 AH
 Overcurrent Protection 6.25 A, 250 V Slow Blow fuse
 Physical Dimensions 3.5" H x 17.3" W x 6.2" D
 Weight 27 lbs.
 Operating Temperature 0° - 40° C (32° - 104° F) *Note: Battery life decreases above 20° C (68° F)*
 Humidity 5% to 95%, non-condensing
 Alarm Contacts 48 VDC @ 0.5A max. (resistance load)
 Battery Type Sealed lead-acid, maintenance-free
 In-service Battery Life 3 - 6 years @ 20° C (68° F)

NT1-200 Add-on Battery

Output Voltage 42 - 55 VDC
 Charging Current shared with NT1-200(/296) Battery Backup
 Battery Capacity 7 AH
 Overcurrent Protection 6.25 A, 250 V Slow Blow fuse
 Physical Dimensions 3.5" H x 17.3" W x 6.2" D
 Weight 27 lbs.
 Operating Temperature 0° - 40° C (32° - 104° F) *Note: Battery life decreases above 20° C (68° F)*
 Humidity 5% to 95%, non-condensing
 Battery Type Sealed lead-acid, maintenance-free
 In-service Battery Life 3 - 6 years @ 20° C (68° F)



Important Safety Instructions

- To be installed only in restricted access areas (dedicated equipment rooms, equipment closets, or the like) in accordance with Articles 110-16, 110-17, and 110-18 of the National Electrical Code, ANSI/NFPA No. 70.
- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone wires.
- Do not mount the NT1-200(/296) Battery Backup or the NT1-200 Add-on Battery within 12" of a heat source.

Contents of Shipping Box

NT1-200, NT1-200/296 Battery Backup

- (1) Battery Backup
- (1) Interconnecting "Y" Cable
- (2) Mounting brackets
- (4) Mounting bracket screws
- (1) Fuse cap and fuse

NT1-200 Add-on Battery

- (1) NT1-200 Add-on Battery
- (2) Mounting brackets
- (4) Mounting bracket screws
- (1) Fuse cap and fuse

Installation

Rack Mounting

The NT1-200(/296) Battery Backup and the NT1-200 Add-on Battery can be mounted in an EIA standard 19" commercial or 23" Telco rack.

1. Attach the mounting brackets to the Battery Backup and/or Add-on Battery in the 19" or 23" mounting position as needed, using the supplied mounting bracket screws (see Figure 1).
2. Mount the battery units to the 19" or 23" rack using suitable fasteners. Refer to Figures 2-5 for mounting positions and required clearances.

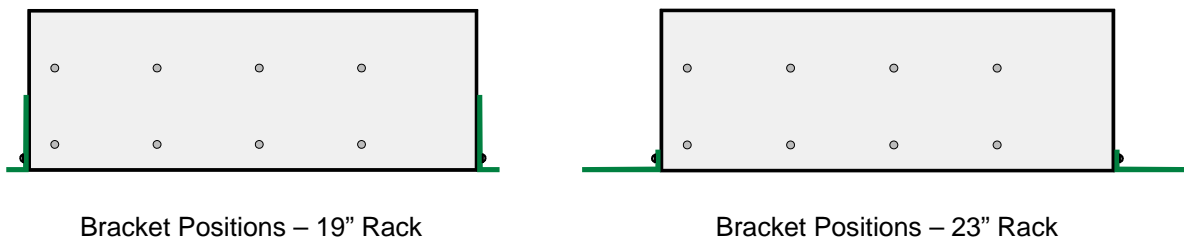


Figure 1 – Rack Mount Bracket Positions

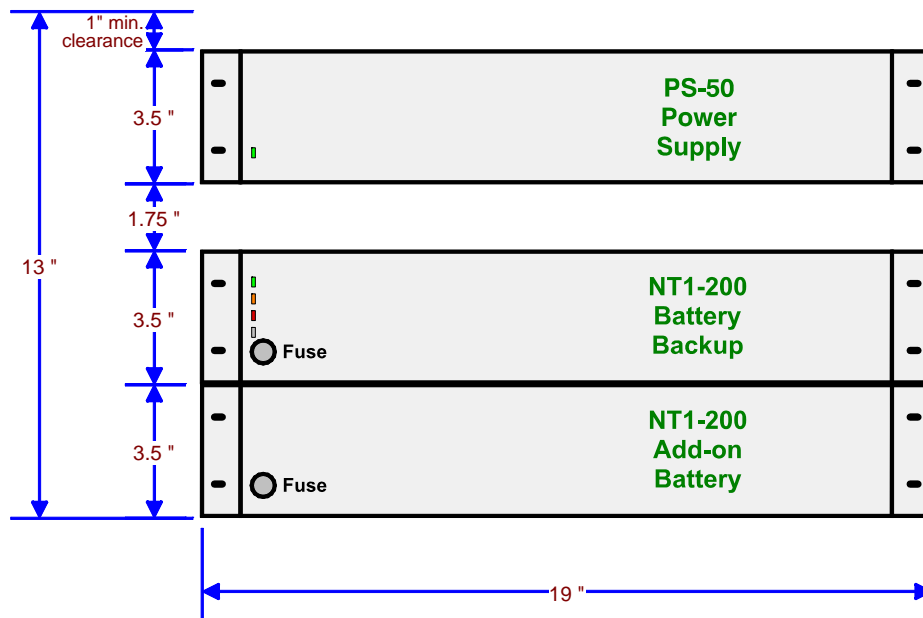


Figure 2 – Rack Mounting with PS-50

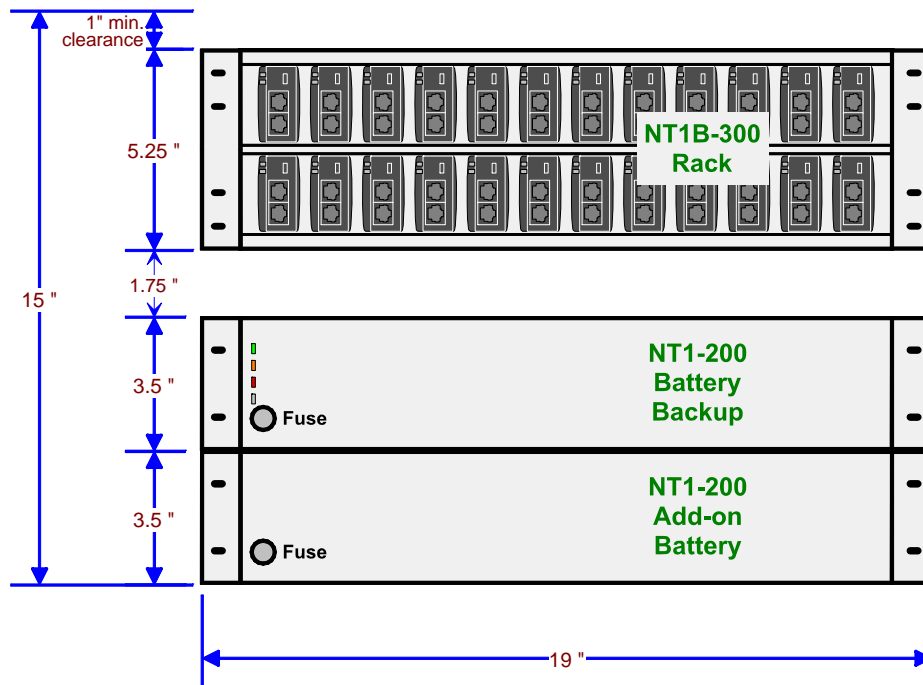


Figure 3 – Rack Mounting with NT1B-300 Rack

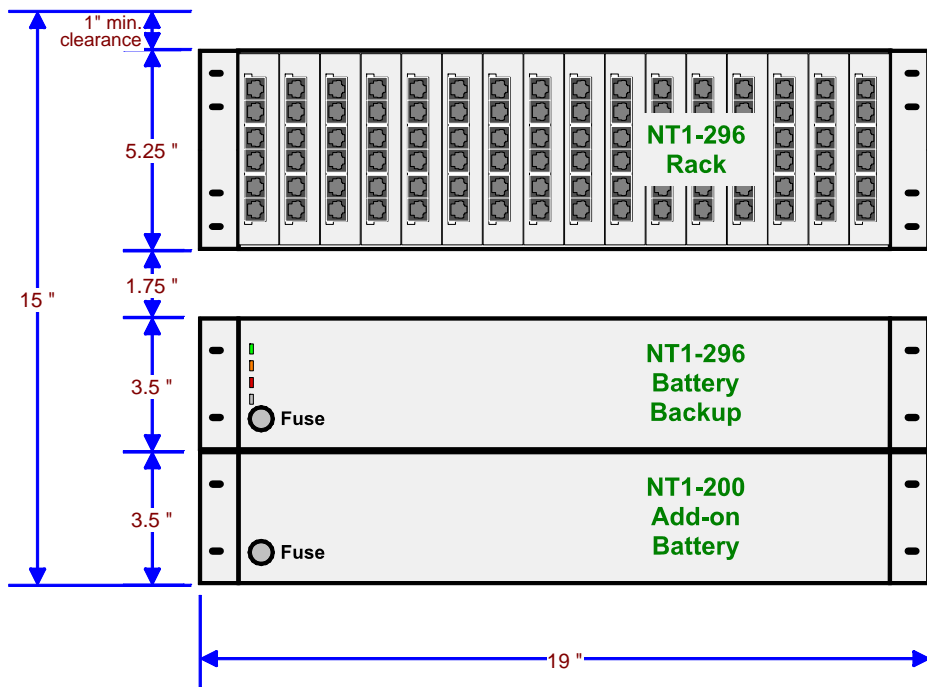


Figure 4 – Rack Mounting with NT1-296 Rack

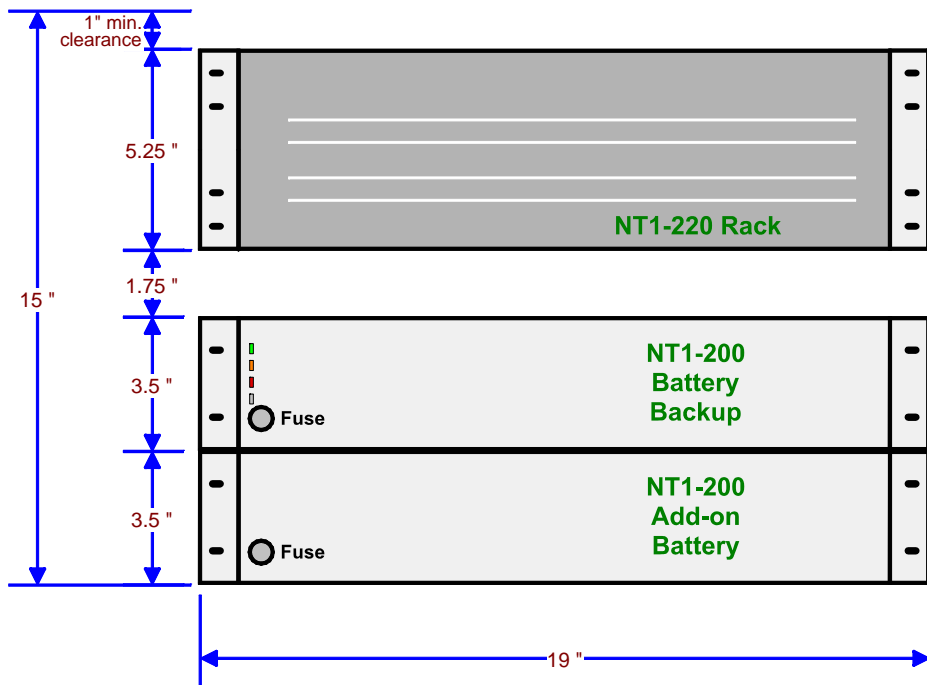


Figure 5 – Rack Mounting with NT1-220 Rack

Wall Mounting

1. Attach mounting brackets to the Battery Backup and/or Add-on Battery in the wall mounting position using the supplied mounting bracket screws (see Figure 6).
2. Fasten a plywood sheet to the wall, $\frac{3}{4}$ " minimum thickness. **Do not mount the rack or battery units directly to drywall material.**
3. Mark and pre-drill the mounting holes for the battery backup and/or add-on battery. Refer to Figures 7–10 for hole locations and required clearances.
4. Attach the battery backup and/or add-on battery to the plywood using four suitable fasteners.



The Battery Backup and Add-on Battery must be fastened securely; these units weigh 27 lbs. each!

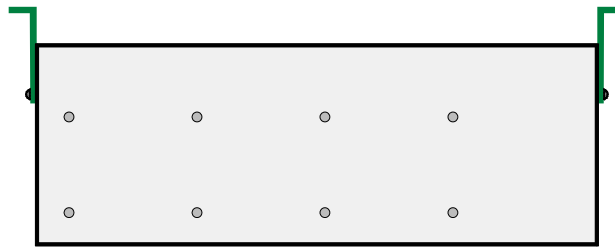


Figure 6 – Wall Mount Bracket Positions

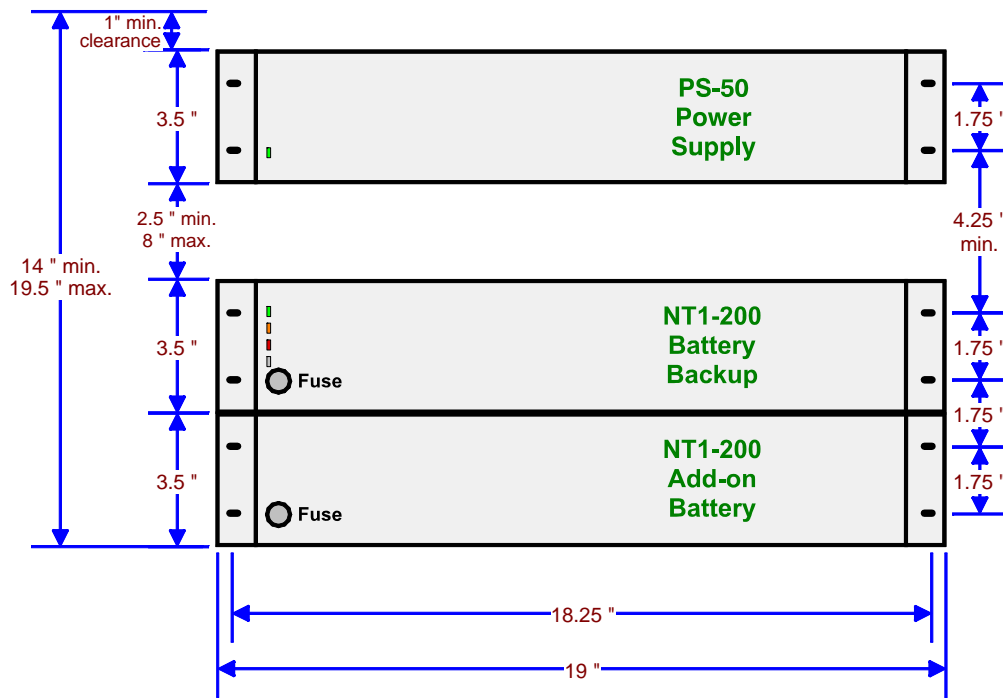


Figure 7 – Wall Mounting with PS-50

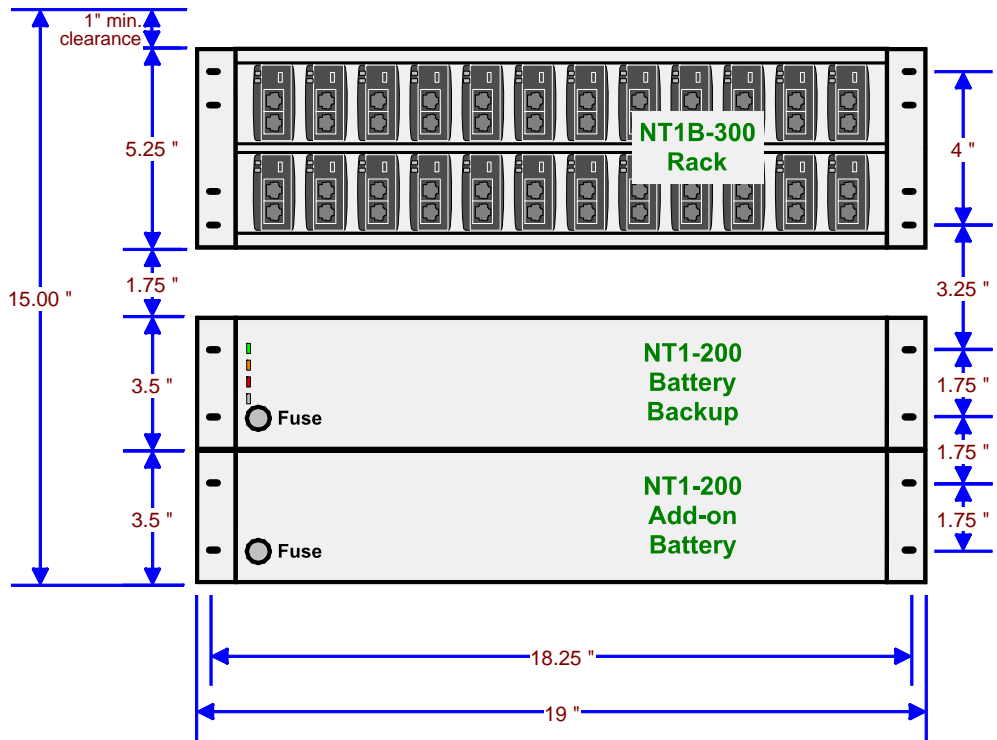


Figure 8 – Wall Mounting with NT1B-300 Rack

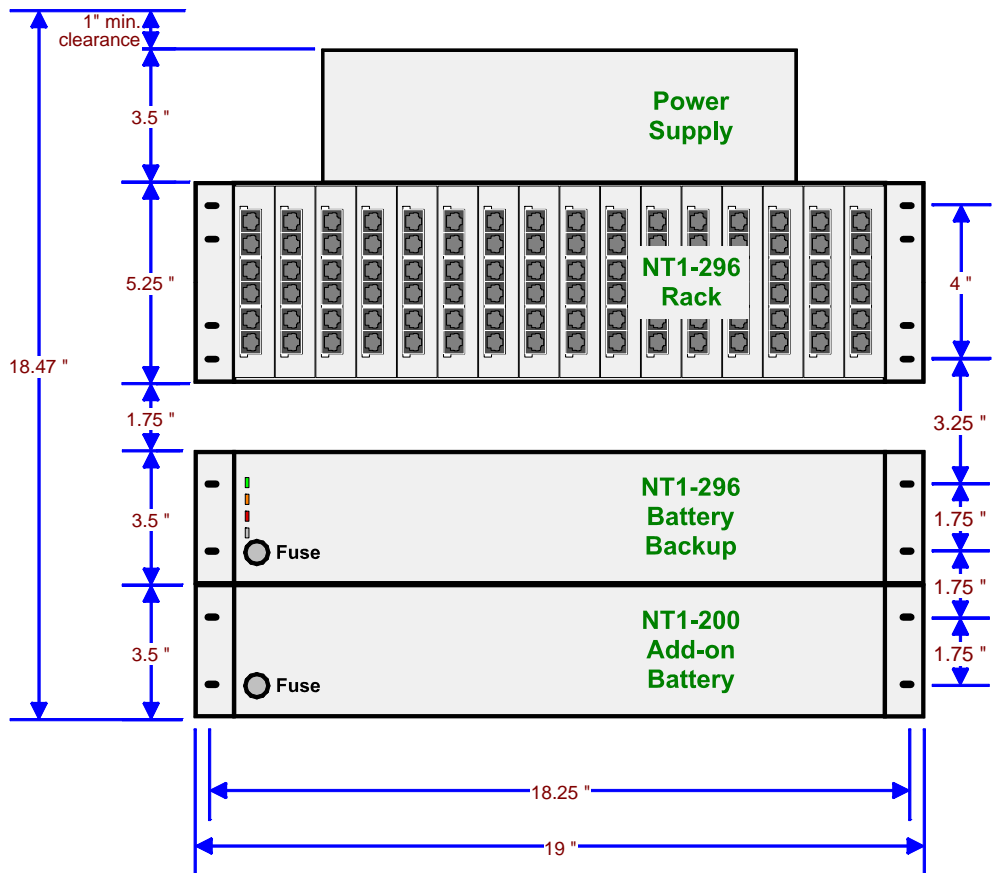


Figure 9 – Wall Mounting with NT1-296 Rack

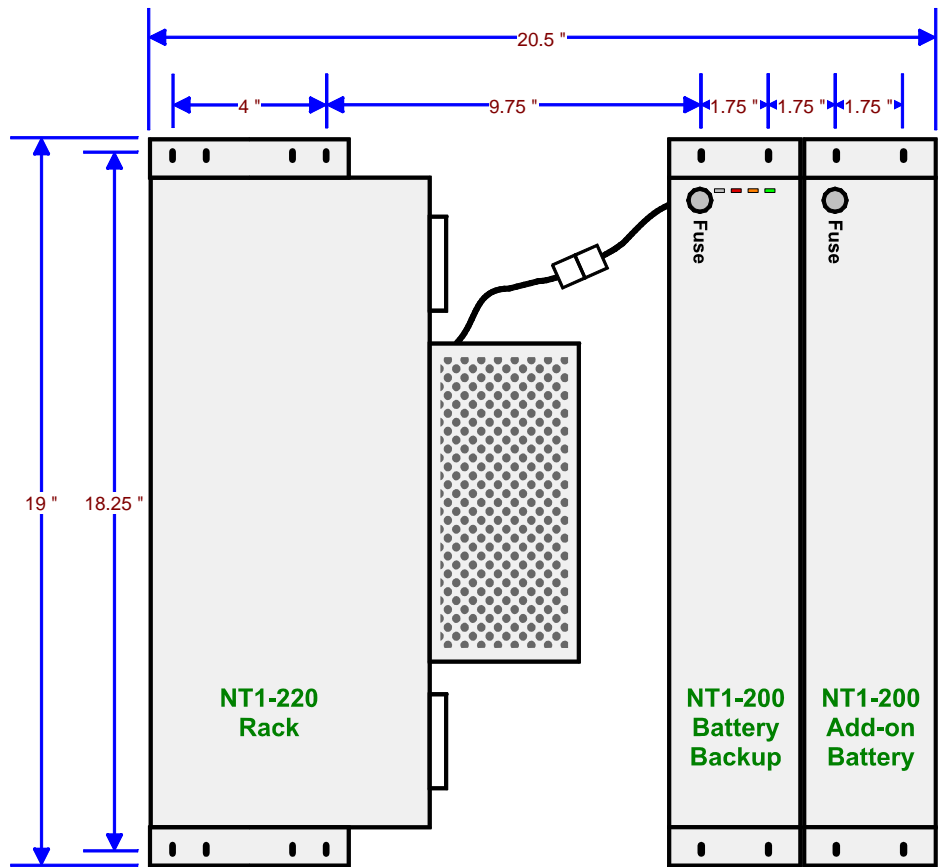


Figure 10 – Wall Mounting with NT1-220 Rack

Cable Connection

To avoid power supply connector damage due to load inrush currents, make sure all NT1s are removed from the rack before cable connections are made.

Refer to Figure 11.

1. Make sure that no NT1s are inserted in the rack.
2. Unplug the power supply output cable from the NT1 rack or PS-50.
3. Plug the 4-pin connector on the “Y” cable into the upper connector on the back panel of the Battery Backup.
4. Connect the short wires on the “Y” cable to the power supply output cable female connector.
5. Plug the long wires on the “Y” cable into the NT1B-300 Rack, NT1-296 Rack, NT1-220 Rack, or PS-50 “POWER” connector.
6. Insert the fuse into the fuse holder on the Battery Backup front panel and secure with the supplied fuse cap. The Backup Power indicator will light.
7. Connect AC power to the power supply.
8. Install NT1s in the rack.

Add-on Battery

Refer to Figure 11.

1. Insert the fuse into the fuse holder on the Add-on Battery front panel and secure with the supplied fuse cap.
2. Plug the Add-on Battery wires into the center connector on the back panel of the Battery Backup (AC power may be connected).

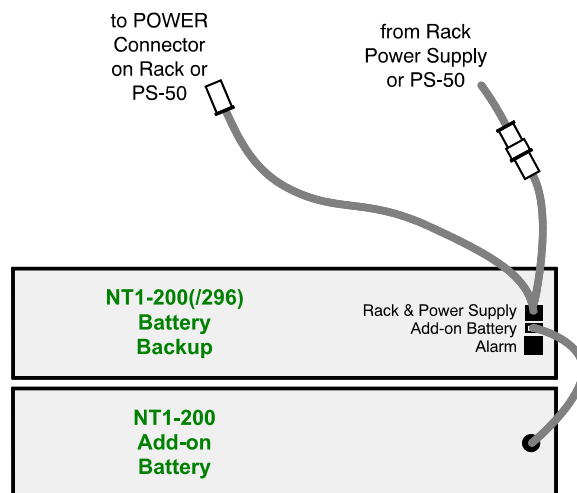


Figure 11 – Battery Connections

Alarm

The alarm modular jack provides two relay contact circuits for alarm monitoring. Make sure that you do not exceed the relay contact rating of 48 VDC @ 0.5 A (resistive). During AC power loss, pins 2 and 5 are shorted and pins 3 and 4 are open as shown in Figure 12.

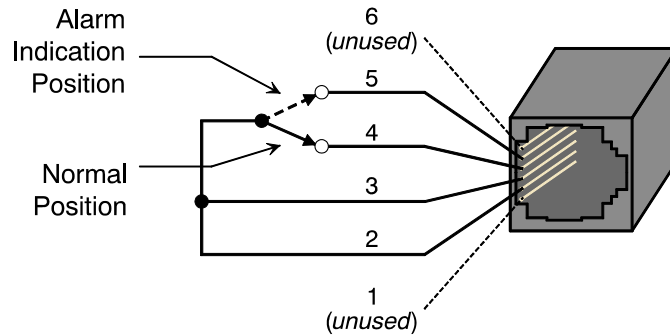


Figure 12 – Alarm (6 Position Modular Jack)

Status Indicators

The Battery Backup has four status indicator LEDs on the front panel.

Status Indicator LED	Description
AC Power (green)	Battery Backup is connected to the rack and the rack is currently being fed from the power supply.
Charging (Yellow)	The Battery Backup (and the Add-on Battery, if present) are currently being charged. Does not light when the rack is on backup power.
Backup Power (Red)	The rack is currently being powered by the Battery Backup (and the Add-on Battery, if present).
Overload (Red)	Too much power is being drawn from the Backup Battery and/or the Add-on Battery. Investigate and remove the fault condition.
all LEDs off	Batteries are fully discharged, or a fuse is blown.

Service

Repair of the NT1-200 or NT1-200/296 Battery Backup and the NT1-200 Add-on Battery must be done by Tone Commander. Prior to equipment removal, call Tone Commander Customer Service for assistance in determining the source of the problem. This critical action can often prevent needless removal of equipment and subsequent customer inconvenience.

Tone Commander
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Tone Commander is committed to meeting the product needs of our customers. Please write or call us with any suggestions for improvement.

Tone Commander Product Warranty

For a period of one year from date of dealer purchase, but not to exceed 16 months from date of manufacture, Tone Commander Systems, Inc. (Tone Commander) warrants its products to be free from defects in material and workmanship under conditions of normal use and service. Tone Commander shall, at its option, repair or replace any defective product which, in its opinion, has not been misused, damaged, or improperly installed.

Repair or replacement under this warranty will be performed at Tone Commander's factory. Authorization must be obtained from Tone Commander prior to returning a product for repair. Freight must be prepaid for all units returned to Tone Commander. Units repaired under warranty will be shipped UPS Ground (or equivalent), freight prepaid by Tone Commander.

Products that are older than the warranty period, but less than 7 years old, or still manufactured by Tone Commander may be repaired at the factory for a flat rate charge. Repaired out-of-warranty units are warranted for 90 days from the date of repair.

The repair or replacement of a product under this warranty represents the entire obligation of Tone Commander; Tone Commander shall not be liable for any special or consequential damages resulting from or caused by any defect, failure, incapacity or malfunction of any of its products.

The foregoing express warranty is in lieu of all other warranties, express or implied, including but not limited to any implied warranty of merchantability, fitness, or adequacy for any purpose or use, quality, productiveness or capacity; Tone Commander, to the extent permitted by law, hereby disclaims all such other warranties.