

STATUS Modes:

Healthy Battery [Mode 0]:

This is the normal mode for most batteries. Once the CHARGE cycle is complete, the battery can be returned to service.

Battery Capacity Warning [MODE 1]:

After the charger has entered the Pulsed-Current float cycle, it will periodically check the battery capacity - approximately once an hour. It does this by stopping the top-up pulses for a short duration and checking the battery terminal voltage response. If the battery terminal voltage drops below the threshold level then the charger will go into [MODE 1]. Even if the unit detects a low battery capacity, it will continue to charge the battery.

[MODE 1] is a warning that the battery capacity is getting low and may be nearing the end of its usable life. **Before the battery is replaced, it should be checked by a calibrated battery tester.**

Defective or Disconnected Battery [MODE 2]:

If the battery is disconnected or is defective, the charger will go into [MODE 2] and remain there until a healthy battery is connected. **The charger will not charge a battery in this mode.** When a healthy battery is reconnected the charger will return to [MODE 1] and begin the charging cycle, unless a problem is detected.

Over Temperature [MODE 3]:

If a battery over temperature condition occurs, the charger will stop the charge cycle and enter into [MODE 3]. The charger will periodically check the temperature of the battery and if the temperature drops below the maximum allowed temperature the charger will resume the charge cycle and return to [MODE 1].

Over Current [MODE 4]:

If an over current / short circuit condition is detected, the charger will stop the charge cycle and enter into [MODE 4]. This is considered a major fault condition. To protect the battery and the charger itself, the charger will need to be powered off and restarted to resume the charge cycle.

Charger Safety Features

Short Circuit Protection: Protects the charger from short-circuit damage.

Over Current Protection: Protects the charger from over-current demand.

Over Voltage Protection: Protects the battery pack from damage.

Battery Polarity Reversal: Protects the charger and battery pack against incorrectly installed batteries.

Low Battery Voltage: When the battery pack falls below 7V, the charger will not operate in Normal Charge Mode.

Charger Specifications

Input Voltage: 100-120VAC
Input Frequency: 47-63Hz
Output Voltage: @Fast Charge: 14.4VDC; Float: 13.6VDC
Output Current: DC 1,000mA (Fast Charge)
Battery Capacity: 5-20Ahr (recommended)
Operating Temp: +32F/0C to +104F/40C
Storage Temp: -4F/-20C to +140F/60C

Instruction Manual RRP-433 Charger

Single Port for RediPak™ & SmartPack® Battery Packs

plus

Single Port for WABTEC® Next Gen End of Train Device



www.railroadpc.com

eng@railroadpc.com
tel: 888-255.2755

©2016 Allcom Products Illinois, LLC. All Rights Reserved.
Allcom Products™ and Railroad Products™ are trademarks of Allcom Products Illinois, LLC.

Please check our website: www.allcompc.com for all applicable specifications, and models pertaining to these series.

This manual contains safety and operating instructions for the RRP-433 combined charger for WABTEC® NextGen ETD and Redi-Pak™ and SmartPack® battery packs. Before using this charger, please read all of the instructions for both the charger and also for the battery pack to be charged.

CAUTION: For use with Sealed Lead Acid (SLA) Batteries only.

Warnings

To reduce the risk of injury, charge only appropriate WABTEC® NextGen End-of-Train devices or 12V 5-20 Ahr RediPak / SmartPack battery packs. Do not charge non-rechargeable batteries.

Other types of batteries might burst the casing causing personal injury or other damage!

Do not disassemble the charger. Opening the charger will void the warranty and can result in risk of electrical shock or fire.

Never use the charger as a DC power source for any electrical equipment.

Never operate the charger with a damaged cord or plug. Use only the cord supplied with the charger. Inspect both input and output cords for damage before using charger.

Never unplug a cord by pulling on the cord itself. Always grasp the plug when disconnecting the charger.

For indoor use only. Do not expose charger to rain, snow or excessive moisture.

Never charge a frozen battery

The battery must be placed in a well ventilated area during charging.

This box contains safety and operating instructions for the WABTEC® NextGen port of the charger (small connector)

- 1) Plug the power cord into the charger
- 2) Plug the power cord in a grounded 110/120 VAC.
- 3) Plug the charger lead into the ETD charging port.

Please note: The LED's on the face plate of the charger only indicates the charge port is operational.

The charging circuit for the ETD is built into the ETD. Refer to the charge status display on the ETD for the battery charge status and battery information.

If the LED turns off when the charging cord is plugged into the EOT; the EOT internal charger or EOT battery is defective.

This box contains safety and operating instructions for the Redi-Pak™/SmartPack® port of the charger (large connector)

Three stage charge cycle

Battery manufacturers recommend using multi-stage charging to reduce the stress on the battery while giving the shortest possible charge time. The RRP-431 / RRP-432 series chargers implement the ideal charge cycle by applying a Constant-Current charge for 70%-80% of the charge cycle and a Constant-Voltage charge for the remaining 20%-30%. This is done to prevent the battery from gassing as it approaches full charge, thus extending the usable life of the battery. Once the battery has achieved it's optimal charge level, the charger will maintain the charge using a Pulsed-Current float charge.

Thermal Compensation

In order to obtain maximum service life of the battery pack, a temperature sensor built into the charge connector monitors the overall temperature of the battery pack. The optimum terminal voltage for the charging process is dependant on battery temperature. As the temperature of the battery pack rises, the charging voltage is reduced to prevent over charge. As the temperature falls, the charge voltage is increased to avoid under charge. If the battery pack temperature exceeds 120°F, the charger will stop charging the battery pack and the STATUS light will report an over temperature error. Once the battery pack temperature falls back into the acceptable range, the charger will resume charging the battery.

Charging Process

1. Plug in and turn on the charger. The STATUS light will flash: [MODE 2] indicating that the unit is powered and there is no battery attached.
2. Attach the battery to be charged.
3. The unit will analyze the battery and begin the charging process indicated by the constant illumination of the STATUS light (indicating a healthy battery) and the constant illumination of the CHARGE light (indicating the charge cycle is in process).
4. The battery is fully charged when the CHARGE light is no longer lit and the STATUS light is constantly illuminated.

The CHARGE light may repeatedly briefly illuminate at the conclusion of the charge cycle. This is normal and indicates that the charger is in the Pulse-Current float charge. The battery is fully charged and is ready for use.

Please save these instructions for future reference.

Status Mode Descriptions on Back