

**FIELD INSTALLATION OF  
R3 POWER SUPPLY BALLAST RESISTOR (EJ1127-##)**

**BACKGROUND**

The AT Series Power Supply Ballast Resistor (EJ1127-##) is an assembly that helps provide 12+/- Vdc power to the charger's Main Control PC Board (A1) via the dc bus. It is wired to the charger's dc output terminals (TB1+/-), and draws power from any connected batteries. One can identify this resistor on electrical schematics, connection diagrams, and internal component layout drawings, by its reference designator "R3".

In AT10.1 Group II (30-100 Adc) and AT30 (25-1000 Adc) Battery Chargers, the power supply ballast resistors for 12 Vdc and 24 Vdc units are soldered directly onto the unit's Gate Driver PC Boards (A11/A15). Since they are considered *part* of the 12/24 Vdc Gate Driver PC Board assemblies (A11/A15), component "R3" will *not* be featured in Parts Data Package Reports.

**NOTICE**

On 12/01/2001, the old AT10 Main Control PC Board (EN0024-00) was obsoleted, replaced by the new *improved* AT10.1 Main Control PC Board (EN5002-00). The dc power requirements for the new EN5002-00 pc board were slightly increased. Therefore, if you are installing a new EN5002-00 into an *older* AT Series battery charger, you may want to also upgrade the Power Supply Ballast Resistor assembly (EJ1127-##) to the new standard.

**PREPARATION**

Identify the AT Series Battery Charger Line, enclosure type, Power Supply Ballast Resistor (R3) assembly part number, and corresponding mounting specifications:

Battery Charger Line	Enclosure Type	Vdc	R3 Res. Assy p/n	Mounting Orientation / Location
AT10.1 Group I (12 Vdc & 24 Vdc, 6-25 Adc)	Style-586/594	12 24	EJ1127-00 EJ1127-01	connected to TB1+ and TB1-E17 (hanging)
AT10.1 Group I (48 Vdc & 130 Vdc, 12-25 Adc)	Style-586/594	48 130	EJ1127-02 EJ1127-03	behind I/O panel (TB1) mounted to brackets
AT10.1 Group I (130 Vdc, 6 Adc)	Style-586	130	EJ1127-23 (R3A & R3B)	behind I/O panel (TB1) mounted to brackets
AT10.1 Group II (12 Vdc & 24 Vdc)	Style-5017/5018	12/24	n/a	soldered onto Gate Driver PC Board (A11)
AT10.1 Group II (48 Vdc & 130 Vdc)	Style-5017/5018	48 130	EJ1127-12 EJ1127-13	vertically along galvanized metal back panel
AT30 (12 Vdc & 24 Vdc)	Style-5018 thru Style-198	12/24	n/a	soldered onto Gate Driver PC Board (A15)
AT30 (48 Vdc & 130 Vdc, 25-100 Adc)	Style-5018	48 130	EJ1127-12 EJ1127-13	vertically along galvanized metal back panel
AT30 (48 Vdc & 130 Vdc, 100-300 Adc)	Style-5030	48 130	EJ1127-12 EJ1127-13	vertically along right side of ckt breaker mtg bracket
AT30 (48 Vdc & 130 Vdc, 200-1000 Adc)	Style-163/198	48 130	EJ1127-12 EJ1127-13	vertically along phenolic back panel

**SAFETY****⚠ CAUTION**

*DISCONNECT ALL AC AND DC POWER SOURCES FROM THE BATTERY CHARGER BEFORE PROCEEDING. ONLY QUALIFIED SERVICE TECHNICIANS SHOULD PERFORM THIS PROCEDURE. FOLLOW THE SITE AND YOUR EMPLOYER'S STANDARD SAFETY PROCEDURES.*

**NOTICE**

*OPENING CIRCUIT BREAKERS DOES **NOT** REMOVE ALL DANGEROUS VOLTAGES FROM INSIDE THE CHARGER. AFTER AC AND DC POWER ARE REMOVED, VERIFY THAT DC FILTER CAPACITORS (C1 AND/OR C2) ARE DISCHARGED BEFORE PROCEEDING.*

**PROCEDURE (preparation)**

1. Turn OFF (open) the ac input circuit breaker (CB1), and dc output circuit breaker (CB2).
2. Allow internal voltages to dissipate.
3. Open the AT10.1/AT30 Series Battery Charger Operating & Service Instructions manual.
4. Turn to the Component Layout Drawings in Appendix C.
5. Identify the drawing that depicts your AT10.1 or AT30 Series Battery Charger enclosure.
6. Identify the location of the unit's power supply ballast resistor (R3) in the layout drawing.
7. Note: In 12 & 24 Vdc units, R3 may be soldered onto the Gate Driver PC Board (A11/A15).
8. Open the battery charger's front panel (door).
9. Remove the Plexiglas safety shield (if supplied).
10. Locate the unit's power supply ballast resistor (R3) inside the enclosure assembly.

**PROCEDURE (removal)**

11. During normal operation, the power supply ballast resistor (R3) dissipates heat.
12. Make sure the resistor (R3) has properly cooled off.
13. Check the wiring at resistor (R3) with for any internal voltages or operating current.
14. Cut the two (2) wires connected to R3 as close to the resistor leads as possible.
15. Note: In larger 12 & 24 Vdc units, R3 may be soldered onto the Gate Driver PC Board (A11/A15). If so, re-solder in place and skip to Step 21.
16. Strip off 0.25in / 6.4mm of insulation from the cut ends of the wires.
17. Unscrew the top mounting-bracket and remove the existing resistor.
18. Insert the new R3 resistor and replace the top mounting-bracket.
19. Carefully re-solder the cut wires to R3.
20. Polarity is not important. For continuity, wires should be re-soldered as removed.

**PROCEDURE (finishing)**

21. Check your work, referring to the Connection Diagrams in Appendix C of the manual.
22. Make sure all connections are tight and new wiring is correct.
23. Replace the Plexiglas safety shield (if supplied).
24. Close the battery charger's front panel (door).
25. Turn on (close) the charger's dc output circuit breaker (CB2) **first**.
26. Turn on the charger's ac input circuit breaker (CB1) **second**.
27. The AT Series Battery Charger Power Supply Ballast Resistor (R3) is now properly installed.