

FIELD INSTALLATION OF BATTERY ELIMINATOR OPTION

BACKGROUND

The AT Series Battery Eliminator dc filtering option adds additional stability to the output ripple of the battery charger per standard **NEMA PE5-1996**. This allows the unit to be used as a power supply, therefore “eliminating” the need for a battery.

REFERENCE DOCUMENTATION

- 1) AT10.1 Group II / AT30 Standard DC Filtering Field Service Instructions ([JD5020-00](#))
- 2) AT10.1 Group II *Operating and Service Instruction* manual ([JA0102-02](#))
- 3) or AT30 *Operating and Service Instruction* manual ([JA0102-03](#))
- 4) AT10.1 or AT30 Standard Drawings, featured online (<http://www.ATSeries.net/>)

MATERIALS REQUIRED

Supplied with Battery Eliminator Conversion Kit:

- 1) RP5001-## battery eliminator filter capacitor (**C2x**), quantity depends on charger rating
- 2) FF5005-0# copper bus bar (**J[C#-]**), sometimes not applicable depending on charger rating
- 3) PE0082-06 white nylon wire ties, sometimes not applicable depending on charger rating)
- 4) PE0068-00 circular mounting brackets, sometimes not applicable depending on rating)
- 5) FK5007-## new data nameplate decal (with revised battery eliminator specs)

TOOLS REQUIRED

- 1) standard hand tools
- 2) wire cutters, stripper and terminal crimping tool

PREPARATION

NOTE: Only qualified service technicians should perform this procedure. Follow all site and employer standard safety protocols.

NOTE: This procedure assumes the unit already features the standard dc filtering option, and only the battery eliminator option is being installed. If both the standard dc filtering option AND the battery eliminator option are being installed at the same time, please refer to Service Instruction ([JD5020-00](#)) first.

NOTE: In the following procedure, L1 and L2 refer to the filter inductors (chokes) mounted on the floor, mounting base, or stacked together in the charger.

PROCEDURE

1. Shut down the AT10.1 or AT30 per the unit's *Operating and Service Instructions*.
2. **WARNING:** Remove ALL ac power to the battery charger, disconnect the batteries, and remove all signal contacts. The existing filter capacitors (C1) store powerful electrical potential. Wait several minutes for this potential to bleed off.
3. Using a voltmeter, make sure all power inside the charger, at the I/O panel (TB1), and remote alarms is at zero before continuing.

4. Identify your particular AT Series battery charger enclosure style, and refer to the appropriate internal component layout drawing in Appendix C of your AT Series *Operating and Service Instructions*. Identify the location and orientation of the dc filter capacitors (C1/C2) in the standard drawings. In smaller AT Series battery charger enclosures (Style-5017, Style-5018 & Style-5030), the existing blue filter capacitor(s) (C1) are situated on a U-shaped circuit breaker mounting bracket, fastened with plastic cable ties. In other enclosures (Style-163 & Style-198), the C1 caps are held in circular aluminum mounting clamps, fastened to the back phenolic mounting panel.
5. Refer to the optional schematic and wiring diagrams in Appendix C of the AT Series operating manual, or download larger versions online (<http://www.ATSeries.net/>). In the “DC Filtering Circuit” section of the mainframe schematic, note the references to capacitor "C2", and the polarity (+/-) of all capacitors (C1/C2).



Style-5030 Assembly

6. Identify the polarity (+/-) of your new C2 battery eliminator capacitor(s), which is marked on the top of the blue cans. Per the layout drawing for your particular enclosure style, mount and secure the new C2 capacitors(s) in the appropriate areas, next to the existing standard dc filtering capacitors (C1x). Make sure the positive (+) and negative (-) terminals of the new C2 capacitors line up with the corresponding (+/-) terminals of the existing capacitors (C1).
7. If more than one (1) battery eliminator capacitor (C2) is supplied, use the supplied copper bus bars to jumper the positive (+) terminals of C2. **DO NOT** jumper the positive (+) terminal(s) of the new C2 caps to the positive (+) terminal(s) of the existing C1 caps.
8. However, **DO** jumper the negative (-) terminal(s) of the new C2 caps to the most convenient negative (-) terminal of the existing C1 caps. See drawings ([JE5034-99](#) or [JE5093-99](#)).
9. Connect wire #23 on the positive (+) terminal of C2 to the dc output breaker (CB2) at the same location as wire #14. Refer to standard drawings ([JE5034-99](#) or [JE5093-99](#)).
10. Check all wiring to ensure it is correct, and that all connections are tight. Check to ensure that all (C1 and C2) filter capacitors are connected with the **correct polarity**.
11. Remove the original charger data nameplate, and replace it with the new decal supplied with the conversion kit. This identifies the unit properly as a filtered battery eliminator charger.
12. Reconnect the battery, loads, and ac power. Re-energize the charger by opening the dc breaker (CB2) first, followed by the ac breaker (CB1) second.
13. Check the float and equalize settings for proper charge voltages. Your AT10.1 Group II or AT30 Series battery charger has now been field-retrofitted with the battery eliminator dc filtering option per **NEMA PE5-1996** standards.