

## INSTALLING THE HIGH/LOW AC VOLTAGE ALARM OPTION (EJ0155-XX)

**Materials  
 Required**

HLAC Alarm Option kit (see Parts List below)

**Tools  
 Required**

Standard hand tools  
 Wire crimpers, cutters and stripper  
 Digital voltmeter with ac and dc voltage ranges  
 Variable autotransformer (if field calibration is required)

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

**Installation**

1. Check the contents of the HLAC Alarm Option kit against the parts list below.
2. The HLAC option uses two circuit board assemblies. Install the larger, GK0045-01, in the two plastic guide brackets. The smaller board is installed using the small right-angle steel brackets.  
  
 In wall-mounted chargers, and small floor-mounted chargers, install the boards on the mounting chassis. In large floor-mounted chargers, install the boards on the options mounting panel on the sidewall of the charger. There are pre-drilled mounting holes in most chargers. Be sure to allow sufficient space on both sides of the boards for the connectors.
3. Install the indicator lights on the front panel in the two holes below the AC ON indicator. On the rear (inside) of the front panel, label the left indicator "DS17" and the right indicator (nearest the edge of the door) "DS18." On the front (outside) of the front panel, label the left indicator (nearest the door edge) "High AC Voltage" and the right indicator "Low AC Voltage."
4. Install the power resistor, R78, on the mounting panel, keeping it far enough away from other components and wiring for proper cooling.
5. Refer to the wiring diagram, EJ0155. Wire the connector SO11A, the PC Board A11B, and the other components as shown in the diagram. You don't need to follow the wire colors shown in the diagram. If you have wire numbering labels, number the wires.

| Description      | Symbol | Factory Part Number |           |           |           |           |
|------------------|--------|---------------------|-----------|-----------|-----------|-----------|
|                  |        | 12                  | 24        | 48        | 130       | 260       |
| Output Voltage   | Vdc    | 12                  | 24        | 48        | 130       | 260       |
| Option P/N       | —      | EJ0155-01           | EJ0155-02 | EJ0155-05 | EJ0155-06 | EJ0155-07 |
| PC Board         | A11A   | GK0045-01 - 12V     |           |           |           |           |
| PC Board         | A11B   | EN0003-00           |           |           |           |           |
| Indicator        | DS17   | RA0001-00           | RA0001-01 | RA0001-01 | RA0001-01 | RA0001-06 |
| Indicator        | DS18   | RA0001-06           |           |           |           |           |
| Ballast Resistor | R78    | Not used            | RJ0028-36 | RJ0015-33 | RJ0022-04 | RJ0022-05 |
| Lamp Ballast     | R87    | Not used            | Not used  | RJ0028-24 | RJ0027-42 | RJ0008-13 |

**Calibrating the High/Low AC Voltage Alarm Option (HLAC)**

The High/Low AC Voltage Alarm was calibrated at the factory to operate in all normal installations. If field adjustment is required, follow the steps below.

**NOTE: This step must be done first.**

Turn off the ac supply to the battery charger. Disconnect the wires from A11B terminals E1 and E2. Connect the output of a 0 - 150 Vac variable autotransformer (Variac<sup>®</sup> or equivalent) to terminals E1 and E2, and adjust the autotransformer to 120 Vac. Connect a dc voltmeter to terminals E3 and E4 of A11B.

Adjust potentiometer R3 on A11B to obtain a reading of 13.0 Volts dc at terminals E3 and E4.

**Adjusting  
 Circuit Board  
 A11B**

**Adjusting the  
 Low AC  
 Voltage Setting**

Adjust R3 on circuit board A11B as described above. Turn on the ac supply to the battery charger, and adjust the output voltage to the normal float voltage. Adjust the autotransformer to the desired low ac voltage alarm point (usually about 85% of nominal ac voltage).

**NOTE: If your main ac input voltage is not 120 Vac, you must scale the desired low alarm voltage to 120 Vac to determine the proper autotransformer voltage.**

Adjust the "LO" adjustment potentiometer, R18, on A11A clockwise until the alarm relay transfers (measure the contacts with an ohmmeter at TB3). If the relay is already closed, turn R18 counter-clockwise until the relay opens. Make the adjustment slowly, since there is a time delay built into the alarm circuit.

**Adjusting the  
 High AC  
 Voltage Setting**

Adjust R3 on circuit board A11B as described above. Turn on the ac supply to the battery charger, and adjust the output voltage to the normal float voltage. Adjust the autotransformer to the desired high ac voltage alarm point (usually about 115% of nominal ac voltage).

**NOTE: If your main ac input voltage is not 120 Vac, you must scale the desired high alarm voltage to 120 Vac to determine the proper autotransformer voltage.**

Adjust the "HI" adjustment potentiometer, R4, on A11A counter-clockwise until the alarm relay transfers (measure the contacts with an ohmmeter at TB3). If the relay is already closed, turn R4 clockwise until the relay opens. Make the adjustment slowly, since there is a time delay built into the alarm circuit.

**When you are finished adjusting the low and high ac Voltage settings, turn off the ac supply to the charger, and disconnect the variable autotransformer. Reconnect the wiring to A11B terminals E1 and E2. Turn on the ac supply to the charger.**