

REPLACING THE CONTROL MODULE

Scope

All SCR/SCRF Battery Chargers:

Single phase input, using the GK0058-XX Control Module

Three phase input, using the GK0048-XX control Module

References

See the Operating & Service Instructions:

Section III.2.g discusses testing the Control Module

Section IV.2 describes how to adjust current limit

Note

Replacement control PC Boards (control modules) are supplied by the factory with the current limit setting adjusted to the minimum value. After you install a new control module, you must adjust the current limit and the float and equalize voltages as described in this procedure.

If you are replacing a GK0048-XX module, please see the “Special Note for GK0048-XX” at the end of this document before proceeding.

Before Starting

Turn off and lock out all external ac and dc power sources to the battery charger. This includes the ac power supply, the battery, and any remote alarm systems connected to internal terminal blocks (for example, TB3, TB7, TB15, TB24).

Find the control module (labeled “A1”) in the charger. In most enclosure styles, the control module is inserted into PC Board guides mounted on the back wall or rear mounting panel of the charger. Open the front door to get access to the control module. In the style 3 enclosure, the control module is located on the pull-out shelf at the top of the charger.

Removing and Replacing the Control Module

- Note the orientation of the control module in the PC Board guides. Remove the harness connector from the control module by compressing the locks on the ends of the plug and pulling the plug away from the board. Remove the control module from the guides.
- Hold the new control module in the same orientation, and plug the harness connector onto the board, making sure that it is firmly seated on the board. Slide the new control module into the board guides.
- Restore ac and dc power to the charger (see section II.4 of the Operating & Service Instructions).

CAUTION: Remember that there are high voltages in internal parts, and on the terminals of the circuit breakers, meters and other front panel components. Use extreme care when working inside the charger.

To restore normal operation of the battery charger, you must set the current limit and the float and equalize voltages. The procedure for this is described below, and also in Section III of the Operating and Service Instructions.

SCR/SCRF SERIES BATTERY CHARGER SERVICE PROCEDURE

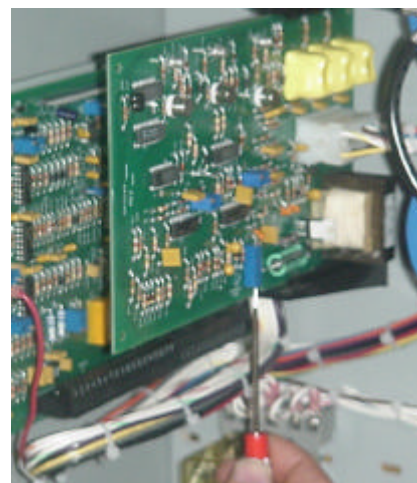
JD0053-00

Do you have temperature compensation?

If your charger is equipped with an optional temperature compensation probe, you must temporarily disable the temperature compensation. Replace the temperature probe with the original feedback resistor, R2, until the adjustments described below are completed. R2 is normally mounted on a terminal block on the back of the front panel or door. If you do not have an R2 resistor, please contact your sales representative for assistance.

Adjusting Charger Operation

- Be sure the charger is in the Float mode. Turn off the Equalize timer, if present, and/or set the Float/Equalize switch to Float.
- Using the figures here as a guide, find the current limit potentiometer. Make sure that the potentiometer is turned fully clockwise. This sets current limit to the minimum value. You will restart the charger with the lowest current limit setting to avoid clearing circuit breakers or fuses.



- If the charger isn't already delivering output current (as shown on the dc ammeter, M2), adjust the Float potentiometer on the front panel slowly clockwise until the ammeter indicates output current. Turn the potentiometer another 1/8 to 1/4 turn clockwise. The output current will be low because the current limit potentiometer is set to its minimum value.
- Now set the charger to the Equalize mode.
- Open the front door (or pull out the drawer) and adjust the current limit potentiometer slowly counterclockwise until the output current is 110% of the charger output current rating. You may optionally adjust the current limit to any value between 80% and 120%.

NOTE: At very low current limits (less than 80%), the charger may appear to be unstable. The charger should be stable at any current limit value above 80%

CAUTION: Do not set the current limit above 120%. Damage to internal components may result.

- Close the front door (or the drawer).
- Return the charger to the Float mode. Allow the battery to charge until the output current is below 50% of the charger rating. Adjust the Float potentiometer on the front panel to the desired float voltage.
Consult the battery manufacturer for recommended float and equalize voltage settings.
- Set the charger to the Equalize mode. When the output current decreases to below 50% of the charger rating, adjust the Equalize potentiometer on the front panel to the desired equalize voltage. When you are satisfied that the Float and Equalize potentiometers are adjusted correctly, you may lock the settings with the locknuts.
- If you previously disabled temperature compensation, turn off the charger and reconnect the temperature probe, then restart the charger. Be sure to save R2 for any future needs.

Special Note for GK0048-XX

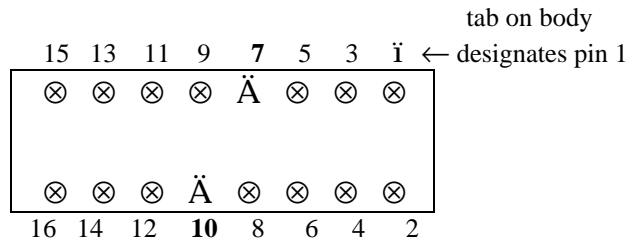
If you are replacing a GK0048-XX control module, used in all 3 phase SCR/SCRF chargers, please examine the old control module before proceeding with the replacement.

The new control module that you received is fully compatible with all older control modules revision 7 or higher, with the following part numbers:

- GK0048-01
- GK0048-02
- GK0048-82

If the module that you are replacing is marked “Rev. 7” or higher, then proceed with the repair. If it is marked with “Rev. A”, “Rev. C,” or a revision number lower than 7, or has no revision mark at all, then you must make the following modifications before proceeding. This situation occurs in a small number of battery chargers manufactured before 1984.

- Inspect the connector for the control module, as shown in the figure below. If the connector has wires to pins 7 and 10, cut these wires off at the connector body, loop them back about an inch, and insulate them (these wires carry 120Vac). The new control module will now function correctly in your charger.
- **CAUTION:** Installing and energizing a new control module without checking for the conditions noted above may result in permanent damage to the new control module.



Note: The information on this page was formerly supplied as Service Bulletin JD0060.