Application Brief
- Charge Current Limiting for a Remote Battery Using the CL-Series BatteryLink™ ACR

Powering a bow thruster or windlass from the main battery banks requires running large wires through the entire length of the boat since cable size is a function of the length of run and the amount of current the cable must carry. An option is to install an auxiliary battery forward close to the windlass or bow thruster. The cost savings on the cables alone could likely be more than the cost of the additional battery. Also, having an auxiliary battery enables you to reduce the size of the main battery bank, and operate the windlass or bow thruster with a relatively small battery bank.

This auxiliary battery needs to be charged, and wires must be run from the charging source to it. In the event that the forward auxiliary battery cannot maintain full voltage under load, the load current will be partially drawn from the main batteries through the charging cables. The cables from the charging source to the forward auxiliary battery must be sized to handle the load. These high amperages require large cables from the charging source through the entire length of the boat even with the auxiliary battery added forward.

The current limiting function of the CL-Series BatteryLink™ ACR (PN 7600) can be used to limit this current from main battery to auxiliary battery. It limits the current to 60A in a 25°C ambient temperature environment. If the current exceeds 60A, the resistance in the BatteryLink™ ACR's current limiting circuit increases to limit the current. Therefore, the cables that carry the charging current need be no larger than #6 or #4 Gauge AWG.

When using the BatteryLink™ ACR to limit charging current to the auxiliary battery:

1. Place the BatteryLink™ ACR near the main battery (house or start) to be used as the charging source for the auxiliary battery.
2. Connect the Main battery positive to BatteryLink™ ACR Terminal A.
3. Connect the bow end of the positive charging wire to the Auxiliary battery through a 120-150A circuit breaker to protect the wire against current flowing backwards during a fault.
4. Connect a small jumper wire from Terminal 1 of the BatteryLink™ ACR to Terminal B to let the BatteryLink™ ACR sense a faulty low voltage on the auxiliary battery.
5. Connect Terminal 3 to the negative side of the Main battery or the boat's negative bus.
6. To provide a manual override or to connect a remote LED, refer to BatteryLink™ ACR instructions.