**PN 7610 SI-Series Heavy Duty Automatic Charging Relay (ACR) Diagnostic Flowcharts**

**SYMPTOM** The ACR will not combine batteries. The batteries are isolated and the green LED is OFF or blinking.

**SYMPTOM** The ACR will not isolate batteries. The batteries are combined and the green LED is ON.

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**Question Action**

**LEGEND**

- Question
- Action
- ACR is functioning correctly
- ACR is not functioning correctly

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**SYMPTOM** The ACR will not combine batteries. The batteries are isolated and the green LED is OFF or blinking.

**START HERE**

- Is the ACR ground wire connected to a common ground or directly to the battery negative terminal?
  - NO: CONNECT GROUND WIRE AS DESCRIBED. Verify continuity to a known good ground.
  - YES: Is the voltage at either terminal above 13.6V for 30 seconds or above 13.0V for 2 minutes?
    - NO: ACR IS FUNCTIONING CORRECTLY. Neither input has reached charging voltage.
    - YES: Is one battery voltage 10.8V or less?
      - NO: START HERE
      - YES: Is one ACR Primary terminal voltage above 16.0V?
        - NO: Is the Start Isolation (SI) feature enabled?
          - NO: RETURN TO START OF DIAGNOSTIC FLOWCHART.
          - YES: ACR IS NOT FUNCTIONING CORRECTLY. Contact Blue Sea Systems.
        - YES: ACR IS FUNCTIONING CORRECTLY AND IS IN OVERVOLTAGE LOCKOUT.
          - NO: IS SI line connected to a constant 12V point? i.e. key Accessory position instead of key Start position.
            - NO: CONNECT GROUND WIRE AS DESCRIBED. Verify continuity to a known good ground.
            - YES: DISCONNECT SI LINE or reconnect to a point that only has 12V when starter is engaged and cranking.
          - YES: ACR IS NOT FUNCTIONING CORRECTLY. Contact Blue Sea Systems.
          - YES: ACR IS FUNCTIONING CORRECTLY. You are finished.

**SYMPTOM** The ACR will not isolate batteries. The batteries are combined and the green LED is ON.

**START HERE**

- Is the ACR combining the batteries?
  - NO: ACR IS NOT FUNCTIONING CORRECTLY. Contact Blue Sea Systems.
  - YES: Does the battery recover over 11V?
    - NO: RETURN TO START OF DIAGNOSTIC FLOWCHART.
    - YES: Is one ACR Primary terminal voltage above 16.0V?
      - NO: Is the voltage at either terminal above 13.6V for 30 seconds or above 13.0V for 2 minutes?
        - NO: ACR IS NOT FUNCTIONING CORRECTLY. Contact Blue Sea Systems.
        - YES: **ACR IS FUNCTIONING CORRECTLY.** Batteries are paralleled.

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**Contact Blue Sea Systems.**

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