SI-ACR Automatic Charging Relay with Start Isolation

- Automatically combines batteries during charging, isolates batteries when discharging and when starting engines
- Supports high-output alternators up to 120 Amps
- Ignition protected—safe for installation aboard gasoline powered boats
- LED light is ON when batteries are combined, and OFF when batteries are isolated
- Allows temporary isolation of house loads from engine circuit during engine cranking to protect sensitive electronics—start isolation indicated by a double flashing LED
- Under voltage lockout—will not close when the lower battery is below 9.5V @ 12V System or 10V @ 24V System—lockout indicated by a triple flashing LED
- For 12 or 24 DC systems
- Dual Sensing—senses charge source on either battery bank

Specs and Specifications

Continuous Rating 120A
Intermittent Rating (5 min.) 210A
Operating Current (combine) 175mA
Operating Current (open) 15mA
Terminal Stud Size 3/8"-16 (M10)
Terminal Stud Torque 140 in-lbs (15.8 Nm)

Relay Contact Position
- 12V DC: Combine (30 sec.) 13.6V DC 27.2V DC
- Open Low (10 sec.) 12.35V DC 24.7V DC
- Open High (30 sec.) 12.75V DC 25.5V DC
- Over Voltage Lockout 16.0V DC
- Under Voltage Lockout 9.5V DC
- Under Voltage Reset 10.0V DC

Regulatory
- CE marked for ignition protection, meets ISO 8846, UL 1500, and SAE J1171 external ignition protection requirements
- Rated IP67—temporary immersion for 30 minutes

E-Series, Dual Circuit Plus™ Battery Switch Installation:

- Mount the battery switch in an easily accessible location close to the batteries.
- Attach one 4/0 AWG cable per terminal to meet ratings.
- Terminals must be attached under nut and lock washer. Torque to 140 in-lb (15.82 N-m)

E-Series, Dual Circuit Plus™ Battery Switch

- Switches two battery banks simultaneously with one simple ON/OFF switch while maintaining battery bank isolation, minimizing the risk of a dead start battery
- The COMBINE BATTERIES function parallels two battery banks in the event of a low battery

Specs and Specifications

Cranking Rating (30 sec.) 700 Amps*
Intermittent Rating (5 min.) 525 Amps*
Continuous Rating 350 Amps*
Maximum Voltage 32 Volts
Cable Size to Meet Ratings 4/0 AWG (120mm²)†
Terminal Stud Size 3/8"-16 (M10)
Maximum Torque 140 in-lbs (15.82Nm)

Regulatory
- CE marked for ignition protection, meets UL1500 and SAE J1171 external ignition protection requirements
- Rated IP66—protected against powerful water jets

† Reducing cable size will reduce current ratings
* Per Circuit
**Installation Diagram**

**Engines With Combined Alternator and Starter Wires**
- typical of outboard motors

**Engines With Separate Alternator and Starter Wires**
- typical of inboard engines

**Alternator Wiring may Include the Following:**
1. to Starter
2. to Engine terminal of battery switch
3. to Start Battery
4. to House Battery

Alternator connected to a larger battery bank is most efficient.

This diagram is for reference only. Alternator wiring configuration does not affect ACR installation.

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**Wire Size and Fuse Ratings**

<table>
<thead>
<tr>
<th>Charging Amps</th>
<th>Minimum Wire Size*</th>
<th>Fuse Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤60</td>
<td>#6</td>
<td>75-90A</td>
</tr>
<tr>
<td>≤80</td>
<td>#4</td>
<td>100-125A</td>
</tr>
<tr>
<td>≤100</td>
<td>#2</td>
<td>150A</td>
</tr>
<tr>
<td>≤110</td>
<td>#1</td>
<td>150-175A</td>
</tr>
</tbody>
</table>

* Larger wire sizes may be required to minimize voltage drop in long wire runs.

For more information, please visit the Circuit Wizard at circuitwizard.bluesea.com

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**Dimensioned Drawings**