Getting Started

Automatic Battery Charger/Power Supply

PATENTED US 9,270,140; 9,385,556; 9,413,186; 9,509,164; 9,466,995; 9,948,125; 10,575,433

Overview and Connections

CONNECT RS-485 MODBUS OR CAN NETWORK CABLE TO RJ-45 CONNECTORS (see user manual for connector pinout, RJ-45 to terminal block adapter p/n 208026 available from SENS)

CONNECT ETHERNET NETWORK CABLE TO RJ-45 CONNECTOR

CONNECT GROUND WIRE

CONNECT SENSBUS NETWORK CABLE TO RJ-45 CONNECTOR

CONNECT AC WIRES AT AC BREAKER
3-PHASE, 3 WIRE, 358-528 VAC, 50/60HZ

CONNECT DC WIRES AT DC BREAKER
See inside cover label for factory output configuration.

KEYPAD / LCD DISPLAY

REMOVE PLUGGABLE ALARM TERMINAL BLOCK TO INSTALL ALARM WIRES See inside cover label for factory alarm assignments.

CONNECT PILOT RELAY WIRES AT PLUGGABLE TERMINAL BLOCK Optional feature. See inside cover label for factory alarm assignments.

AC INPUT CIRCUIT BREAKER 30A FOR ALL MODELS

DC OUTPUT CIRCUIT BREAKER 150A FOR 120VDC MODELS 70A FOR 240VDC MODELS

SUPPLEMENTARY AC/DC SURGE PROTECTORS Optional feature

*See user manual for details regarding CAN and Modbus configuration

Mounting

MOUNTING HOLES ARE INTENDED FOR 3/8 IN (M10) HARDWARE.
MOUNTING HARDWARE TO BE PROVIDED BY INSTALLER.
SEE INSTALLATION DRAWING IN MANUAL FOR MORE DETAILS.

Mounting

ADEQUATE AIR FLOW
4" (102 mm)

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1. SAVE THESE INSTRUCTIONS

2. Do not expose charger to rain or snow.

3. Use of an attachment not recommended or sold by the battery charger manufacturer may result in a risk of fire, electric shock, or injury to persons.

4. This charger is intended for commercial and industrial use. ONLY TRAINED AND QUALIFIED PERSONNEL MAY INSTALL AND SERVICE THIS UNIT.

5. Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; shut off power at the branch circuit protectors and have the unit serviced or replaced by qualified personnel.

6. To reduce risk of electric shock, disconnect branch circuit feeding charger before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.

7. Use appropriate lockout / tagout procedures to ensure safety of all personnel installing and servicing this equipment. The input and output breakers are equipped with provision to lock breakers in the OFF position.

8. WARNING – RISK OF EXPLOSIVE GASES

8.1 Working in vicinity of a lead-acid or nickel-cadmium battery is dangerous. Storage batteries generate explosive gases during normal battery operation. For this reason, it is of utmost importance that you read this document and follow the instructions each time you use the charger.

8.2 To reduce the risk of battery explosion, follow these instructions and those published by battery manufacturer and manufacturer of any equipment you intend to use in vicinity of storage batteries. Always follow the manufacturer's recharging instructions. Do not overfill. For a battery without removable cell caps, such as valve regulated lead acid batteries, carefully follow manufacturer's recharging instructions. When charging batteries, charge LEAD-ACID or LIQUID ELECTROLYTE NICKEL-CADMIUM batteries only. Consult SENS before using with any other type of battery. Other batteries may burst and cause injuries to persons and damage to property.

9. PERSONAL PRECAUTIONS

9.1 Someone should be within range of your voice or close enough to come to your aid when you work near a storage battery.

9.2 Have plenty of fresh water and soap nearby in case battery electrolyte contacts skin, clothing, or eyes.

9.3 Wear complete eye protection and clothing protection. Avoid touching eyes while working near a storage battery.

9.4 If battery electrolyte contacts skin or clothing, wash immediately with soap and water. If electrolyte enters eye, immediately flood the eye with running cold water for at least 10 minutes and get medical attention immediately.

9.5 NEVER smoke or allow a spark or flame in vicinity of battery or engine.

9.6 Be extra cautious to reduce risk of dropping a metal tool onto battery. It might spark or short circuit battery or other electrical part that may cause explosion. Using insulated tools reduces this risk, but will not eliminate it.

9.7 Remove personal metal items such as rings, bracelets, necklaces, and watches when working with a storage battery. A storage battery can produce a short circuit current high enough to weld a ring or the like to metal, causing a severe burn.

9.8 When changing batteries, charge LEAD-ACID or LIQUID ELECTROLYTE NICKEL-CADMIUM batteries only. Consult SENS before using with any other type of battery. Other batteries may burst and cause injuries to persons and damage to property.

9.9 NEVER charge a frozen battery.

9.10 Consult national and local ordinances to determine if additional battery fault protection is necessary in your installation.

10. PREPARING BATTERY FOR CHARGE

10.1 Be sure area around battery is well ventilated while battery is being charged.

10.2 Ensure battery terminals are clean and properly tightened. Be careful to keep corrosion from coming in contact with eyes.

10.3 Add distilled water in each cell until battery acid reaches level specified by battery manufacturer. Do not overfill. For a battery without removable cell caps, such as valve regulated lead acid batteries, carefully follow manufacturer’s recharging instructions.

10.4 Study all battery manufacturer specific precautions such as removing or not removing cell caps while charging and recommended rate of charge.

11. CHARGER LOCATION

11.1 Locate the charger as far away from the battery or DC cables permit.

11.2 Never place charger directly above or below battery being charged; gases from battery will corrode and damage charger.

11.3 Never allow battery acid to drip on charger when reading electrolyte specific gravity or filling battery.

11.4 Do not operate charger in a closed-in area or restrict ventilation in any way.

11.5 Do not set anything on top of the charger.

Wires, Torques and Tools

<table>
<thead>
<tr>
<th>TYPE</th>
<th>WIRE RANGE</th>
<th>TORQUE</th>
<th>TOOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUND TERMINAL BLOCK</td>
<td>14-4 AWG</td>
<td>50 IN LB (5.65 Nm)</td>
<td>1/4 IN FLAT SCREWDRIVER</td>
</tr>
<tr>
<td>AC BREAKER</td>
<td>14-1/0 AWG</td>
<td>62 IN-LB (7.0 Nm)</td>
<td>M4 HEX</td>
</tr>
<tr>
<td>120V DC BREAKER</td>
<td>1 AWG - 300 KCMI</td>
<td>135 IN-LB (15.25 Nm)</td>
<td>M8 HEX</td>
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<tr>
<td>240V DC BREAKER</td>
<td>10 AWG</td>
<td>20 IN-LB (2.3 Nm)</td>
<td>M6 HEX</td>
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<tr>
<td></td>
<td>8 AWG</td>
<td>35 IN-LB (4 Nm)</td>
<td></td>
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<tr>
<td></td>
<td>6-2 AWG</td>
<td>75 IN-LB (8.5 Nm)</td>
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</tr>
<tr>
<td>STANDARD ALARMS</td>
<td>28-16 AWG</td>
<td>2.0 IN-LB (0.22 Nm)</td>
<td>1/8 IN FLAT SCREWDRIVER</td>
</tr>
<tr>
<td>AC POWER RELAYS (optional)</td>
<td>26-12 AWG</td>
<td>5.5 IN-LB (0.62 Nm)</td>
<td></td>
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</tbody>
</table>

Note - Chargers configured to boost may be in boost for up to 24 hours at start-up if battery voltage is low.

Power On - Connect battery then energize AC power

SEE APPLICATION NOTE 26 TO COMMISSION NICD BATTERIES

For information and service on any SENS product, please contact us at:
Sales 1.866.736.7872 • 303.678.7500 • www.sens-usa.com • info@sens-usa.com
Stored Energy Systems, LLC
1840 Industrial Circle, Longmont, CO 80501 USA

For EnerGenius ® DC battery chargers.

IMPORTANT SAFETY INSTRUCTIONS

* This guide contains important safety and operating instructions for EnerGenius ® DC battery chargers.

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