

DEPENDABLE POWER SYSTEMS

BATTERY CHARGER TROUBLE SHOOTING

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1.0 SYSTEM

Notes:

1. Do not replace any of the semiconductor fuses in this unit with Gould/Shawmut form 101 fuses. The Gould/Shawmut fuses do not have a comparable I^2t rating and may cause damage or fire in the unit.
 2. The charger equalize voltage should be set at no more than 140V when the inverter is running. Operation at higher voltages only increase the battery water loss with no benefit and may blow an inverter fuse.
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2.0 RECTIFIER/CHARGER FAILURES

PROBLEM: "AC ON" not illuminated.

CHECK: AC Input breaker, AC Input before breaker, Fuses FU1 & FU2 (CB3).

SOLUTIONS or EXPLANATIONS: Close breaker, power failure, and open feeder to BATTERY CHARGER. If FU1 or FU2 (CB3) is open, check SCR1-3 & D1-3, then replace fuse(s).

PROBLEM: "Rectifier/Charger Failure" illuminated.

CHECK: DC current, Fuses FU1 & FU2 (CB3), Battery voltage, Charger DC current.

SOLUTIONS or EXPLANATIONS: This indicator will light for a short time after the batteries have been discharged. If the Charger DC current is high - (Overload is on) wait. If FU1 or FU2 (CB3) are open, check SCR1-3 & D1-3, then replace the fuse(s). If the DC voltage is low and the DC current is low or zero, check Float adjustment and equalize adjustment. Replace the "Rectifier/Charger Control Board". If Auto-equalize circuit was provided, check that relay (RL1) is properly plugged into the socket.

PROBLEM: "Rectifier/Charger Failure" illuminated and there is no output.

CHECK: Fuses FU1 & FU2 (CB3), Gates to SCR1-3, Wires to pots, Wires from T1 terminals Y1 - Y3, wires to SH1.

SOLUTIONS or EXPLANATIONS: If gate signals at SCR's, look for open connection in power wires or blown FU1 and FU2 (CB3). If no gate signals on rectifier control board, check from the ground test point (TP) to +12V TP, TP5, top of D24, and bottom of R73. No +12 and wires and connections to T1 OK, replace the board. An open wire or connection on any of the checked wires will shut down the rectifier.

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PROBLEM: "Rectifier/Charger Failure" illuminated and Output is low.

CHECK: Fuses FU1 & FU2 (CB3), Gates to SCR1-3, Wires to pots, Wires to T1, terminals Y1 - Y3, Wires to SH1, Input AC voltage.

SOLUTIONS or EXPLANATIONS: If gate signals at SCR's, look for open connection in power wires or a blown fuse. On rectifier control board, check from the ground test point (TP) to +12V TP, TP5, top of D24, and bottom of R73. If +12V low, replace the board. With a low on TP5, the board thinks it is in overvoltage, re-adjust OV pot. With a low on the top of D24, the board thinks it is in overcurrent, re-adjust current limit potentiometer and check SH1 wires and connections. With a high on R73, the board thinks it has an AC line failure. If input lines are within +/- 10% and wires and connections to T1 are OK, replace the board.

PROBLEM: "Rectifier/Charger Overload" illuminates at to low a level.

CHECK: Is static switch in "Load on Bypass" or "Load on Inverter"

SOLUTIONS or EXPLANATIONS: When the static switch is in "Load on Bypass", the current limit level is reduced 50%. To adjust the current limit, the unit must be in "Load on Inverter". The input AC must be within +/- 10% and all fuses must be good. If the current and voltage remain low, remove IC18 on the rectifier board. If this allows the rectifier to go full on, then the problem is on the alarm and meter board. The second stage current limit is for application, where the bypass and rectifier are fed from the same source. This feature is not required for non-UPS or rectifier, only applications or sites that have two separate power feeds.

PROBLEM: On units with ground detectors "+ Ground Detect" or "- Ground Detect" on.

CHECK: Check for connection between Battery bus and ground.

SOLUTIONS or EXPLANATIONS: Remove path to ground. Shut Down the BATTERY CHARGER and Restart. This may reset alarm latched in due to a temporary contact.

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5.0 ADDITIONAL HELP

If the above guide has failed to correct the problem, Dependable Power Systems can supply additional trouble shooting assistance by phone. In most cases, the problem can be analyzed and the solution determined by phone with the help of the customer and a DVM. Before calling the factory please check and measure the following:

1. Battery Voltage: Check across the large DC capacitors with bus bars.
2. AC Input Voltage: With AC input closed, check and record the line to line voltage between the three legs of the on top of the AC Input breaker.
3. Record what red LED's are on and what green LED's are off on front panel.
4. Record all meter readings.
5. Check FUSES FU1 and 2.
6. With all breakers open Unplug and plug connectors to PC1, the battery charger control board.

With the above information we can isolate the problem to at least a section of the BATTERY CHARGER and can either tell what is wrong or what else needs to be checked.