

Installation Appendix: String Level Monitoring

Hardware Installation:

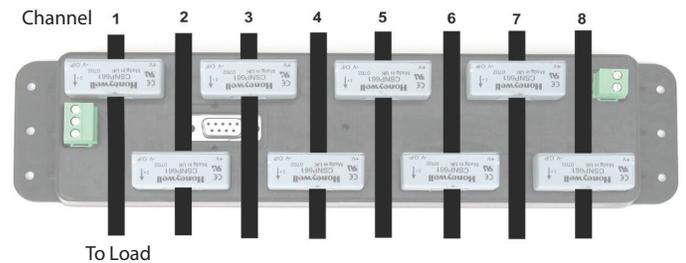
- 1 Mount the A89DC-08 inside the electrical enclosure. Be sure to provide enough room to route the load wires through the Hall effect sensor openings.
- 2 Attach the power supply to the A89DC-08. Be sure to observe the polarity. Note: Power can be disconnected by removing the screw terminal plug from A89DC-08 power connection socket.
- 3 Connect the RS485 Modbus network loop. Do not ground the RS485 shield inside the electrical panel. All RS485 and 24vdc power wires, including the shield should be insulated to prevent accidental contact to high voltage conductors.
- 4 Power-up the A89DC-08. Observe the LEDs to confirm the device is operating.

Alive (green): blinks once per second while the system is operating correctly.

RS485 RX: The RX lead should blink whenever a Modbus query is sent on the RS485 loop. When the A89DC-08 is attached to a AcquiSuite or a Modhopper device, the RX lead should blink about once per second.

- 5 Set the Modbus ID. The default Modbus address of the A89DC-08 is set to 1. The Modbus ID can be changed from within the AcquiSuite unit.
- 6 Once the A89DC-08 is powered up and communications have been confirmed, the DC load wires should be installed. Remove power from the A89DC-08 before installing the load wires.

WARNING: Disconnect power and lock out all power sources during installation. DO NOT CONNECT VOLTAGE OR CURRENT INPUTS LIVE



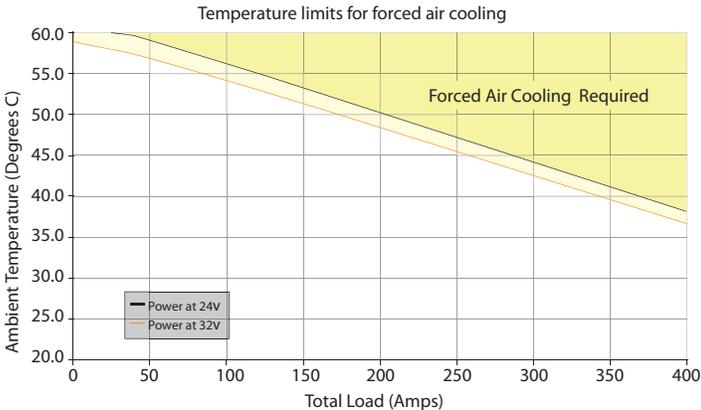
A89DC-08 Hall Effect Sensor
fig. 1

- 7 Each DC load wire should be run through the opening in the A89DC-08 Hall effect sensor. The arrow on the top of the sensor indicates the direction of current flow, and should point in the direction of the load. In a solar PV system, the arrow should point towards the inverter.

Temperature:

The A89DC-08 may generate a fair amount of heat depending on the total current load being monitored. If the A89DC-08 is to be mounted in a sealed enclosure outdoors, care should be taken to ensure the device does not overheat. The heat generated by the A89DC-08 is proportional to the total of load current being monitored. In situations where high load current is to be monitored, and the ambient air temperature will be above room temperature, forced air cooling will be required. The chart in (fig.23) shows this requirement.

When using the chart shown in (fig.23), the total current being monitored on all 8 channels should be averaged over a one minute period. The chart assumes long term current levels at a steady rate. Infrequent peaks lasting less than 30 seconds (such as inrush current) should not be used for this calculation. For example, if the power being monitored will be a maximum of 200AMPs (total of all channels) and the ambient air exceeds 50c, forced air cooling will be required.



Temperature limits graph for forced air cooling fig. 2

