Sensor Power Board

Datasheet

Description-
The Sensor Power board takes 24V from the batteries and uses DCDCs to convert it to the necessary voltage for the sensors. It reports power draw to the CPU via the Serial board, and it has the ability to shut off power flow to the sensors. It also acts as a circuit breaker for the sensors, stopping power flow to them if their current draw exceeds a specified level. The secondary functions of the Sensor Power board are to measure the local temperature and report it, and to digitize analog data from the Aft Power board to be sent to the CPU.

Specifications
- 5V outputs x 5, 12V outputs x 5, 24V output, special high-power hydrophone output
- Green LED on each port for power, red LED for unpowered
- Blue Heartbeat LED
- Power Limits:
  - 12V – 20 W
  - 5V – 10 W
  - Hydrophone 5V – 15W
  - 24V – 20W

Board Layout
1. 5V Hydrophone Power
2. 5V Power Ports
3. Aft Power Board Data Connection
4. 24V DVL Power
5. 12V Power Ports
6. Serial Board Data Connection

Important Parts
<table>
<thead>
<tr>
<th>Name</th>
<th>Function</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC15-2405SF-E</td>
<td>5V DCDC converter (hydrophones)</td>
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<tr>
<td>CC10-2412DF-E</td>
<td>24V DCDC converter</td>
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<td>CC10-2405SF-E</td>
<td>5V DCDC converter</td>
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<td>PT4143</td>
<td>12V DCDC converter</td>
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<td>ADS7960/61</td>
<td>12/16 Channel ADC</td>
<td>2 (1/1)</td>
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<tr>
<td>LT1161CN</td>
<td>FET Driver</td>
<td>3</td>
</tr>
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</table>

Pinout

Serial Connection
- My TX
- My RX
- GND
- +5V

Hydrophones
- +5V
- GND

12V & 24V
- +12V or +24V
- GND

Aft Power Connection
- Voltage Meas.
- Temp
- Current Meas.
- GND