### Revision History

- 0.1 - Initial pre-release
- 0.2 - Added reverse power monitor, local LED display
- 0.3 - Checked by DAB, JG. Flipped the +/- pins on the reverse power monitor comparator.
- 0.4 - Finalized values of various resistors and pots in feedback loops.
- 1.0 - Board rev 2. Added Digikey P/Ns for all parts, generated BOM
- 1.1 - Added Tuning Procedure, Build Variants
- 1.2 - Changed op-amp title
- 1.3 - Checked by DAB, JG. Flipped the +/- pins on the reverse power monitor comparator.
- 1.4 - Finalized values of various resistors and pots in feedback loops.
- 1.5 - Board rev 2. Added Digikey P/Ns for all parts, generated BOM
- 1.6 - Added Tuning Procedure, Build Variants

### Build Variants

- Current Sensor type
  - LT6100 - Use LT6100 sensor
  - MAX6650 - Use MAX6650 sensor
  - NL4 pin is now PIN12 (4)
  - Updated values for R2, R3

### Tuning Procedure

**RS2, RO1, RO2, RO3 are selected to ensure no-load voltage is about 20V. Depopulate D8 during this procedure.**

**Add a load** (new, with D9 in place, but R40 depopulated), adjust RS3 for a load current of 2.5A.

Replace R40, program M32 to generate a high at the PWM pin. Select a resistor for R6 such that the output current is very low (< 100mA).

Program the MCU to generate PWM A goals of various duty cycles. The output current should be inversely proportional to the duty cycle, with the min and max set above.

### Errata

**Internal MAX6650 pullupss are not strong enough for the fan speed monitoring. Added additional pullup of +4V to the supply voltage. Added similar pullup to the Peltier fan thermometer output.**

**Replace 1.5K resistor for this +2V rail to reduce noise introduced by the fans.**

**Add a load to the output of the fan power supply, to prevent overvoltage conditions from destroying the fans.**

**The Modbus A and B lines are flipped.**

**J6 now uses a Tyco MTA100 connector instead of a Phoenix miniature terminal block.**

**The current sensors should have been before the switch. Without a +48V bias, they tend to show junk readings. Current fix is in software.**
Controller

Programming Connector

Alphanumeric Display

Status Indicators

RS485 transceiver, connector, line conditioner