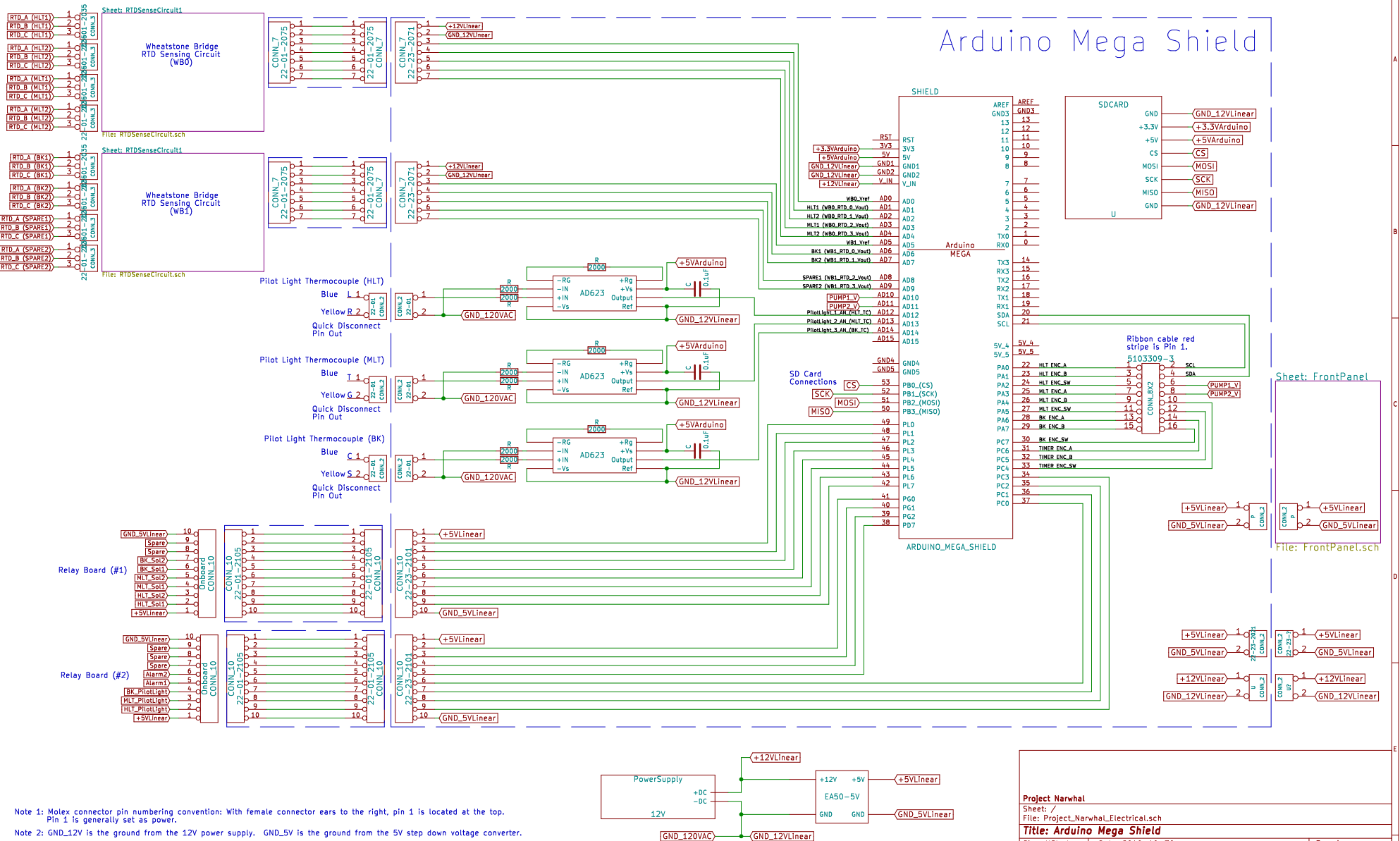
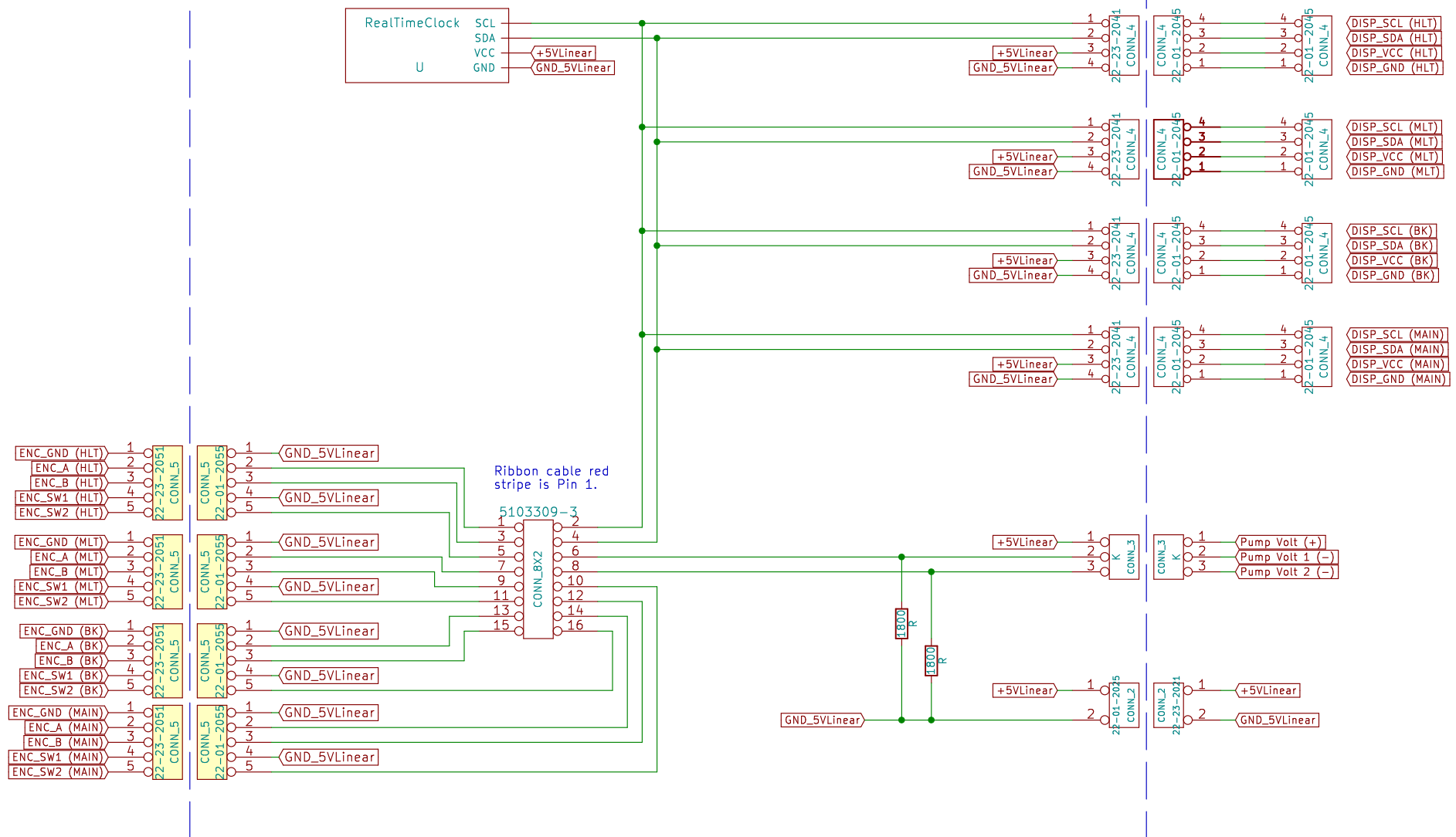


# Arduino Mega Shield



Project Narwhal  
Sheet:  
File: Project\_Narwhal\_Electrical.sch  
**Title: Arduino Mega Shield**  
Size: USLedger | Date: 2016-10-30  
KiCad E.D.A. | kicad 4.0.1-stable  
Rev: 4  
Id: 1/4

# Front Panel Connection Board



Note 1: Molex connector pin numbering convention: With female connector ears to the right, pin 1 is located at the top. Pin 1 is generally set as power.

Note 2: GND\_5V is the ground from the 5V step down voltage converter.

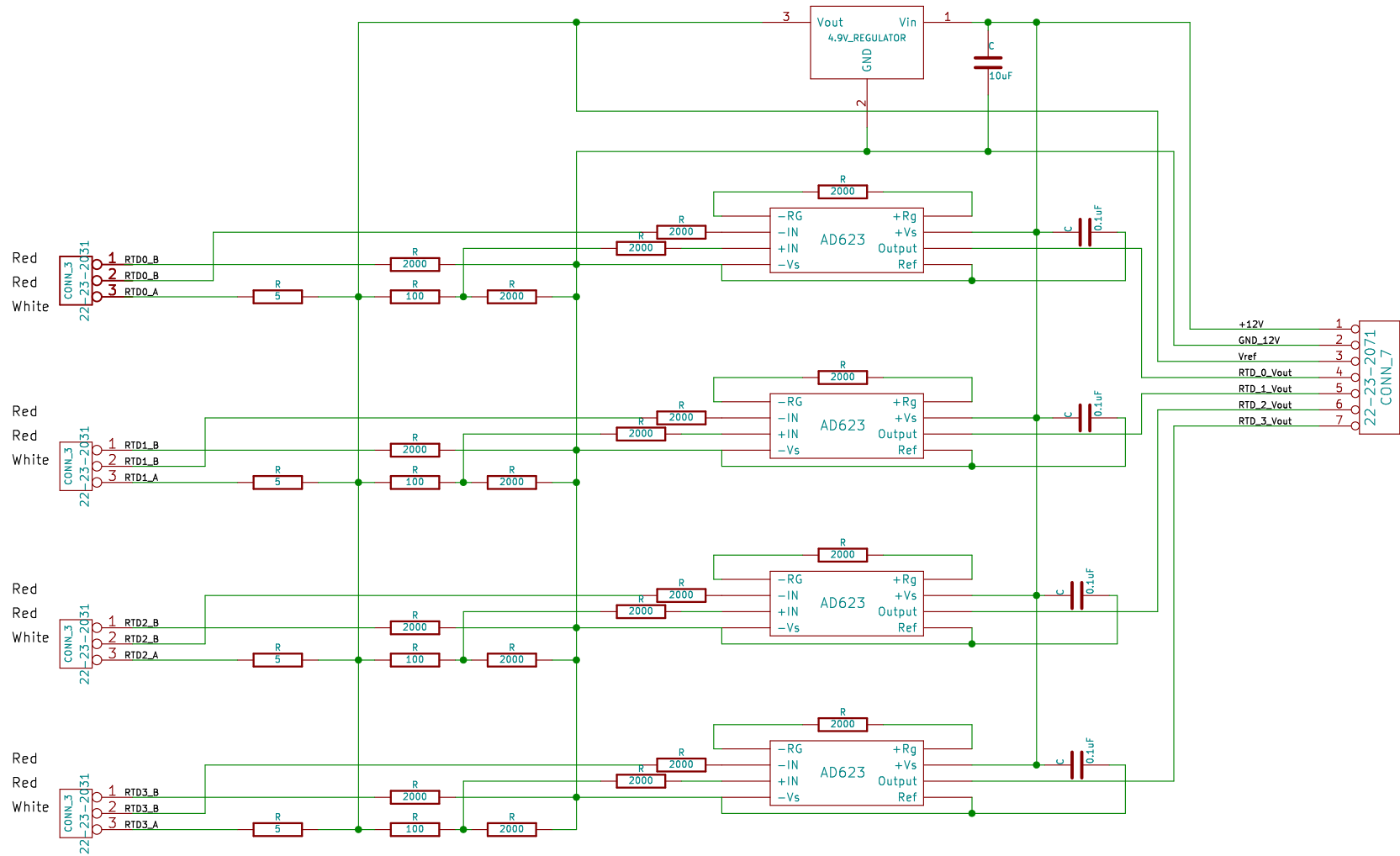
## Project Narwhal

Sheet: /FrontPanel/  
File: FrontPanel.sch

## Title: Front Panel Connection Board

Size: USLetter Date: 2016-10-30  
KiCad E.D.A. kicad 4.0.1-stable

Rev: 5  
Id: 2/4



Note 1: Molex connector pin numbering convention: With female connector ears to the right, pin 1 is located at the top. Pin 1 is generally set as power.

Note 2: GND\_12V is the ground from the 12V power supply.

Note 3: Molex #1 connector is #2 on RTD cable (white wire).

Note 4: 5 Ohm resistor added such that zero deg C equals a positive voltage allowing for calibration in the software (Arduino cannot read negative voltage)

Constant voltage 3-wire 100 Ohm RTD circuit

**Project Narwhal**

Sheet: /RTDSenseCircuit1/

File: RTDSenseCircuit.sch

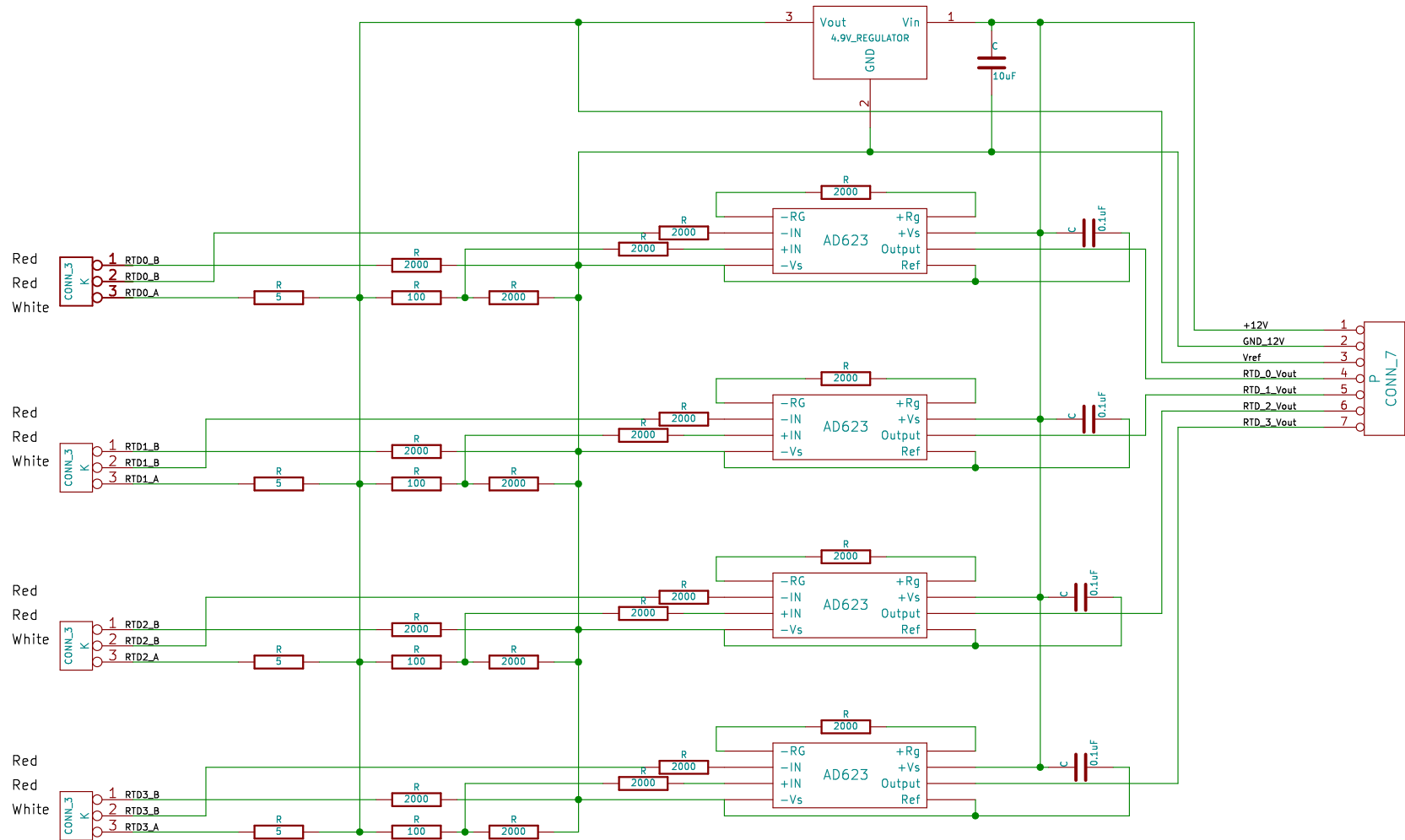
**Title: RTD Wheatstone Bridge Sensing Circuit**

Size: USLetter Date: 2016-10-30

KiCad E.D.A. kicad 4.0.1-stable

Rev: 3

Id: 3/4



Note 1: Molex connector pin numbering convention: With female connector ears to the right, pin 1 is located at the top. Pin 1 is generally set as power.

Note 2: GND\_12V is the ground from the 12V power supply.

Note 3: Molex #1 connector is #2 on RTD cable (white wire).

Note 4: 5 Ohm resistor added such that zero deg C equals a positive voltage allowing for calibration in the software (Arduino cannot read negative voltage)

Constant voltage 3-wire 100 Ohm RTD circuit

**Project Narwhal**

Sheet: /RTDSenseCircuit1/

File: RTDSenseCircuit.sch

**Title: RTD Wheatstone Bridge Sensing Circuit**

Size: USLetter Date: 2016-10-30

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Rev: 3

Id: 4/4