

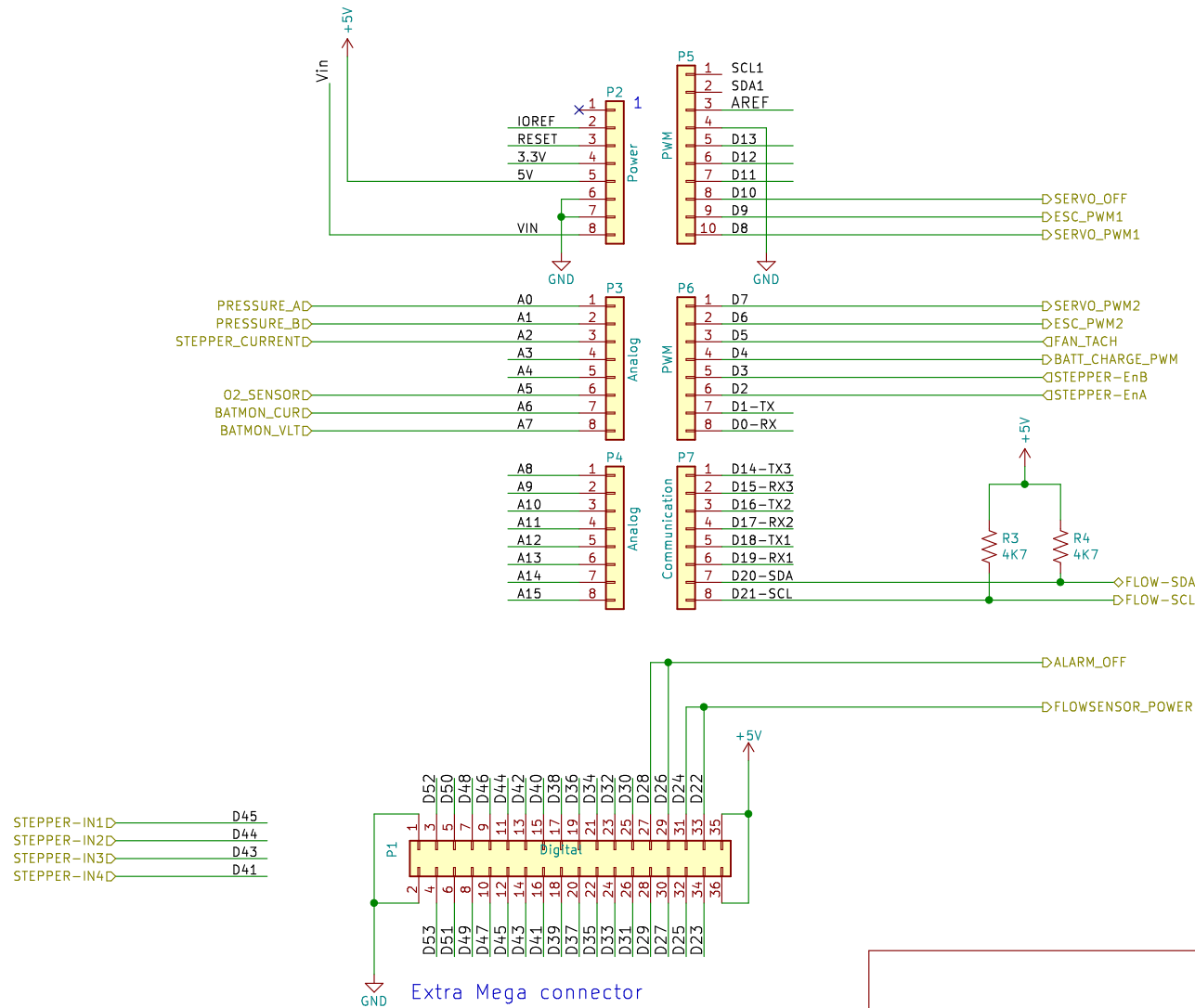
MTL Ventilator

Sheet: /
File: ventilator_shield.sch

Title: Breeze Ventilator Electronics Board

Size: A	Date: mar. 31 mars 2015	Rev:
KiCad E.D.A. kicad (5.1.5)-3		Id: 1/5

Shield for Arduino Mega Rev 3



Mounting holes
Do not delete, or else lock on PCB

P10 P11 P13

1 1 1

X X X

MTL Ventilator

Sheet: /arduino_mega/
File: arduino_mega.sch

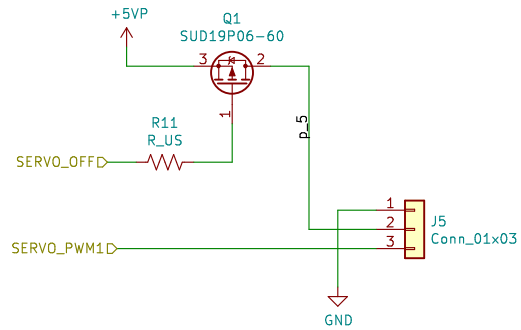
Title: Breeze Ventilator Electronics Board

Size: A
KiCad E.D.A. kicad (5.1.5)-3

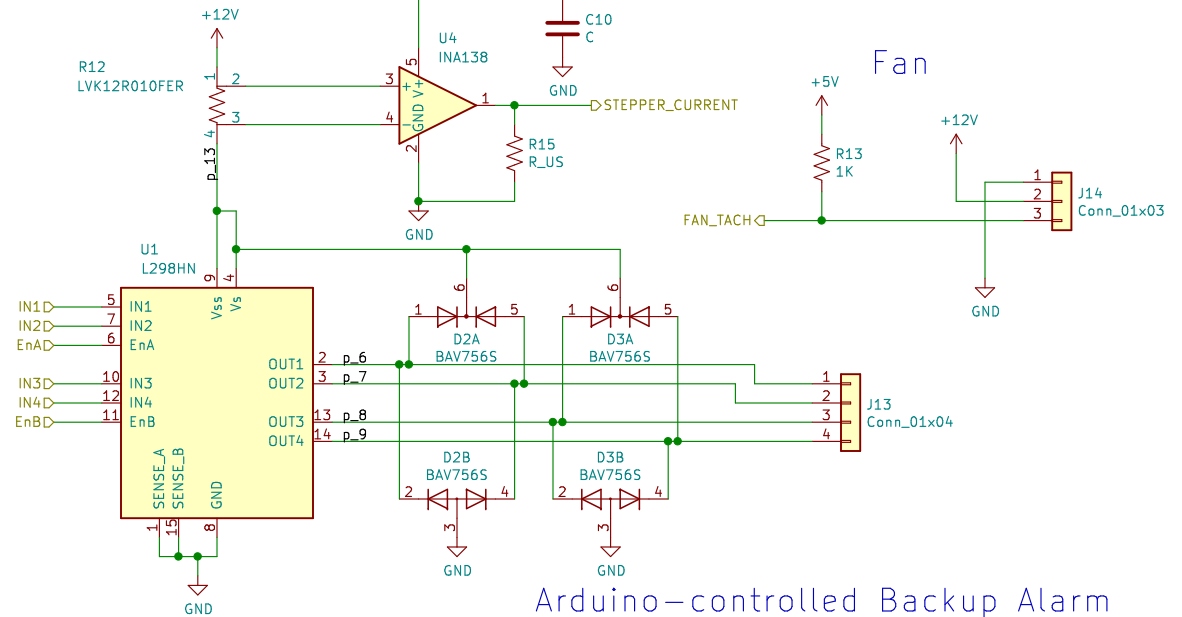
Date:

Rev:
Id: 2/5

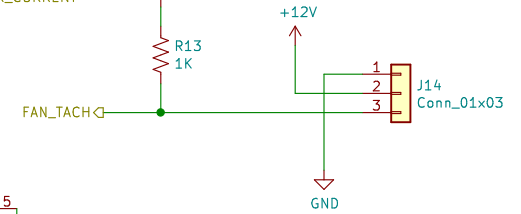
Servo Interface



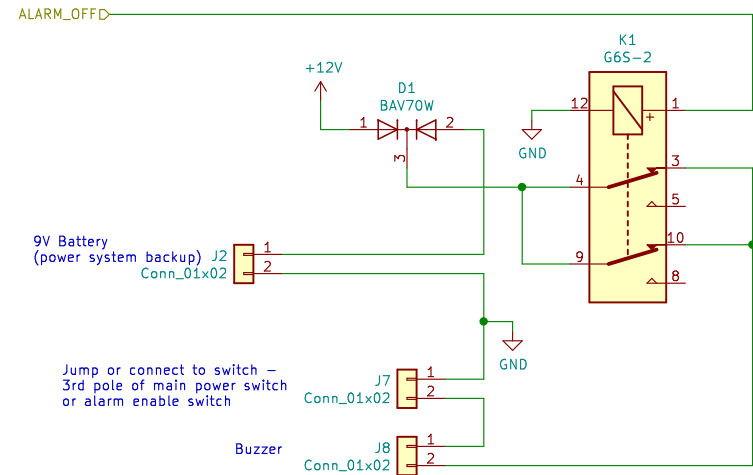
Stepper Motor



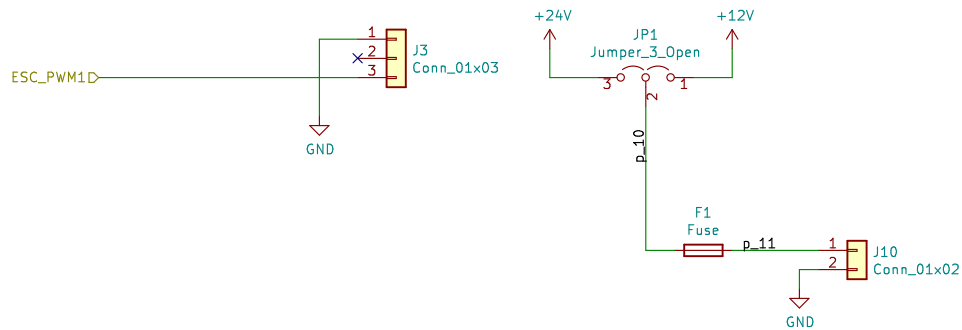
Fan



Arduino-controlled Backup Alarm



ESC (Speed Controller) Control Interface & Power



MTL Ventilator

Sheet: /Sheet5E8D3A49/
File: controls.sch

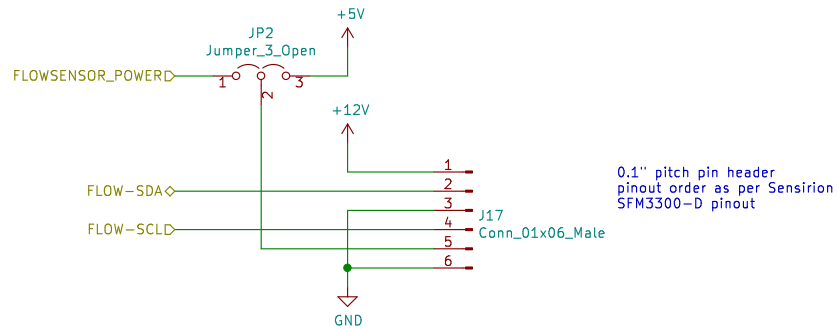
Title: Breeze Ventilator Electronics Board

Size: A Date:
KiCad E.D.A. kicad (5.1.5)-3

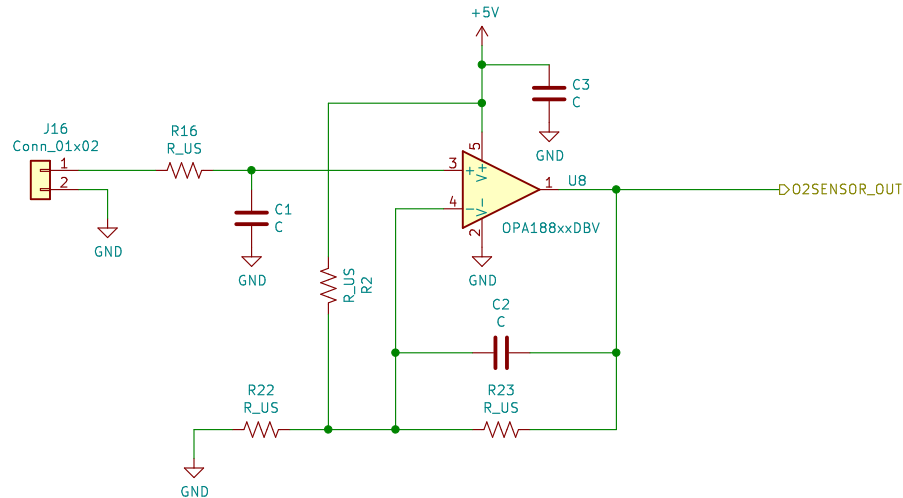
Rev:
Id: 3/5

Flow Sensor Interface

TODO: optimize pin order
(could be reversed)

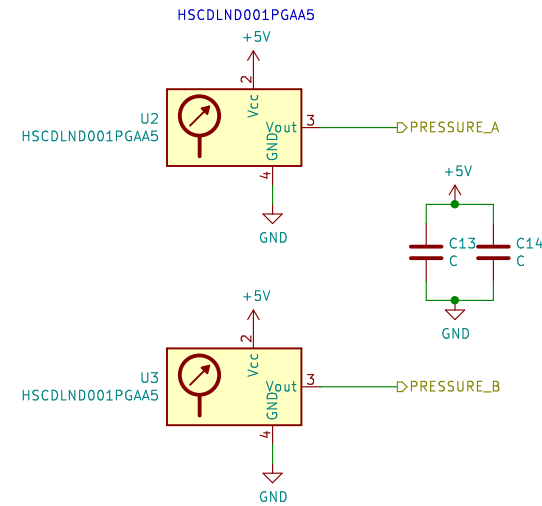


O2 Sensor Interface



TBD: O2 sensor signal range,
component values

Pressure Sensor Interface



2nd sensor space allowing

TBD
filtering on sensor power

MTL Ventilator

Sheet: /Sheet5E9ADB54/
File: sensors.sch

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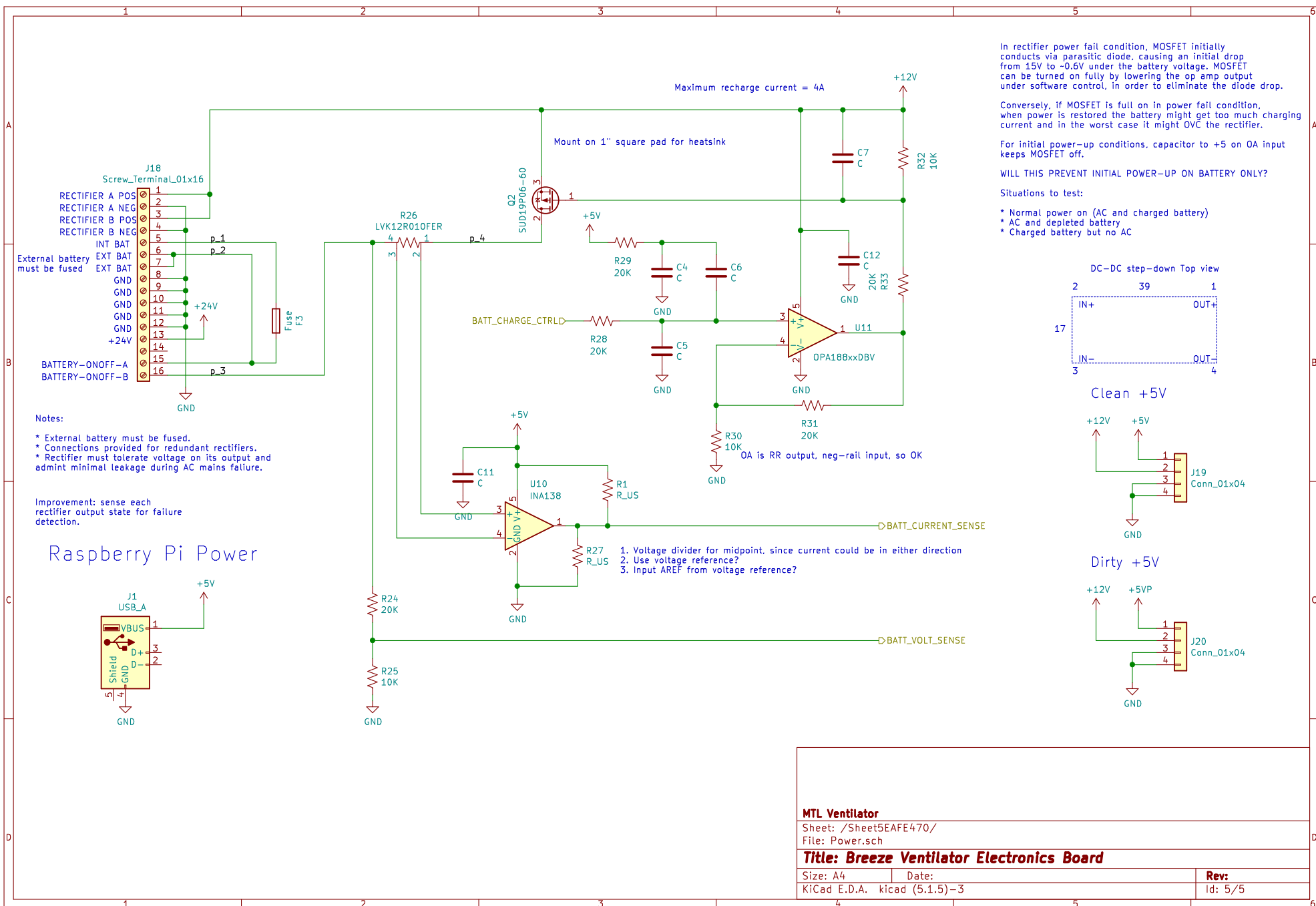
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Rev:

Id: 4/5



In rectifier power fail condition, MOSFET initially conducts via parasitic diode, causing an initial drop from 15V to -0.6V under the battery voltage. MOSFET can be turned on fully by lowering the op amp output under software control, in order to eliminate the diode drop.

Conversely, if MOSFET is full on in power fail condition, when power is restored the battery might get too much charging current and in the worst case it might OVC the rectifier.

For initial power-up conditions, capacitor to +5 on OA input keeps MOSFET off.

WILL THIS PREVENT INITIAL POWER-UP ON BATTERY ONLY?

Situations to test:

- * Normal power on (AC and charged battery)
- * AC and depleted battery
- * Charged battery but no AC

