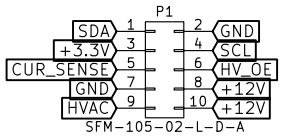
CONTROL BOARD EDGE CONNECTOR



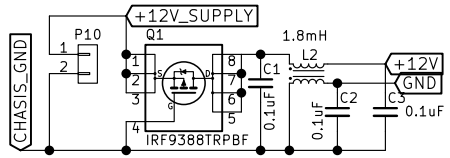
+12 V power is provided by a DC power brick. +3.3V power is obtained using a step-down (buck) regulator.

The control board generates a bipolar square wave up to 150 Vrms (frequency = 100 Hz to 10 kHz) with a boost converter that uses the +12 V source as input. It communicates with the computer over USB/serial and with the HV switching boards over i2c.

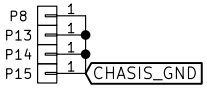
It also measures the return current from the device (CUR_SENSE).

POWER IN

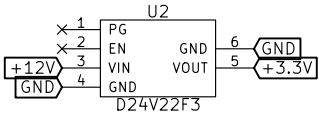
+12V input with reverse polarity protection and EMI filter.

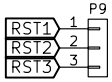


MOUNTING HOLES



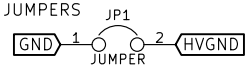
3.3V POWER REGULATOR



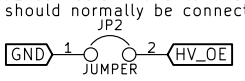


Reset lines for the switching boards can be used for firmware flashing.

JUMPERS



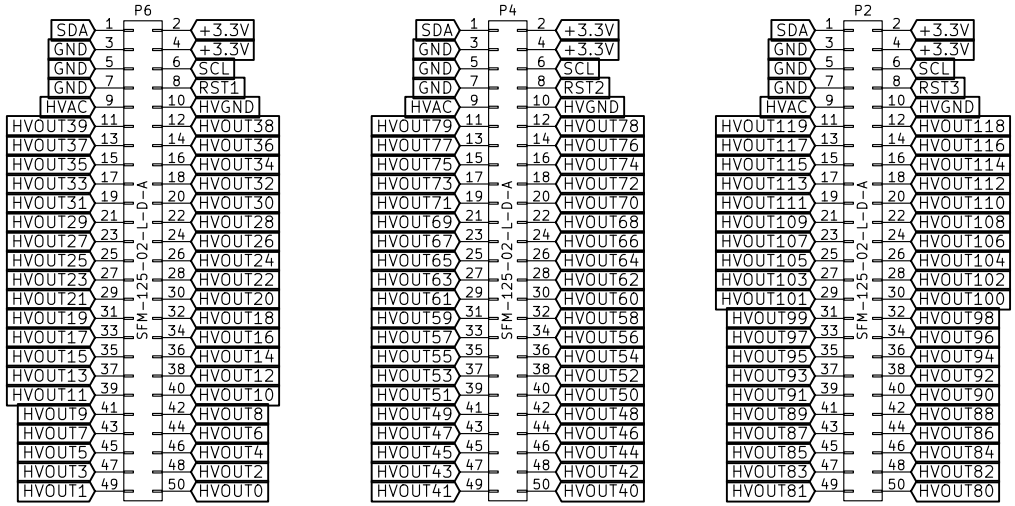
J1 connects HVGND to GND (note that this should normally be connected)

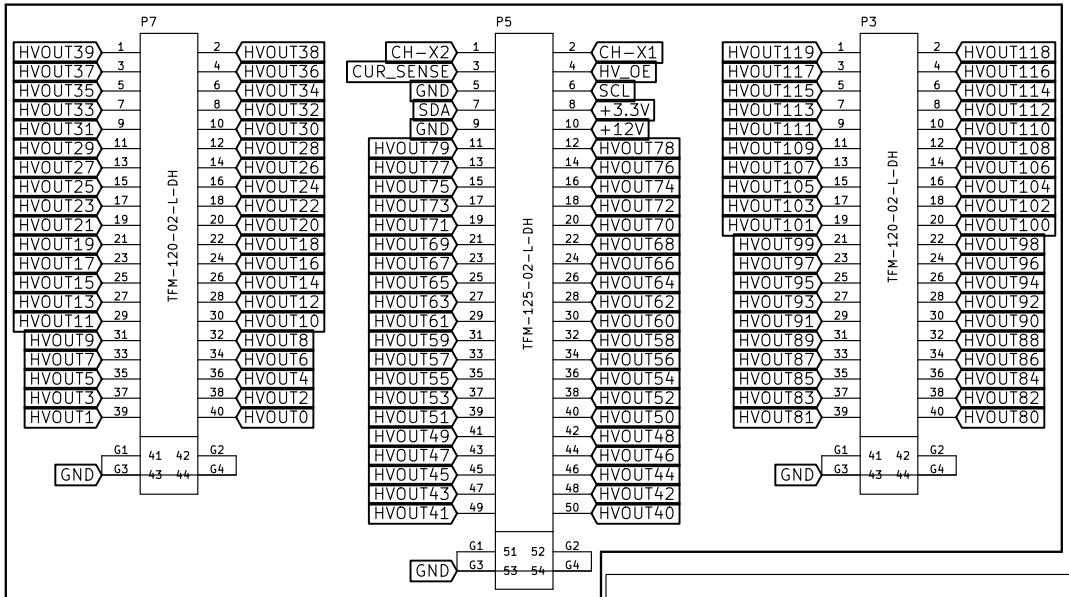


J2 must be connected to enable HV output

HV SWITCHING BOARD EDGE CONNECTORS

Each switching boards consists of an array of 40 solid-state relays controlled over i2c.
Each output is either connected to this HVAC signal or shorted to HVGND.
HVAC is a bipolar square wave signal of up to 150 Vrms (frequency = 100 Hz to 10 kHz)





DMF DEVICE CONNECTOR PORTS

These connectors accept (Samtec 0.050" pitch TFM Tiger Eye series connectors) from another PCB that interfaces with a DMF device using spring-loaded pogo-pins. Each pin carries a bipolar square wave signal of up to 150 Vrms (frequency = 100 Hz to 10 kHz)

Sci-Bots Inc.

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File: dropbot-front-panel.sch

Title: DropBot front panel

Size: USLetter	Date: 2017-04-28	**Rev: 3.0**
KiCad E.D.A. kicad 4.0.1-stable		Id: 1/1