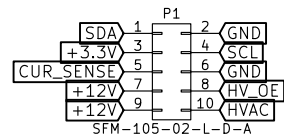


## CONTROL BOARD EDGE CONNECTOR

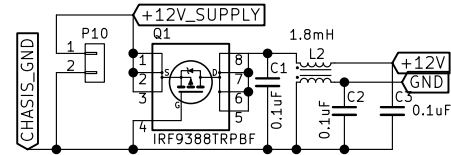


+12 V power is provided by a DC power brick.  
+3.3V power is obtained using a step-down (buck) regulator.

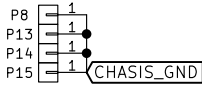
The control board generates a bipolar square wave up to 150 Vrms (frequency = 100 Hz to 10 kHz) with a boost converter that uses the +12 V source as input. It communicates with the computer over USB/serial and with the HV switching boards over I2C.

It also measures the return current from the device (CUR\_SENSE).

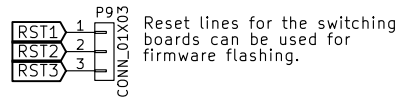
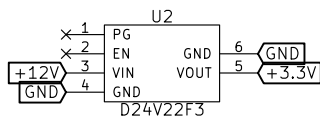
**POWER IN**  
+12V input with reverse polarity protection and EMI filter.



## MOUNTING HOLES



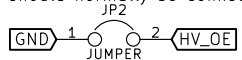
## 3.3V POWER REGULATOR



## JUMPERS



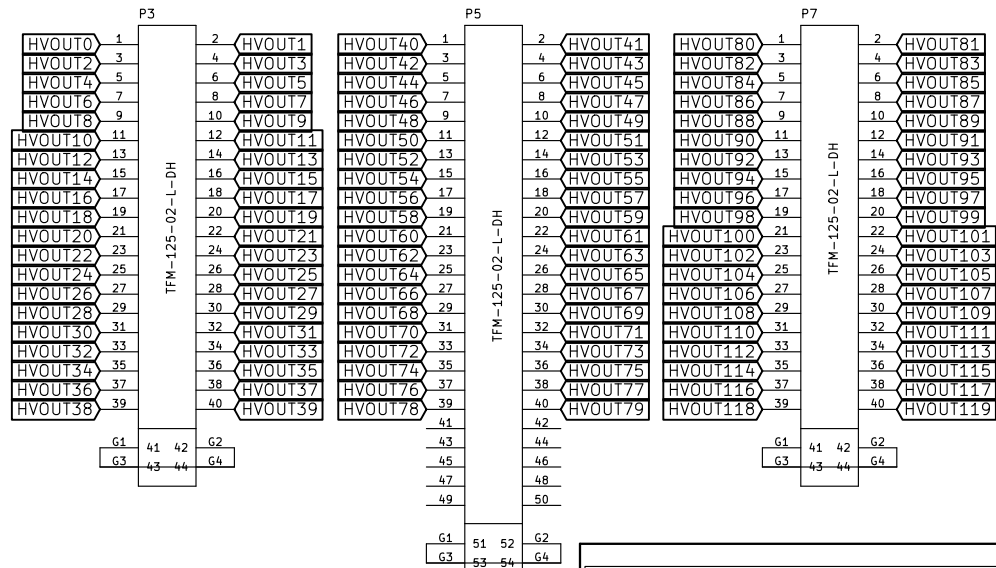
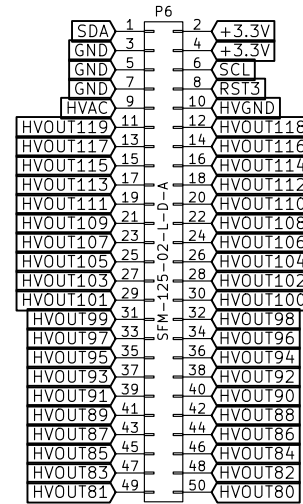
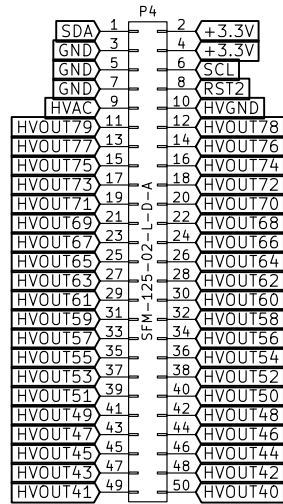
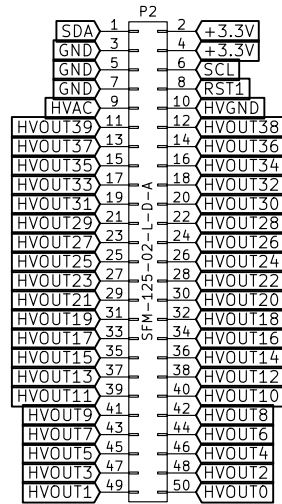
J1 connects HVGND to GND (note that this should normally be connected)



J2 must be connected to enable HV output

## HV SWITCHING BOARD EDGE CONNECTORS

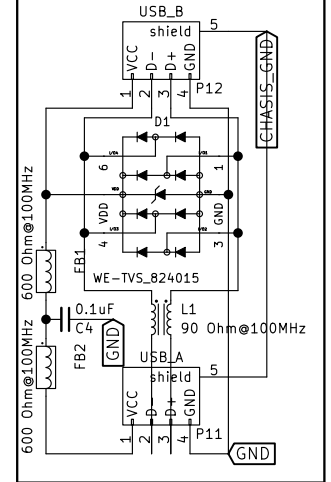
Each switching boards consists of an array of 40 solid-state relays controlled over i2c.  
Each output is either connected to this HVAC signal or shorted to HVGND.  
HVAC is a bipolar square wave signal of up to 240 Vrms (frequency = 100 Hz to 10 kHz)



## 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 240 Vrms (frequency = 100 Hz to 10 kHz)

**USB PASSTHROUGH**  
Includes ESD protection and EMI suppression (See Wurth Electronics App Note ANP002C).



Sci-Bots Inc.

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**Title: DropBot front panel**

Size: USLetter Date: 2016-12-18

KiCad E.D.A. kicad 4.0.1-stable

Rev: 0.1

Id: 1/1