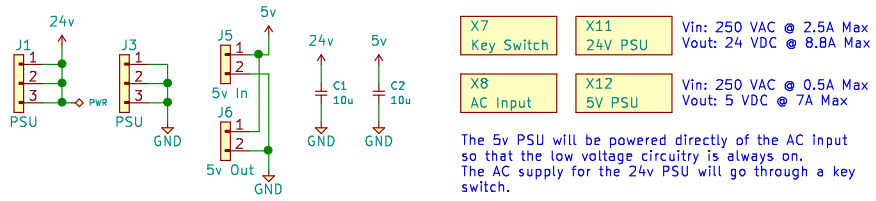
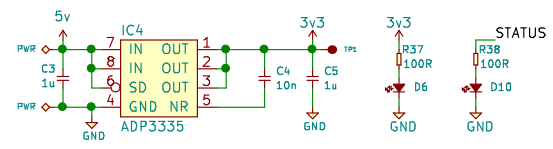
External Power Supply:



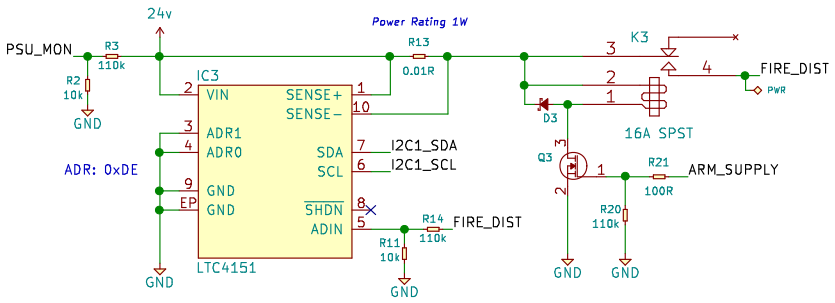
X7 Key Switch	X11 24V PSU — Vin: 250 VAC @ 2.5A Max, Vout: 24 VDC @ 8.8A Max
X8 AC Input	X12 5V PSU — Vin: 250 VAC @ 0.5A Max, Vout: 5 VDC @ 7A Max

The 5v PSU will be powered directly of the AC input so that the low voltage circuitry is always on. The AC supply for the 24v PSU will go through a key switch.

Power Supply:



Supply Arming:

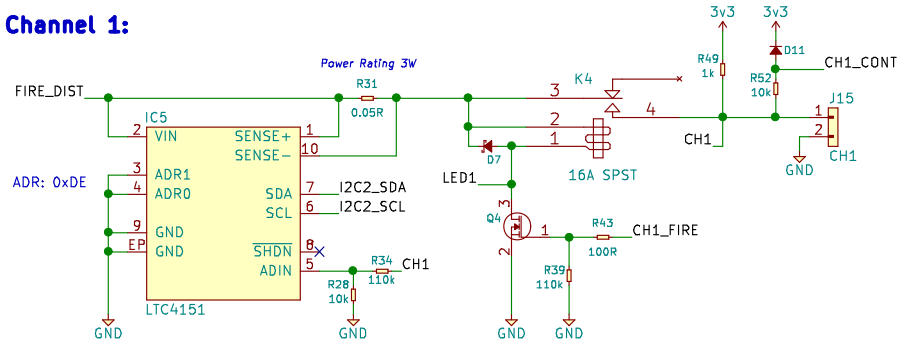


ADC Full Scale Range:
Vin: 102.4 V
Sense: 81.92 mV
ADIN: 2.048 V

Sense Resistor Calcs:
Is= 8.8 A
Vs = 8.8 x 0.01 = 88 mV
Ps = 8.8 x 8.8 x 0.01 = 0.77 W

Voltage Divider Calcs:
Vo = 10/(110+10) x 24 = 2 V

Channel 1:

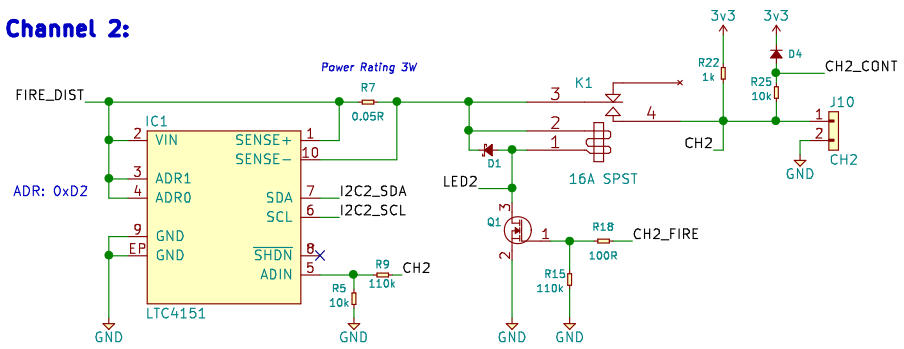


ADC Full Scale Range:
Vin: 102.4 V
Sense: 81.92 mV
ADIN: 2.048 V

Sense Resistor Calcs:
Is= 1.5 A (nom). 4 A (max)
Vs = 1.5 x 0.05 = 75 mV
Ps = 4 x 4 x 0.05 = 0.8 W

Voltage Divider Calcs:
Vo = 10/(110+10) x 24 = 2 V

Channel 2:

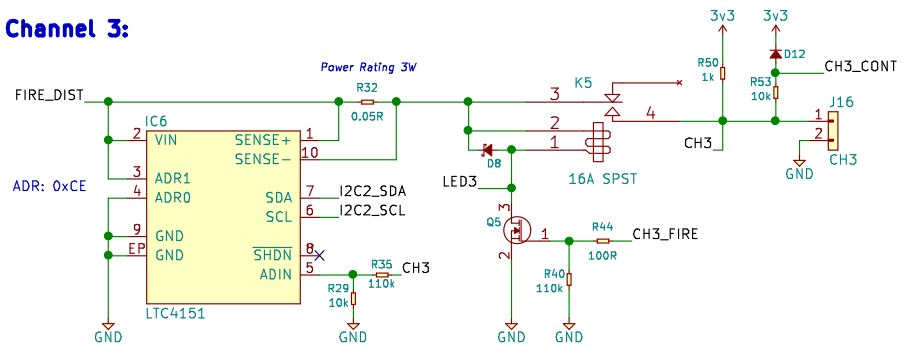


ADC Full Scale Range:
Vin: 102.4 V
Sense: 81.92 mV
ADIN: 2.048 V

Sense Resistor Calcs:
Is= 1.5 A (nom). 4 A (max)
Vs = 1.5 x 0.05 = 75 mV
Ps = 4 x 4 x 0.05 = 0.8 W

Voltage Divider Calcs:
Vo = 10/(110+10) x 24 = 2 V

Channel 3:

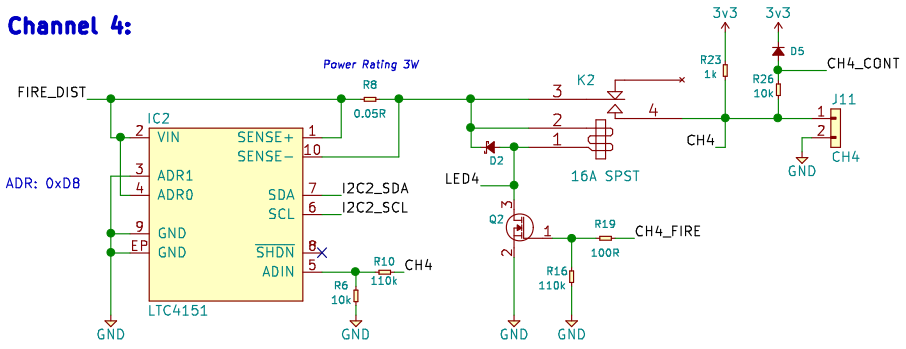


ADC Full Scale Range:
Vin: 102.4 V
Sense: 81.92 mV
ADIN: 2.048 V

Sense Resistor Calcs:
Is= 1.5 A (nom). 4 A (max)
Vs = 1.5 x 0.05 = 75 mV
Ps = 4 x 4 x 0.05 = 0.8 W

Voltage Divider Calcs:
Vo = 10/(110+10) x 24 = 2 V

Channel 4:

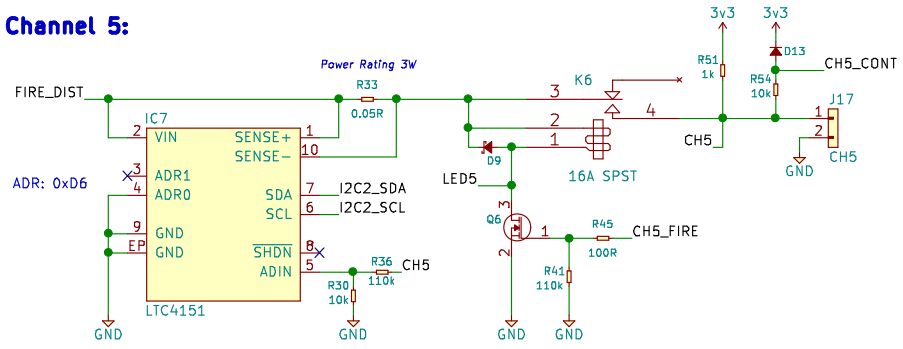


ADC Full Scale Range:
Vin: 102.4 V
Sense: 81.92 mV
ADIN: 2.048 V

Sense Resistor Calcs:
Is= 1.5 A (nom). 4 A (max)
Vs = 1.5 x 0.05 = 75 mV
Ps = 4 x 4 x 0.05 = 0.8 W

Voltage Divider Calcs:
Vo = 10/(110+10) x 24 = 2 V

Channel 5:

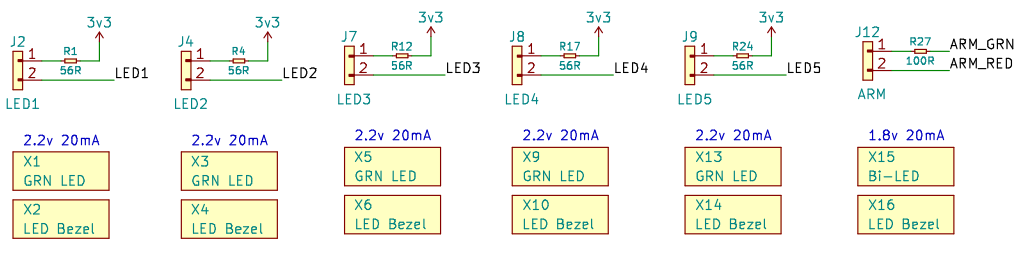


ADC Full Scale Range:
Vin: 102.4 V
Sense: 81.92 mV
ADIN: 2.048 V

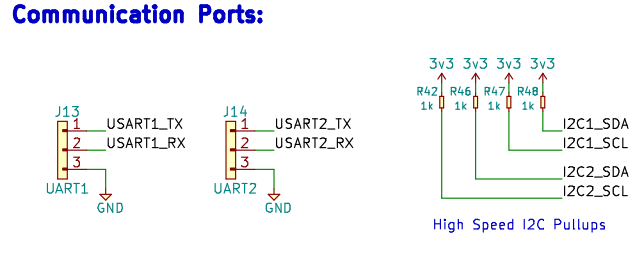
Sense Resistor Calcs:
Is= 1.5 A (nom). 4 A (max)
Vs = 1.5 x 0.05 = 75 mV
Ps = 4 x 4 x 0.05 = 0.8 W

Voltage Divider Calcs:
Vo = 10/(110+10) x 24 = 2 V

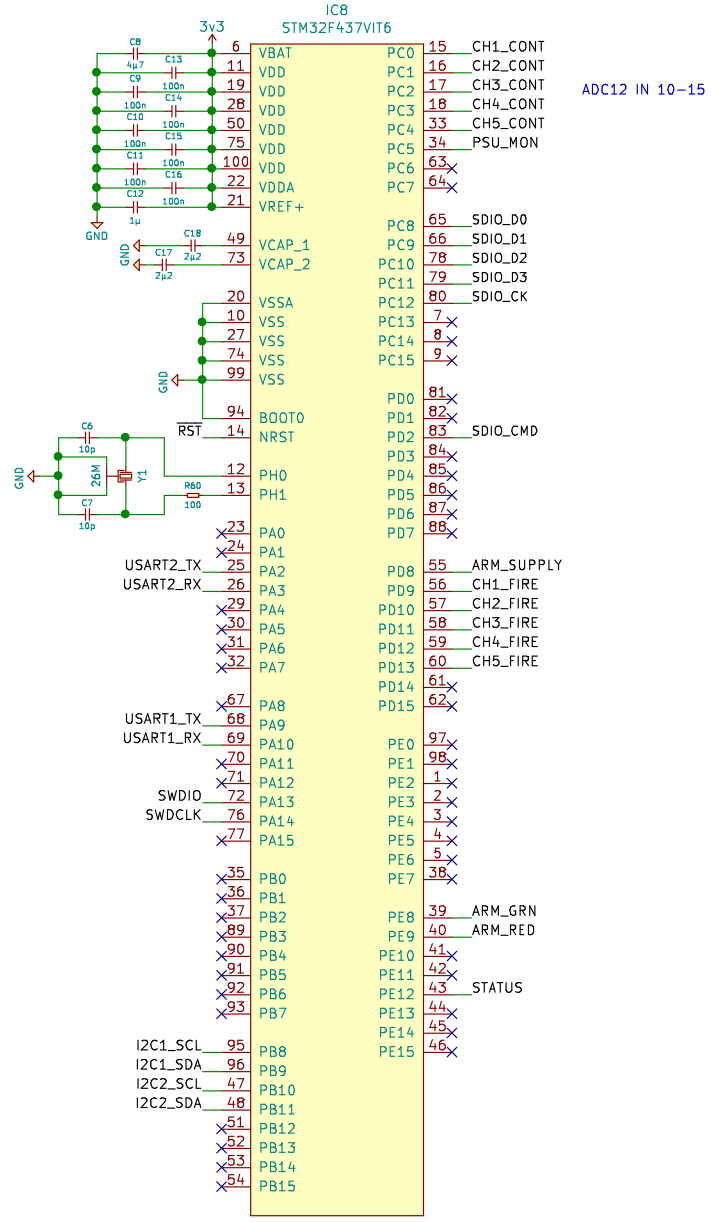
Panel Indicators:



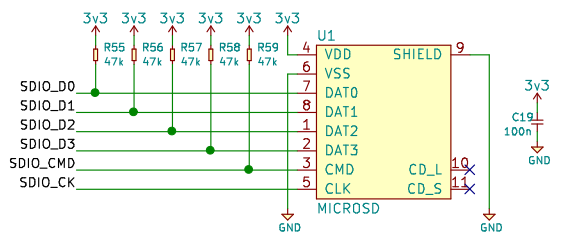
Communication Ports:



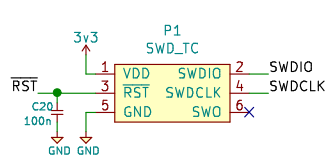
Microcontroller:



SD Card:



Tag Connect:



Matt Coates

Sheet: /
File: ignition.sch

Title: Valve Controller

Size: A3	Date: 2018-11-03	**Rev: 1**
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