

COOLING SYSTEM

Interconnectivity Document

ECE 492 2017

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Overview

The purpose of this document is to provide wiring and interconnect information about the COOLING SYSTEM Controller box. This document specifically regards the interconnect information for the components within the COOLING SYSTEM Controller box. A separate ICD can be found for how the COOLING SYSTEM Controller box connects with its external components. All of the images included below are provided in .pdf and original form in the zip folder located here:

For information about COOLING SYSTEM and these subsystems, see the User Manual and Maintenance Manual, both of which can be accessed here: <https://sites.lafayette.edu/ece492-sp17/subsystems/cooling-system/>

Cooling System ICD Overview

The image below shows a full wiring diagram of all the components within the COOLING Controller box. Below is also a corresponding wire lists, listing wire number, A/B connections and voltage for each of the wires.

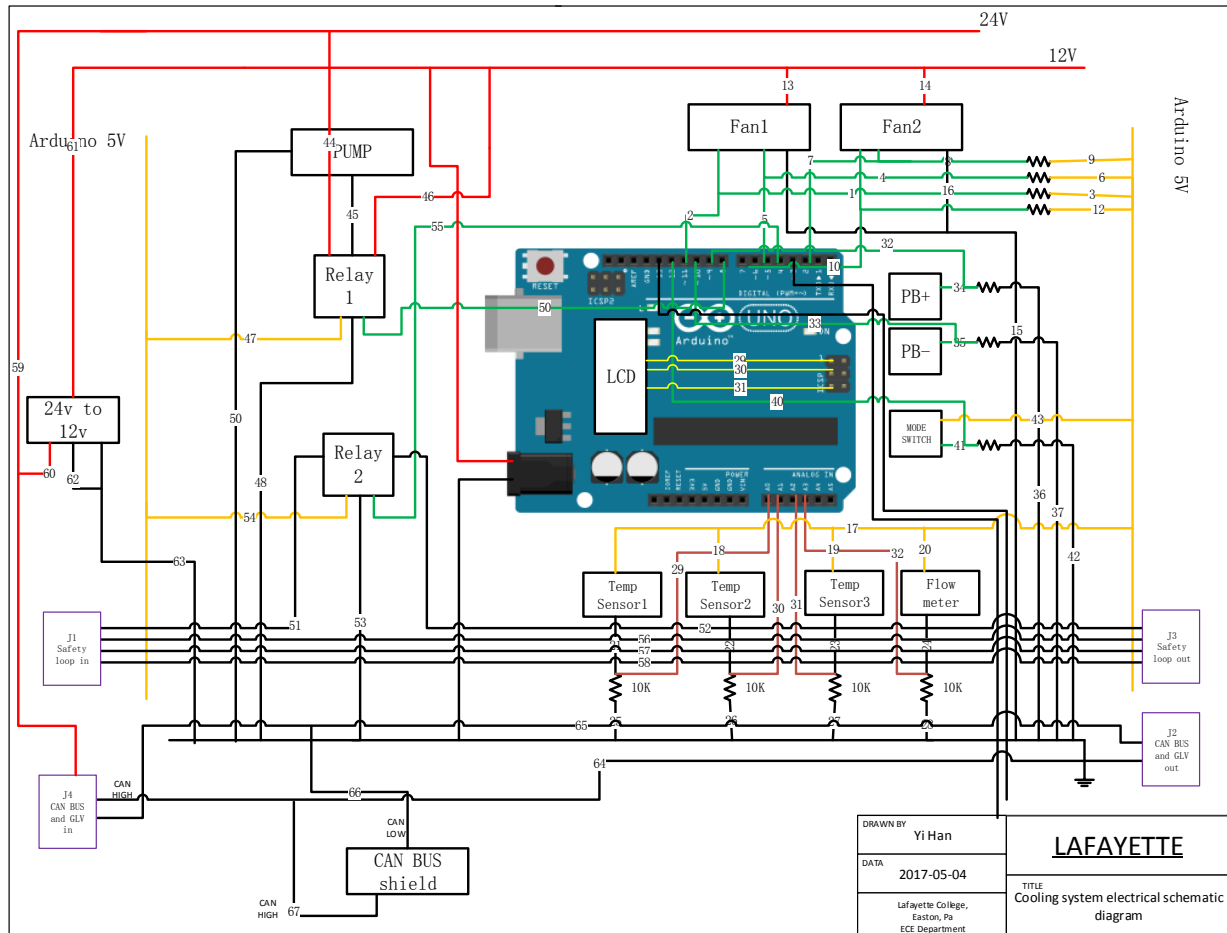


Figure 1: COOLING CONTROLLER Box Internal Connections

Wire Number	Conn A	Conn B	Voltage
1	FAN1 PWM	10K Resistor	N/A
2	FAN1 PWM	DIGITAL 11	N/A
3	10K Resistor	Arduino 5V	5V
4	FAN1 Tachometer	10K Resistor	N/A
5	FAN1 Tachometer	DIGITAL 5	N/A

6	10K Resistor	Arduino 5V	5V
7	FAN2 Tachometer	10K Resistor	N/A
8	FAN2 Tachometer	DIGITAL 2	N/A
9	10K Resistor	Arduino 5V	5V
10	FAN2 PWM	DIGITAL 6	N/A
11	FAN2 PWM	10K Resistor	N/A
12	10K Resistor	Arduino 5V	5V
13	FAN1 Power	12V	12V
14	FAN2 Power	12V	12V
15	FAN1 GND	GND	GND
16	FAN2 GND	GND	GND
17	TEMP SENSOR1 PIN1	Arduino 5V	5V
18	TEMP SENSOR2 PIN1	Arduino 5V	5V
19	TEMP SENSOR3 PIN1	Arduino 5V	5V
20	FLOW METER PIN1	Arduino 5V	5V
21	TEMP SENSOR1 PIN2	10K Resistor	N/A
22	TEMP SENSOR2 PIN2	10K Resistor	N/A
23	TEMP SENSOR3 PIN2	10K Resistor	N/A
24	FLOW METER PIN2	10K Resistor	N/A
25	TEMP SENSOR1 PIN2	A0	N/A
26	TEMP SENSOR2 PIN2	A1	N/A
27	TEMP SENSOR3 PIN2	A2	N/A
28	FLOW METER PIN2	A3	N/A
29	LCD TX	RX	N/A
30	LCD +	LCD + on Arduino	N/A
31	LCD -	LCD - on Arduino	N/A
32	PB1 GND	DIGITAL 9	N/A
33	PB2 GND	DIGITAL 10	N/A
34	PB1 GND	10K Resistor	N/A
35	PB2 GND	10K Resistor	N/A
36	10K Resistor	GND	GND
37	10K Resistor	GND	GND
38	PB1 POWER	Arduino 5V	5V
39	PB2 POWER	Arduino 5V	5V
40	MODE SWICH GND	DIGITAL 12	N/A
41	MODE SWICH GND	10K Resistor	N/A
42	10K Resistor	GND	GND
43	MODE SWICH POWER	Arduino 5V	5V
44	RELAY1 PIN1	24V	24V

45	RELAY1 PIN2	PUMP POWER	N/A
46	RELAY1 PIN3	12V	12V
47	RELAY1 POWER	Arduino 5V	5V
48	RELAY1 GND	GND	GND
49	RELAY1 S	DIGITAL 8	N/A
50	PUMP GND	GND	GND
51	RELAY2 PIN1	SAFETY LOOP1 IN	N/A
52	RELAY2 PIN2	SAFETY LOOP1 OUT	N/A
53	RELAY2 GND	GND	GND
54	RELAY2 POWER	Arduino 5V	5V
55	RELAY2 S	DIGITAL 4	N/A
56	J1	J5	N/A
57	J1	J5	N/A
58	J1	J5	N/A
59	J4	24V	N/A
60	24V	DC TO DC CONVERTOR	24V
61	DC TO DC CONVERTOR	12V	12V
62	DC TO DC CONVERTOR	GND	GND
63	DC TO DC CONVERTOR	GND	GND
64	J4	J2	N/A
65	J4	J2	N/A
66	CAN BUS SHILED	J2	N/A
67	CAN BUS SHILED	J2	N/A