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Subject: Resistor and UNO pin plan
Date: October 11, 2023 at 2:58 PM
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I thought this might help you see the resistance steps and how they tie to the UNO sensors, both input and output. I'm using it to determine the size and power handling necessary for each resistor. The resistors highlighted in blue are the values that ar

By column heading, Sensor Voltage input (self explanatory, UNO output = output pin #, Ladder Relay = position on the ladder (numbers on the schematic need to be changed), columns in resistor placement section show the resistance before each adde
The new section is simply calculating the current through each resistor and total resistance to determine what watt resistors and what gauge wire is needed for the connections. The last couple of columns show how the input voltage is mapped to tank le

Resistor Ladder pin assignments, resistor sizing & resistor values at each tan

			Resistor Placement					amp	volts				
Sensor Voltage Input	UNO output	Ladder Relay	Starting Resistance	Added Resistor	Ending (Planned) Resistance	VERBO Expected Resistance	Delta	6 amps per resistor	6 amps total resistance	power for total resistance	Resistor size (watts)	Sensor Input Voltage =>	Sensor Input Voltage <
<.6	13	1	33.3		33.3	30	3.3	0.180	0.180	1.08	2/3	0	0.10
0.10	12		33.3		33.3	30.0	3.3		0.180	1.08	2/3	0.10	
0.30			33.3		33.3	34.2	-0.9						0.50
0.50	11	2	33.3	18.0	51.3	42.6	8.7	0.180	0.117	0.70	2/3	0.50	
0.70			51.3		51.3	51.0	0.3						
0.85			51.3		51.3	59.4	-8.1						1.00
1.00	10	3	51.3	18.0	69.3	65.7	3.6	0.117	0.087	0.52	2/1	1.00	
1.20			69.3		69.3	72.0	-2.7						1.20
1.40	9	4	69.3	13.0	82.3	80.4	1.9	0.087	0.073	0.44	2/1	1.20	
1.60			82.3		82.3	88.8	-6.5						1.75
1.75	8	5	82.3	15.0	97.3	97.2	0.1	0.073	0.062	0.37	1	1.75	
1.80			97.3		97.3	103.5	-6.2						
2.00			97.3		97.3	105.6	-8.3						2.20
2.20	7	6	97.3	22.0	119.3	114.0	5.3	0.062	0.050	0.30	1	2.20	
2.40			119.3		119.3	122.4	-3.1						2.40
2.60	6	7	119.3	28.0	147.3	130.8	16.5	0.050	0.041	0.24	1	2.40	
2.80			147.3		147.3	139.2	8.1						
3.00			147.3		147.3	147.6	-0.3			0.00	1		
3.20			147.3		147.3	156.0	-8.7						
3.40			147.3		147.3	164.4	-17.1						3.40
3.50	5	8	147.3	30.0	177.3	172.8	4.5	0.041	0.034	0.20	1	3.50	
3.60			177.3		177.3	177.0	0.3						
3.80			177.3		177.3	181.2	-3.9						4.00
4.00	4	9	177.3	21.0	198.3	189.6	8.7	0.034	0.030	0.18	1	4.00	
4.20			198.3		198.3	198.0	0.3						
4.40			198.3		198.3	206.4	-8.1						4.60
4.60	3	10	198.3	42.0	240.3	214.8	25.5	0.030	0.025	0.15	1	4.60	
4.80			240.3		240.3	223.2	17.1						
5.00			240.3		240.3	231.6	8.7						6.00
5.01+			240.3		240.3	240.0	0.3						