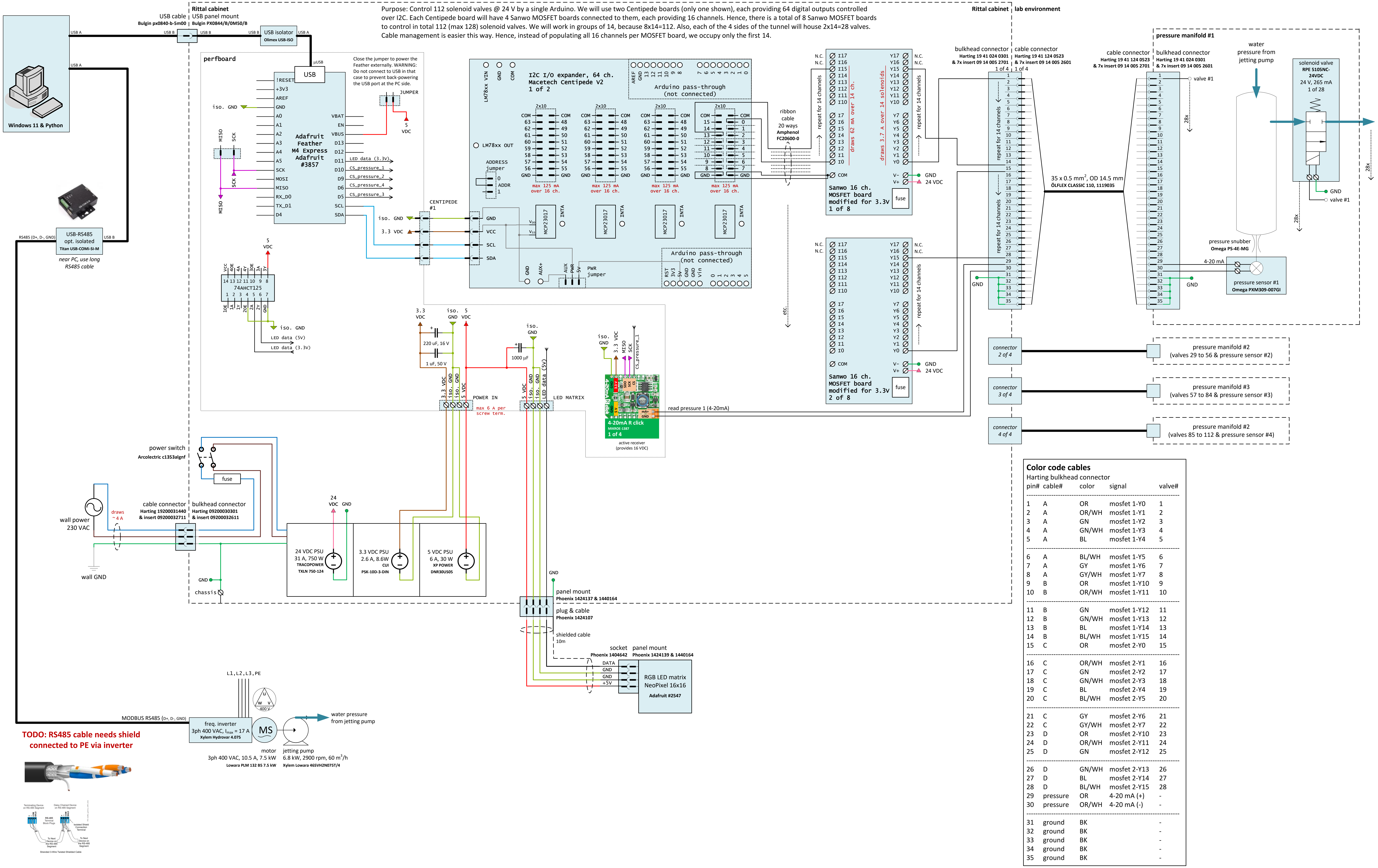
title : Electronic diagram `TWT jetting grid`
author : Dennis van Gils
url : https://github.com/Dennis-van-Gils/project-TWT-jetting-grid
date : 19-07-2022

Purpose: Control 112 solenoid valves @ 24 V by a single Arduino. We will use two Centipede boards (only one shown), each providing 64 digital outputs controlled over I2C. Each Centipede board will have 4 Sanwo MOSFET boards connected to them, each providing 16 channels. Hence, there is a total of 8 Sanwo MOSFET boards to control in total 112 (max 128) solenoid valves. We will work in groups of 14, because 8x14=112. Also, each of the 4 sides of the tunnel will house 2x14=28 valves. Cable management is easier this way. Hence, instead of populating all 16 channels per MOSFET board, we occupy only the first 14.



Color code cables

Harting bulkhead connector

pin#	cable#	color	signal	valve#
1	A	OR	mosfet 1-Y0	1
2	A	OR/WH	mosfet 1-Y1	2
3	A	GN	mosfet 1-Y2	3
4	A	GN/WH	mosfet 1-Y3	4
5	A	BL	mosfet 1-Y4	5
6	A	BL/WH	mosfet 1-Y5	6
7	A	GY	mosfet 1-Y6	7
8	A	GY/WH	mosfet 1-Y7	8
9	B	OR	mosfet 1-Y10	9
10	B	OR/WH	mosfet 1-Y11	10
11	B	GN	mosfet 1-Y12	11
12	B	GN/WH	mosfet 1-Y13	12
13	B	BL	mosfet 1-Y14	13
14	B	BL/WH	mosfet 1-Y15	14
15	C	OR	mosfet 2-Y0	15
16	C	OR/WH	mosfet 2-Y1	16
17	C	GN	mosfet 2-Y2	17
18	C	GN/WH	mosfet 2-Y3	18
19	C	BL	mosfet 2-Y4	19
20	C	BL/WH	mosfet 2-Y5	20
21	C	GY	mosfet 2-Y6	21
22	C	GY/WH	mosfet 2-Y7	22
23	D	OR	mosfet 2-Y10	23
24	D	OR/WH	mosfet 2-Y11	24
25	D	GN	mosfet 2-Y12	25
26	D	GN/WH	mosfet 2-Y13	26
27	D	BL	mosfet 2-Y14	27
28	D	BL/WH	mosfet 2-Y15	28
29	pressure	OR	4-20 mA (+)	-
30	pressure	OR/WH	4-20 mA (-)	-
31	ground	BK		-
32	ground	BK		-
33	ground	BK		-
34	ground	BK		-
35	ground	BK		-

title	: Circuit diagram `Sanwo 16 channel MOSFET board`
author	: Dennis van Gils
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