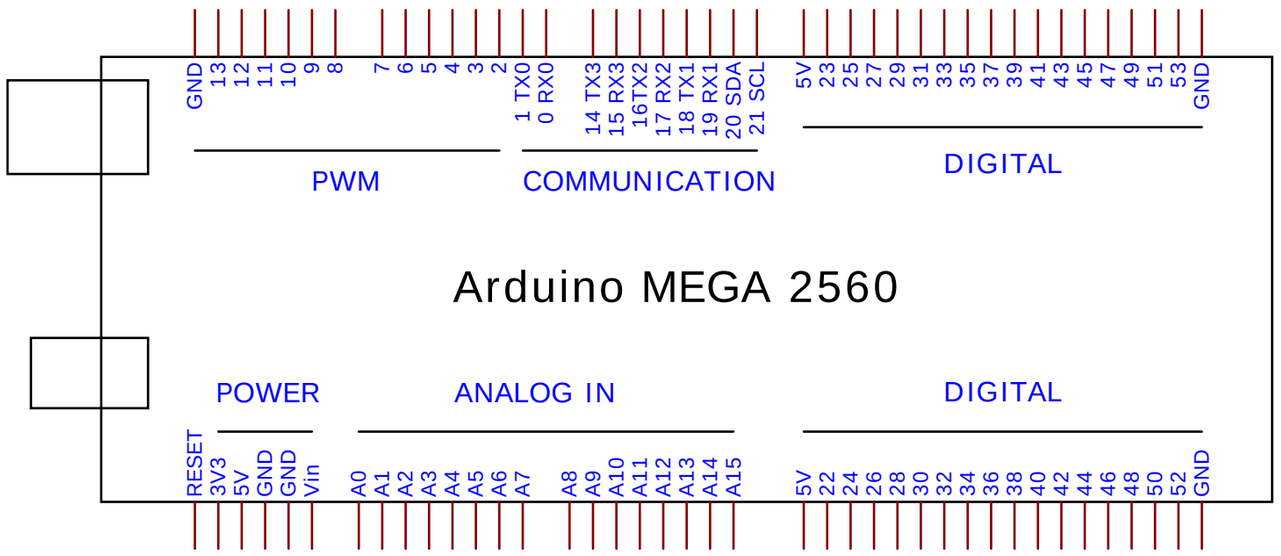
Skyline MESA

Arduino Microcontroller Based Water Tester

Acidity / Turbidity / Salinity / Temperature



Adrian Sucahyo, Vivek Anandh, Ruiyu Zhang, Nickolas Zhao

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NOTES

Power

1. Power Cables should be AWG 16
2. Common Connections (i.e. Power) can be distributed Terminal Blocks
3. Ground Connections will be made to all Metal Plates
4. Direct Power Cables need to be Isolated

Data

5. Ribbon Cables are used for Data Connections
6. All Ribbon Cables should be labeled appropriately (i.e. 403)
7. Individual Conductors need not be labeled
8. Typically Data Connections will use Custom Pin Headers

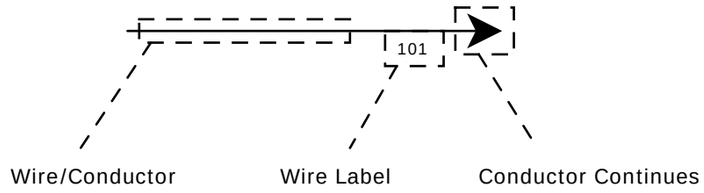
Boards

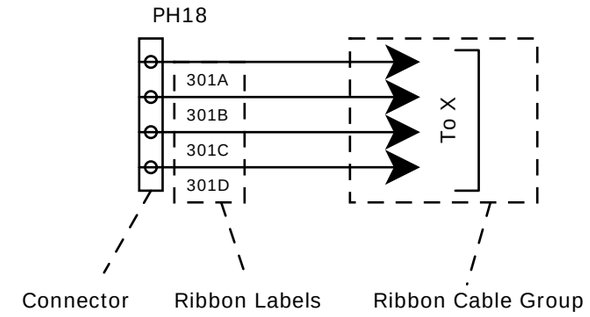
9. Distribution Boards are prewired on Perfboard
10. Components are presoldered, or set to accept breakout boards

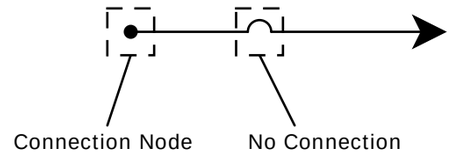
Connectors

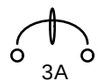
11. Pin Headers will be marked with orientation
12. Terminal blocks will be marked with connections
13. Pin Headers Denoted "PHxx"
14. Terminal Blocks Denoted "TBxx"

SYMBOLS

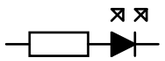






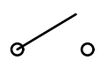


Connector

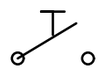


Indicator

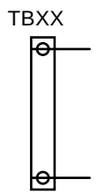
Ground Connection



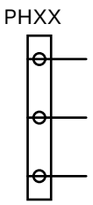
Switch (Toggle)



Switch (Push Button)



Terminal Block



Pin Header

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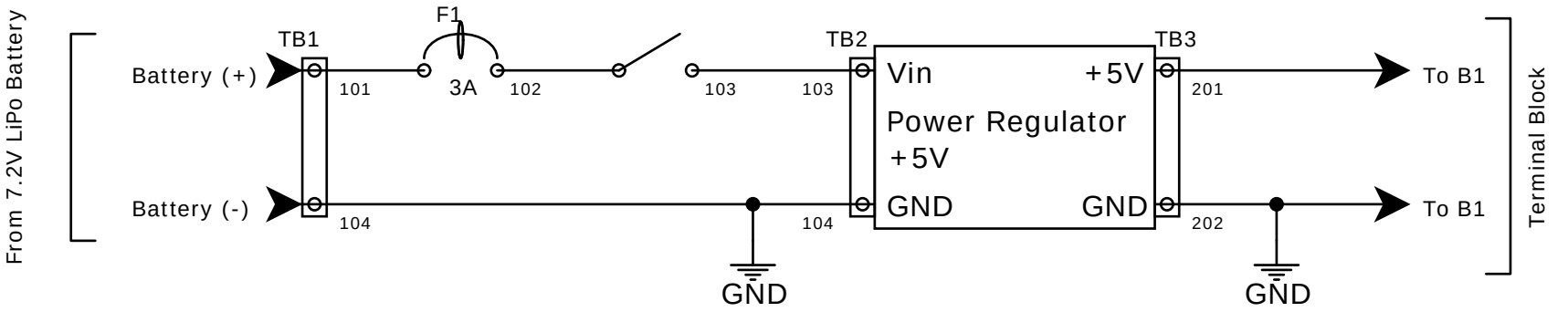

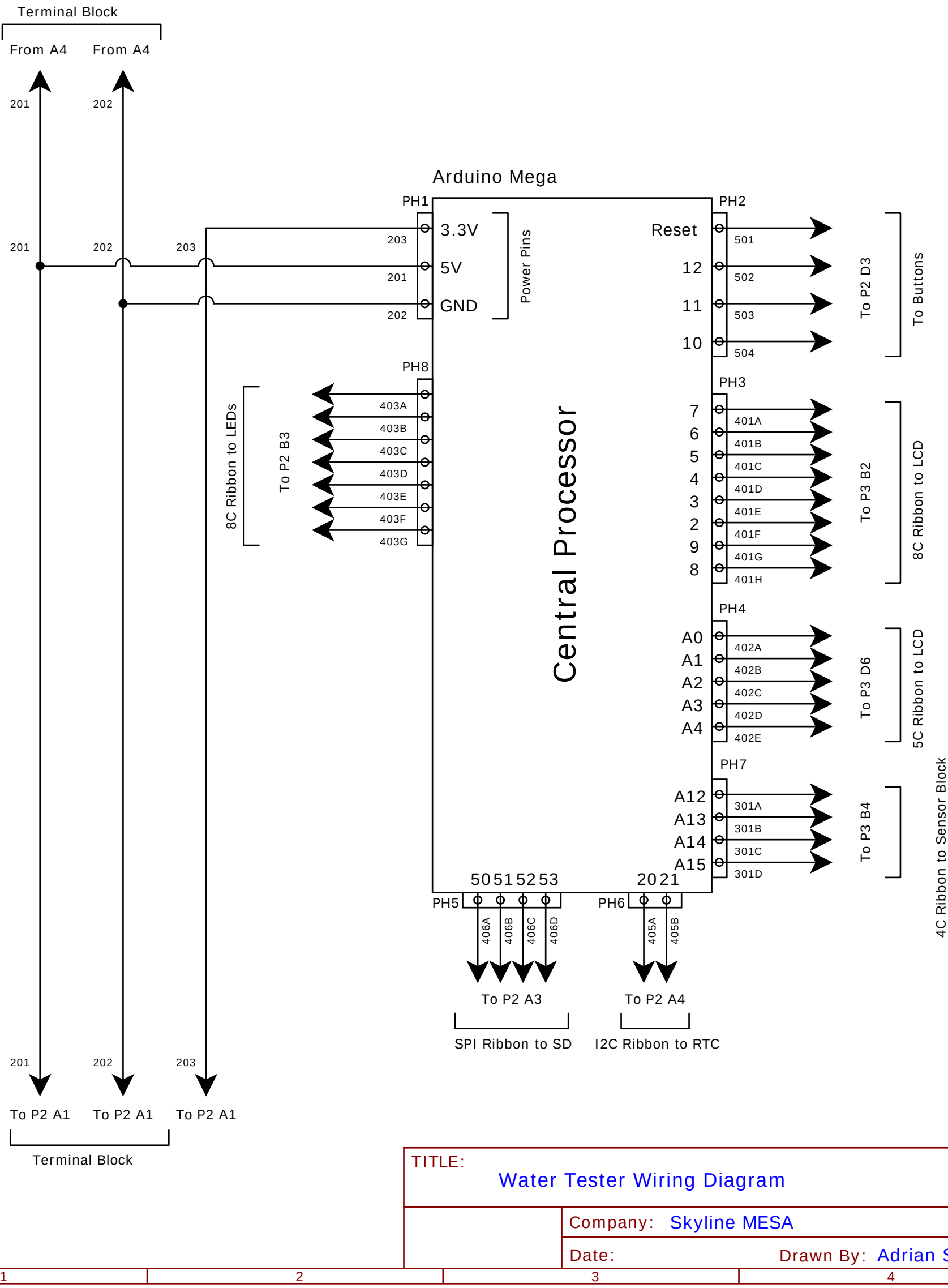

TITLE: Water Tester Wiring Diagram		REV: 3.0
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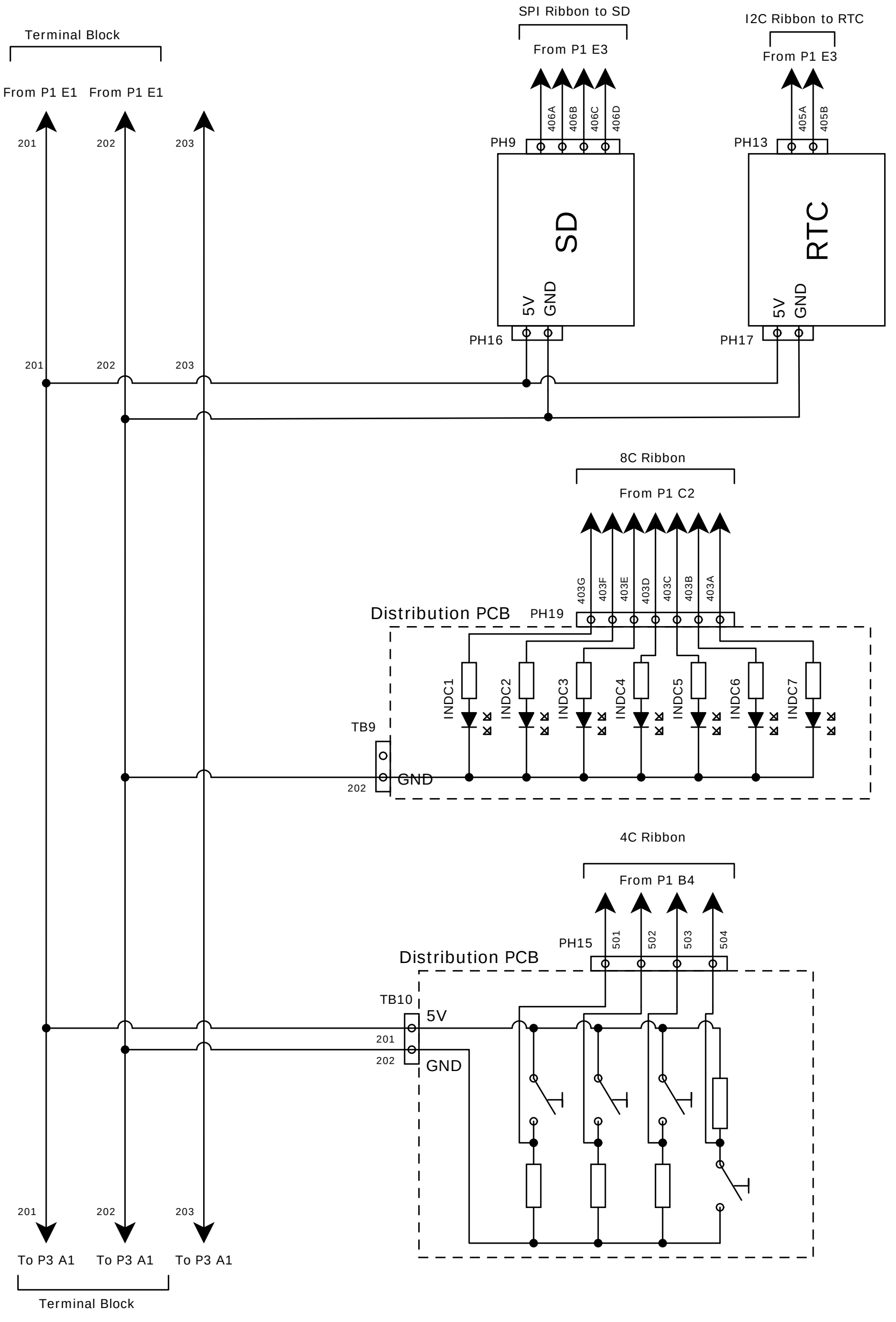

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Terminal Block

From P2 E1 From P2 E1 From P2 E1

201 202 203

TFT LCD

PH12

203 3.3V

201 5V

202 GND

Power Pins

PH10

8C Ribbon

From P1 C4

401A 20

401B 19

401C 18

401D 17

401E 16

401F 15

401G 22

401H 21

HMI

3 4 5 6 2

PH11

402A 402B 402C 402D 402E

From P1 D4

5C Ribbon

4C Ribbon

From P1 D4

301A 301B 301C 301D

PH14

Distribution Board

TB4

3 2 1 Turb.

To Probe

TB5

3 2 1 EC

To Probe

TB6

3 2 1 pH

To Probe

TB7

3 2 1 Temp.

To Probe

TB8

201 GND

202 5V

TITLE: Water Tester Wiring Diagram		REV: 3.0
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Group	Tag	Description	Qty
Modules			
	UC1	Arduino MEGA 2560	1
	U1	Buck/Boost Converter	1
	U2	LCD TFT Display	1
	U3	pH Probe	1
	U4	Turbidity Probe	1
	U5	Temperature Probe	1
	U6	TDS Probe	1
	U7	SD Card Reader	1
	M1	RTC	1
Discrete Components			
	LED1, LED2, LED3, LED4, LED5, LED7, LED7	LED Indicators	7
	R1, R2, R3, R4	10K Resistor	4
	R5	4.7K Resistor	1
	R6, R7, R8, R9, R10, R11, R12	330 Resistor	6
	SW1, SW2, SW3, SW4	Momentary Push Buttons	4
	MSW1	Main Power Switch	1
	F1	3 Amp Fuse	1
Pin Headers			
	PH1, PH12	3 Conductor	2
	PH2, PH5, PH7, PH9, PH14, PH15	4 Conductor	6
	PH3, PH8, PH10, PH18	8 Conductor	4
	PH4, PH11	5 Conductor	2
	PH6, PH13, PH16, PH17	2 Conductor	4
Terminal Blocks			
	TB1, TB2, TB3, TB8, TB9, TB10	2 Position	6
	TB4, TB5, TB6, TB7	3 Position	4
Miscellaneous			
	B1	7.2 LiPo Battery	1

TITLE: BOM

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