			TCP (Network)		Serial	
BruControl Interface Wiring Map: Arduino MEGA 2560 (Firmware v46)						
Connection ->			TCP (Network)		Serial	<- Connection
Wiring Map ->			Default	Wi-Fi	Default	<- Wiring Map
Firmware Prefix ->			BruControl.46_.MEGA.			<- Firmware Prefix
Firmware Suffix ->						<- Firmware Suffix
Interface pin #	BruControl port #	UniShield UM-1 Terminal	E	W	S	User Description (record device type and device connected)
0	N/A	10-2 (VD)	N/C	N/C	N/C	
1	N/A	10-1 (VD)	N/C	N/C	N/C	
2	2	9-3 (VC)	D, C, O, P	D, C, O, P	D, C, O, P	
3	3	9-4 (VC)	D, C, O, P	D, C, O, P	D, C, O, P	
4	4	9-1 (VC)	D, O, P‡	D, O, P‡	D, O, P	
5	5	9-2 (VC)	D, O, P	N/C	D, O, P	
6	6	8-3 (VC)	D, O, P	D, O, P	D, O, P	
7	7	8-4 (VC)	D, O, P	N/C	D, O, P	
8	8	8-1 (VC)	D, O, P	D, O, P	D, O, P	
9	9	8-2 (VC)	D, O, P	D, O, P	D, O, P	
10	10	7-3 (VC)	N/C	N/C	D, O, P	
11	11	7-4 (VC)	D, O, P	D, O, P	D, O, P	
12	12	7-1 (VC)	D, O, P	D, O, P	D, O, P	
13	13	7-2 (VC)	D*†, P, L	D*†, P, L	D*†, P, L	
14	14	11-3 (VD)	D, O	D, O	D, O	
15	15	11-4 (VD)	D, O	D, O	D, O	
16	16	11-1 (VD)	D	D	D	
17	17	11-2 (VD)	D	D	D	
18	18	10-3 (VD)	D, C	D, C	D, C	
19	19	10-4 (VD)	D, C	D, C	D, C	
20	N/A	N/A	N/C	N/C	N/C	
21	N/A	N/A	N/C	N/C	N/C	
22	22	12-1 (VD)	D	D	D	
23	23	12-2 (VD)	D	D	D	
24	24	12-3 (VD)	D	D	D	
25	25	12-4 (VD)	D	D	D	
26	26	6-4 (VB)	D	D	D	
27	27	6-3 (VB)	D	D	D	
28	28	6-2 (VB)	D	D	D	
29	29	6-1 (VB)	D	D	D	
30	30	5-4 (VB)	D	D	D	
31	31	5-3 (VB)	D	D	D	
32	32	5-2 (VB)	D	D	D	
33	33	5-1 (VB)	D	D	D	
34	34	4-4 (VB)	D	D	D	

BruControl Interface Wiring Map: Arduino MEGA 2560 (Firmware v46)						
	Connection ->		TCP (Network)		Serial	<- Connection
	Wiring Map ->		Default	Wi-Fi	Default	<- Wiring Map
	Firmware Prefix ->		BruControl.46_.MEGA.			<- Firmware Prefix
	Firmware Suffix ->					<- Firmware Suffix
Interface pin #	BruControl port #	UniShield UM-1 Terminal	E	W	S	User Description (record device type and device connected)
35	35	4-3 (VB)	D	D	D	
36	36	4-2 (VB)	D	D	D	
37	37	4-1 (VB)	D	D	D	
38	38	1-1 (VA)	D	D	D	
39	39	1-2 (VA)	D	D	D	
40	40	1-3 (VA)	D	D	D	
41	41	1-4 (VA)	D	D	D	
42	42	2-1 (VA)	D	D	D	
43	43	2-2 (VA)	D	D	D	
44	44	2-3 (VA)	D, P	D, P	D, P	
45	45	2-4 (VA)	D, P	D, P	D, P	
46	46	3-1 (VA)	D, P	D, P	D, P	
47	47	3-2 (VA)	D	D	D	
48	48	3-3 (VA)	D	D	D	
49	49	3-4 (VA)	D	D	D	
50	50	N/A	N/C	N/C	D†	
51	51	N/A	N/C	N/C	D†	
52	52	N/A	N/C	N/C	D†	
53	53	N/A	N/C	N/C	D†	
A0	54	A0	A, D	A, D	A, D	
A1	55	A1	A, D	A, D	A, D	
A2	56	A2	A, D	A, D	A, D	
A3	57	A3	A, D	A, D	A, D	
A4	58	A4	A, D	A, D	A, D	
A5	59	A5	A, D	A, D	A, D	
A6	60	A6	A, D	A, D	A, D	
A7	61	A7	A, D	A, D	A, D	
A8	62	A8	A, D	A, D	A, D	
A9	63	A9	A, D	A, D	A, D	
A10	64	A10	A, D	A, D	A, D	
A11	65	A11	A, D	A, D	A, D	
A12	66	A12	A, D	A, D	A, D	
A13	67	A13	A, D	A, D	A, D	
A14	68	A14	A, D	A, D	A, D	
A15	69	A15	A, D	A, D	A, D	

BruControl Interface Wiring Map: Arduino MEGA 2560 (Firmware v46)					
Connection ->	**TCP (Network)**		**Serial**	**<- Connection**	
Wiring Map ->	**Default**	**Wi-Fi**	**Default**	**<- Wiring Map**	
Firmware Prefix ->	**BruControl.46_.MEGA.**			**<- Firmware Prefix**	
Firmware Suffix ->				**<- Firmware Suffix**	
Interface pin # / **BruControl port #** / **UniShield UM-1 Terminal**	**E**	**W**	**S**	**User Description (record device type and device connected)**	
Notes / Key					

Instructions: Select the column for firmware used. Wire each interface pin per possible input/outputs. Select device's corresponding port in BruControl.

Default Ethernet (E) shield/boards must be Wiznet 5100 or 5500 based. Wi-Fi (W) shields/boards must be Atmel WINC1500 based.

Interface Wiring Map Codes:

D = Digital Input or Digital Output (Note: Input can be 5V active high or low, output is 5V).

*Digital Output only. †should not be used for RTD device CS pins. ‡should not be wired if network shield has an SD card slot.

P = PWM Output (Note: Output is 5V peak. Frequency is ~500 or ~1000 Hz. Create Analog Output using RC filter or Analog Amplifier Board).

C = Counter Input (Note: trigger is falling edge. Sensor must pull up/down 5V, otherwise an external resistor is needed).

A = Analog Input (Note: range is compared to AREF, which is tied to 5V… also 5V is maximum allowable input).

O = 1-Wire Input (Note: all 1-wire data pins must be tied to only one interface pin. All sensors are addressed by virtual ports 200 - 209 in BruControl).

L = Onboard LED (Note: connecting to "Active Low" or "Low Trigger" relay board may light LED when device is disabled in BruControl).

Duty Cycle and Hysteresis devices are available on Digital Output (D) ports.

RTD device (via SPI communications) CS pins may be wired to any pin/port where Digital Output (D) is available. Wire CS pin from each individual amp to these pins.

PID and Deadband devices are available on both Digital Output (D) and PWM Output (P) ports. For proportional devices, use port with PWM (P) output.

Analog Reference pin (AREF) should be tied to +5V or less to measure analog voltage inputs.

Maximum current (sink or source) per pin is 15mA. Recommend to keep each equal or less than 5mA .

BruControl Interface Wiring Map: Adafruit Grand Central M4 (Firmware v46)						
Connection ->			TCP (Network)		Serial	<- Connection
Wiring Map ->			Default	Wi-Fi	Default	<- Wiring Map
Firmware Prefix ->			BruControl.46_.GrandCentral.			<- Firmware Prefix
Firmware Suffix ->						<- Firmware Suffix
Interface pin #	BruControl port #	UniShield UM-1 Terminal	E	W	S	User Description (record device type and device connected)
0	N/A	10-2 (VD)	N/C	N/C	N/C	
1	N/A	10-1 (VD)	N/C	N/C	N/C	
2	2	9-3 (VC)	D, C, O, P	D, C, O, P	D, C, O, P	
3	3	9-4 (VC)	D, C, O, P	D, C, O, P	D, C, O, P	
4	4	9-1 (VC)	D, O, P‡	D, O, P‡	D, O, P	
5	5	9-2 (VC)	D, O, P	N/C	D, O, P	
6	6	8-3 (VC)	D, O, P	D, O, P	D, O, P	
7	7	8-4 (VC)	D, O, P	N/C	D, O, P	
8	8	8-1 (VC)	D, O, P	D, O, P	D, O, P	
9	9	8-2 (VC)	D, O, P	D, O, P	D, O, P	
10	10	7-3 (VC)	N/C	N/C	D, O	
11	11	7-4 (VC)	D, O, P	D, O, P	D, O, P	
12	12	7-1 (VC)	D, O	D, O	D, O	
13	13	7-2 (VC)	D*, P, L	D*, P, L	D*, P, L	
14	14	11-3 (VD)	D, O, P	D, O, P	D, O, P	
15	15	11-4 (VD)	D, O, P	D, O, P	D, O, P	
16	16	11-1 (VD)	D, P	D, P	D, P	
17	17	11-2 (VD)	D, P	D, P	D, P	
18	18	10-3 (VD)	D, C, P	D, C, P	D, C, P	
19	19	10-4 (VD)	D, C, P	D, C, P	D, C, P	
20	N/A	N/A	N/C	N/C	N/C	
21	N/A	N/A	N/C	N/C	N/C	
22	22	12-1 (VD)	D, P	D, P	D, P	
23	23	12-2 (VD)	D, P	D, P	D, P	
24	24	12-3 (VD)	D, P	D, P	D, P	
25	25	12-4 (VD)	D, P	D, P	D, P	
26	26	6-4 (VB)	D, P	D, P	D, P	
27	27	6-3 (VB)	D, P	D, P	D, P	
28	28	6-2 (VB)	D, P	D, P	D, P	
29	29	6-1 (VB)	D, P	D, P	D, P	
30	30	5-4 (VB)	D, P	D, P	D, P	
31	31	5-3 (VB)	D, P	D, P	D, P	
32	32	5-2 (VB)	D, P	D, P	D, P	
33	33	5-1 (VB)	D, P	D, P	D, P	
34	34	4-4 (VB)	D, P	D, P	D, P	

			TCP (Network)		Serial	
	Connection ->		TCP (Network)		Serial	<- Connection
	Wiring Map ->		Default	Wi-Fi	Default	<- Wiring Map
	Firmware Prefix ->		BruControl.46_.GrandCentral.			<- Firmware Prefix
	Firmware Suffix ->					<- Firmware Suffix
Interface pin #	BruControl port #	UniShield UM-1 Terminal	E	W	S	User Description (record device type and device connected)
35	35	4-3 (VB)	D, P	D, P	D, P	
36	36	4-2 (VB)	D, P	D, P	D, P	
37	37	4-1 (VB)	D, P	D, P	D, P	
38	38	1-1 (VA)	D, P	D, P	D, P	
39	39	1-2 (VA)	D, P	D, P	D, P	
40	40	1-3 (VA)	D, P	D, P	D, P	
41	41	1-4 (VA)	D, P	D, P	D, P	
42	42	2-1 (VA)	D, P	D, P	D, P	
43	43	2-2 (VA)	D, P	D, P	D, P	
44	44	2-3 (VA)	D, P	D, P	D, P	
45	45	2-4 (VA)	D, P	D, P	D, P	
46	46	3-1 (VA)	D	D	D	
47	47	3-2 (VA)	D	D	D	
48	48	3-3 (VA)	D, P	D, P	D, P	
49	49	3-4 (VA)	D	D	D	
50	50	N/A	N/C	N/C	D, P†	
51	51	N/A	N/C	N/C	D, P†	
52	52	N/A	N/C	N/C	D, P†	
53	53	N/A	N/C	N/C	D, P†	
A0	67	A0	A, D	A, D	A, D	
A1	68	A1	A, D, P	A, D, P	A, D, P	
A2	69	A2	A, D, P	A, D, P	A, D, P	
A3	70	A3	A, D	A, D	A, D	
A4	71	A4	A, D	A, D	A, D	
A5	72	A5	A, D	A, D	A, D	
A6	73	A6	A, D	A, D	A, D	
A7	74	A7	A, D	A, D	A, D	
A8	54	A8	A, D	A, D	A, D	
A9	55	A9	A, D	A, D	A, D	
A10	56	A10	A, D	A, D	A, D	
A11	57	A11	A, D	A, D	A, D	
A12	58	A12	A, D, P	A, D, P	A, D, P	
A13	59	A13	A, D	A, D	A, D	
A14	60	A14	A, D	A, D	A, D	
A15	61	A15	A, D, P	A, D, P	A, D, P	

BruControl Interface Wiring Map: Adafruit Grand Central M4 (Firmware v46)

Connection ->	TCP (Network)		Serial	<- Connection
Wiring Map ->	Default	Wi-Fi	Default	<- Wiring Map
Firmware Prefix ->	BruControl.46_.GrandCentral.			<- Firmware Prefix
Firmware Suffix ->				<- Firmware Suffix
Interface pin # / **BruControl port #** / **UniShield UM-1 Terminal**	E	W	S	**User Description** (record device type and device connected)

BruControl Interface Wiring Map: Adafruit Grand Central M4 (Firmware v46)

Notes / Key

Instructions: Select the column for firmware used. Wire each interface pin per possible input/outputs. Select device's corresponding port in BruControl.

Default Ethernet (E) shield/boards must be Wiznet 5500 based. Wi-Fi (W) shields/boards must be Atmel WINC1500 based.

Interface Wiring Map Codes:

D = Digital Input or Digital Output (Note: Input can be 3.3V active high or low, output is 3.3V).

*Digital Output only. †should not be used for RTD device CS pins. ‡should not be wired if network shield has an SD card slot.

P = PWM Output (Note: Output is 3.3V peak. Frequency is ~500 or ~1000 Hz. Create Analog Output using RC filter or Analog Amplifier Board).

C = Counter Input (Note: trigger is falling edge. Sensor must pull up/down 3.3V, otherwise an external resistor is needed).

A = Analog Input (Note: range is compared to AREF, which is tied to 3.3V... also 3.3V is maximum input).

O = 1-Wire Input (Note: all 1-wire data pins must be tied to only one interface pin. All sensors are addressed by virtual ports 200 - 209 in BruControl).

L = Onboard LED (Note: connecting to "Active Low" or "Low Trigger" relay board may light LED when device is disabled in BruControl).

Duty Cycle and Hysteresis devices are available on Digital Output (D) ports.

RTD device (via SPI communications) CS pins may be wired to any pin/port where Digital Output (D) is available. Wire CS pin from each individual amp to these pins.

PID and Deadband devices are available on both Digital Output (D) and PWM Output (P) ports. For proportional devices, use port with PWM (P) output.

Analog Reference pin (AREF) should be tied to +3.3V or less to measure analog voltage inputs.

Maximum current (sink or source) per pin is 8mA. Recommend <5mA. Total current from all concurrent I/O max is 150 mA.

BruControl Interface Wiring Map: ESP32 (Firmware v46)					
	Connection ->	TCP (Network)	Serial (USB)	<- Connection	
	Wiring Map ->	Default		<- Wiring Map	
	Firmware Prefix ->	BruControl.46_.ESP32.		<- Firmware Prefix	
	Firmware Suffix ->			<- Firmware Suffix	
Interface GPIO #	BruControl port #	UniShield UUE-1 Terminal	W		User Description (record device type and device connected)
0	N/A	1-3 (VA)	D, O, P		
1	N/A	N/A	N/C		
2	2	1-2 (VA)	D, O, P		
3	3	N/A	D, P		
4	4	1-4 (VA)	D, O, P, C		
5	5	6-2 (VB)	D, O		
6	N/A	N/A	N/C		
7	N/A	N/A	N/C		
8	N/A	N/A	N/C		
9	N/A	N/A	N/C		
10	N/A	N/A	N/C		
11	N/A	N/A	N/C		
12	12	2-2 (VA)	D, O, P, C†		
13	13	2-1 (VA)	D, O, P, C		
14	14	2-3 (VA)	D, O, P, C		
15	15	1-1 (VA)	D, O, P, C		
16	16	6-4 (VB)	D, P, C		
17	17	6-3 (VB)	D, P, C		
18	18	6-1 (VB)	D, C, [SPI CLK]		
19	19	5-4 (VB)	D, [SPI MISO]		
20	N/A	N/A	N/C		
21	N/A	N/A	[SDA]		
22	N/A	N/A	[SCL]		
23	23	5-1 (VB)	D, [SPI MOSI]		
24	N/A	N/A	N/C		
25	25	3-2 (VA)	D, P		
26	26	3-1 (VA)	D, P		
27	27	2-4 (VA)	D, P		
28	N/A	N/A	N/C		
29	N/A	N/A	N/C		
30	N/A	N/A	N/C		
31	N/A	N/A	N/C		
32	32	3-4 (VA)	D, P, A		
33	33	3-3 (VA)	D, P, A		
34	34	4-3*	D*, A		

BruControl Interface Wiring Map: ESP32 (Firmware v46)					
Connection ->		TCP (Network)	Serial (USB)	<- Connection	
Wiring Map ->		Default		<- Wiring Map	
Firmware Prefix ->		BruControl.46_.ESP32.		<- Firmware Prefix	
Firmware Suffix ->				<- Firmware Suffix	
Interface GPIO #	BruControl port #	UniShield UUE-1 Terminal	W		User Description (record device type and device connected)
35	35	4-4*	D*, A		
36	36	4-1*	D*, A		
37	N/A	N/A	N/C		
38	N/A	N/A	N/C		
39	39	4-2*	D*, A		

Notes / Key

Instructions: Wire each GPIO per possible input/outputs. Select device's corresponding port in BruControl.

ESP32 Wi-Fi is internal based. Will also connect via Serial (USB) connection.

Interface Wiring Map Codes:

D = Digital Input or Digital Output (Note: Input can be 3.3V active high or low, output is 3.3V). * indicates Digital Input only (Use P terminals on UniShield only).

P = PWM Output (Note: Output is 3.3V peak. Frequency is ~1000 Hz. Create Analog Output using RC filter or Analog Amplifier Board).

C = Counter Input (Note: trigger is falling edge. Sensor must pull up/down 3.3V, otherwise an external resistor is needed).

A = Analog Input (Note: range is compared to 3.3V, referenced to ground). 3.3V maximum input.

O = 1-Wire Input (Note: all 1-wire data pins must be tied to only one interface pin. All sensors are addressed by virtual ports 200 - 209 in BruControl).

Local LCD wiring: SDA is GPIO#21 and SCL is GPIO#22.

Duty Cycle and Hysteresis devices use a Digital Output (D).

RTD device (via SPI communications) CS pins may be wired to any pin/port where Digital Output (D) is available. Wire CS pin from each individual amp to these pins.

PID and Deadband devices on pins with both Digital (D) and PWM Output (P) will use PWM Output.

For binary switches (e.g. SSR), select pin without PWM Output (P).

Wire physical pin matching GPIO # for specific ESP32 module, as may differ across board brands & models.

Some GPIO# may not have physical pins on some ESP32 modules (e.g. GPIO 6-11).

† ESP32 will not boot if pin is high (3.3V) during start-up.

Absolute maximum current (sink or source) per pin is 12mA. Recommend to keep each equal or less than 6 mA .

BruControl Interface Wiring Map: ESP8266 & 8285 (Firmware v46)			
Connection ->	TCP (Network)	Serial (USB)	<- Connection
Wiring Map ->	Default		<- Wiring Map
Firmware Prefix ->	BruControl.46_.ESP8266.		<- Firmware Prefix
Firmware Suffix ->			<- Firmware Suffix
Interface GPIO #	BruControl port #	W	User Description (record device type and device connected)
0	N/A	D, O, P	
1	N/A	N/C	
2	2	D, O, P, C	
3	N/A	N/C	
4	4	D, O, P, C	
5	5	D, O, P	
6	N/A	N/C	
7	N/A	N/C	
8	N/A	N/C	
9	N/A	N/C	
10	N/A	N/C	
11	N/A	N/C	
12	12	D, O, P, C	
13	13	D, O, P	
14	14	D, O, P, C	
15	15	D, O, P	
16	16	D, P	
A0	17	A	
Notes / Key			

Instructions: Wire each GPIO per possible input/outputs. Select device's corresponding port in BruControl.

ESP8266 Wi-Fi is internal based. Will also connect via Serial (USB) connection.

Interface Wiring Map Codes:

D = Digital Input or Digital Output (Note: Input can be 3.3V active high or low, output is 3.3V)

P = PWM Output (Note: Output is 3.3V peak. Frequency is ~500 or ~1000 Hz. Create Analog Output using RC filter or Analog Amplifier Board).

C = Counter Input (Note: trigger is falling edge. Sensor must pull up/down 3.3V, otherwise an external resistor is needed)

A = Analog Input (Note: range is compared to 1.0V… range is 0 - 1.0V max)

O = 1-Wire Input (Note: all 1-wire data pins must be tied to only one interface pin. All sensors are addressed by virtual ports 200 - 209 in BruControl).

Local LCD pins are not default GPIO#4/5. Wire as SDA: GPIO#13 and SCL: GPIO#14.

Duty Cycle and Hysteresis devices use a Digital Output (D).

RTD device (via SPI communications) CS pins may be wired to any pin/port where Digital Output (D) is available. Wire CS pin from each individual amp to these pins.

PID and Deadband devices on pins with both Digital (D) and PWM Output (P) will use PWM Output.

For binary switches (e.g. SSR), select pin without PWM Output (P).

Wire physical pin matching GPIO # for specific ESP8266 module, since this varies across different board brands & models.

Note: Some GPIO# may not have physical pins on some ESP8266 modules (e.g. GPIO 6-11) or may be pre-wired to other devices.

Maximum current (sink or source) per pin is 12mA. Recommend to keep each equal or less than 5mA .

		BruControl Interface Wiring Map: Adafruit Feather M0 (Firmware v46)				
Connection ->		TCP (Network)	TCP (Network)	Serial	<- Connection	
Wiring Map ->		Ethernet	Default	Default	<- Wiring Map	
Firmware Prefix ->		BruControl.46.FeatherM0.			<- Firmware Prefix	
Firmware Suffix ->					<- Firmware Suffix	
Interface pin #	BruControl port #	E	W	S	UniShield UF-1 Location	User Description (record device type and device connected)
0	0	D, A, O, P	D, A, O, P	D, A, O, P	2-6	
1	1	D, A, O, P	D, A, O, P	D, A, O, P	2-5	
2	2	D, O, P	N/C	D, O, P	N/A	
4	4	D, O, P	N/C	D, O, P	N/A	
5	5	D, O, P	D, O, P	D, O, P	1-7	
6	6	D, O, P	D, O, P	D, O, P	1-6	
7	7	D, O, P	N/C	D, O, P	N/A	
8†	8†	D, O, P, C	N/C	D, O, P	N/A	
9**	9**	D, A, O, P	D, A, O, P	D, A, O, P	1-5	
10	10	N/C	D, O, P, C	D, O, P, C	1-2	
11	11	D, O, P, C	D, O, P, C	D, O, P, C	1-1	
12	12	D, O, P, C	D, O, P, C	D, O, P, C	1-3	
13	13	D*, P, C, L	D*, P, C, L	D*, P, C, L	1-4	
A0 / 14	14	D, A, O	D, A, O	D, A, O	2-2	
A1 / 15	15	D, A, O	D, A, O	D, A, O	2-1	
A2 / 16	16	D, A	D, A	D, A	2-3	
A3 / 17	17	D, A	D, A	D, A	2-4	
A4 / 18	18	D, A	D, A	D, A	2-8	
A5 / 19	19	D, A	D, A	D, A	2-7	
20	20	D	D, P	D	JP7-2	
21	21	D	D, P	D	JP7-1	
22	22	N/C	N/C	D‡	JP5-6	
23	23	N/C	N/C	D‡	JP5-5	
24	24	N/C	N/C	D‡	JP5-4	
Notes / Key						

Instructions: Select the column for firmware used. Wire each interface pin per possible input/outputs. Select device's corresponding port in BruControl.

Default Ethernet (E) shield/boards must be Wiznet 5100 or 5500 based. Wi-Fi (W) shields/boards must be Atmel WINC1500 based.

Interface Wiring Map Codes:

D = Digital Input or Digital Output (Note: Input can be 3.3V active high or low, output is 3.3V). * indicates Digital Output only.

P = PWM Output (Note: Output is 3.3V peak. Frequency is ~500 or ~1000 Hz. Create Analog Output using RC filter or Analog Amplifier Board).

C = Counter Input (Note: trigger is falling edge. Sensor must pull up/down 3.3V, otherwise an external resistor is needed).

A = Analog Input (Note: range is compared to AREF, which is tied to 3.3V… also 3.3V is maximum input).

O = 1-Wire Input (Note: all 1-wire data pins must be tied to only one interface pin. All sensors are addressed by virtual ports 200 - 209 in BruControl).

L = Onboard LED (Note: connecting to "Active Low" or "Low Trigger" relay board may light LED when device is disabled in BruControl).

† Indicates this pin must not be used if M0 module has WiFi onboard

‡ Indicates may be used only if no SPI communications are used (Wi-Fi, Ethernet, or RTD Input)

** This pin may be used as an analog input but has an existing resistor divider on it for battery measurement.

Duty Cycle and Hysteresis devices use a Digital Output (D).

RTD device (via SPI communications) CS pins may be wired to any pin/port where Digital Output (D) is available. Wire CS pin from each individual amp to these pins.

PID and Deadband devices are available on both Digital Output (D) and PWM Output (P) ports. For proportional devices, use port with PWM (P) output.

For binary switches (e.g. SSR), select pin without PWM Output (P).

Note pin A0's PWM output mode is true 10 bit analog, not PWM.

Analog Reference pin (AREF) should be tied to +3.3V or less to measure analog voltage inputs.

Maximum current (sink or source) per pin is 7mA. Recommend to keep each equal or less than 5mA .