BruControl Interface Wiring Map: Arduino MEGA 2560 (Firmware v43)									
Connection ->		TCP (Network)					Serial (USB)		<- Connection
Wiring Map ->		Default	Wi-Fi	Yun	Default or Yun w/RTD	Wi-Fi w/RTD	w/RTD	Default	<- Wiring Map
Firmware Prefix ->		BruControl.43.MEGA.							<- Firmware Prefix
Firmware Suffix ->		E / F	W	Y	ER / FR / YR	WR	SR	S	<- Firmware Suffix
Interface pin #	BruControl port #								User Description (record device type and device connected)
0	N/A	N/C	N/C	N/C	N/C	N/C	N/C	N/C	
1	N/A	N/C	N/C	N/C	N/C	N/C	N/C	N/C	
2	2	D, C, P	D, C, P	D, C, P	D, C, P	D, C, P	D, C, P	D, C, P	
3	3	D, C, P	D, C, P	D, C, P	D, C, P	D, C, P	D, C, P	D, C, P	
4	4	D, P	D, P	D, P	D, P	D, P	D, P	D, P	
5	5	D, P, O*	N/C	D, P, O*	D, P, O*	N/C	D, P, O*	D, P, O*	
6	6	D, P	D, P, O*	D, P	D, P	D, P, O*	D, P	D, P	
7	7	D, P	N/C	D, P	D, P	N/C	D, P	D, P	
8	8	D, P	D, P	D, P	D, P	D, P	D, P	D, P	
9	9	D, P	D, P	D, P	D, P	D, P	D, P	D, P	
10	10	N/C	N/C	D, P	N/C	N/C	N/C	D, P	
11	11	D, P	D, P	D, P	D, P	D, P	D, P	D, P	
12	12	D, P	D, P	D, P	D, P	D, P	D, P	D, P	
13	13	D, P, L	D, P, L	D, P, L	D, P, L	D, P, L	D, P, L	D, P, L	
14	14	D	D	D	D, R	D, R	D, R	D	
15	15	D	D	D	D, R	D, R	D, R	D	
16	16	D	D	D	D, R	D, R	D, R	D	
17	17	D	D	D	D, R	D, R	D, R	D	
18	18	D, C	D, C	D, C	D, C	D, C	D, C	D, C	
19	19	D, C	D, C	D, C	D, C	D, C	D, C	D, C	
20	N/A	N/C	N/C	N/C	N/C	N/C	N/C	N/C	
21	N/A	N/C	N/C	N/C	N/C	N/C	N/C	N/C	
22	22	D	D	D	D	D	D	D	
23	23	D	D	D	D	D	D	D	
24	24	D	D	D	D	D	D	D	
25	25	D	D	D	D	D	D	D	
26	26	D	D	D	D	D	D	D	
27	27	D	D	D	D	D	D	D	
28	28	D	D	D	D	D	D	D	

BruControl Interface Wiring Map: Arduino MEGA 2560 (Firmware v43)									
Connection ->		TCP (Network)					Serial (USB)		<- Connection
Wiring Map ->		Default	Wi-Fi	Yun	Default or Yun w/RTD	Wi-Fi w/RTD	w/RTD	Default	<- Wiring Map
Firmware Prefix ->		BruControl.43.MEGA.							<- Firmware Prefix
Firmware Suffix ->		E / F	W	Y	ER / FR / YR	WR	SR	S	<- Firmware Suffix
Interface pin #	BruControl port #								User Description (record device type and device connected)
29	29	D	D	D	D	D	D	D	
30	30	D	D	D	D	D	D	D	
31	31	D	D	D	D	D	D	D	
32	32	D	D	D	D	D	D	D	
33	33	D	D	D	D	D	D	D	
34	34	D	D	D	D	D	D	D	
35	35	D	D	D	D	D	D	D	
36	36	D	D	D	D	D	D	D	
37	37	D	D	D	D	D	D	D	
38	38	D	D	D	D	D	D	D	
39	39	D	D	D	D	D	D	D	
40	40	D	D	D	D	D	D	D	
41	41	D	D	D	D	D	D	D	
42	42	D	D	D	D	D	D	D	
43	43	D	D	D	D	D	D	D	
44	44	D, P	D, P	D, P	D, P	D, P	D, P	D, P	
45	45	D, P	D, P	D, P	D, P	D, P	D, P	D, P	
46	46	D, P	D, P	D, P	D, P	D, P	D, P	D, P	
47	47	D	D	D	D	D	D	D	
48	48	D	D	D	D	D	D	D	
49	49	D	D	D	D	D	D	D	
50	50	N/C	N/C	D	N/C	N/C	N/C	D	
51	51	N/C	N/C	D	N/C	N/C	N/C	D	
52	52	N/C	N/C	D	N/C	N/C	N/C	D	
53	53	N/C	N/C	D	N/C	N/C	N/C	D	
A0	100	A	A	A	A	A	A	A	
A1	101	A	A	A	A	A	A	A	
A2	102	A	A	A	A	A	A	A	
A3	103	A	A	A	A	A	A	A	

BruControl Interface Wiring Map: Arduino MEGA 2560 (Firmware v43)									
Connection ->		TCP (Network)					Serial (USB)		<- Connection
Wiring Map ->		Default	Wi-Fi	Yun	Default or Yun w/RTD	Wi-Fi w/RTD	w/RTD	Default	<- Wiring Map
Firmware Prefix ->		BruControl.43.MEGA.							<- Firmware Prefix
Firmware Suffix ->		E / F	W	Y	ER / FR / YR	WR	SR	S	<- Firmware Suffix
Interface pin #	BruControl port #								User Description (record device type and device connected)
A4	104	A	A	A	A	A	A	A	
A5	105	A	A	A	A	A	A	A	
A6	106	A	A	A	A	A	A	A	
A7	107	A	A	A	A	A	A	A	
A8	108	A	A	A	A	A	A	A	
A9	109	A	A	A	A	A	A	A	
A10	110	A	A	A	A	A	A	A	
A11	111	A	A	A	A	A	A	A	
A12	112	A	A	A	A	A	A	A	
A13	113	A	A	A	A	A	A	A	
A14	114	A	A	A	A	A	A	A	
A15	115	A	A	A	A	A	A	A	

Notes / Key

Instructions: Select the column for firmware used. Wire each interface pin per possible input/outputs. Select device's corresponding port in BruControl.
Ethernet 1 (E) shield/boards are Wiznet 5100 based, Ethernet 2 (F) shield/boards are Wiznet 5500 based. Wi-Fi (W) shields/boards are WINC1500 based.
For firmware with RTD capability, all RTD Input pins are pulled HIGH on start-up. Do not wire other I/O to these pins if not appropriate for hardware.

Interface Wiring Map Codes:

D = Digital Input or Digital Output (Note: Input can be 5V active high or low, output is 5V)
P = PWM Output (Note: Output is 5V peak. Frequency is ~500 or ~1000 Hz. Create Analog Output using RC filter or RC/op-amp.)
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 max)
O = 1-Wire Input (*Note: all 1-wire data pins must be tied to pin 5 or 6 per above only but are addressed by virtual ports 200 - 209 in BruControl).
R = RTD Input (via SPI board). Wire CS pin from each individual boards to these pins only. Other board pins wired in parallel - see RTD schematic.
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 use a Digital Output (D).
PID 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).
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 .