

Raspberry Pi

Pin #	Connection	Raspberry Pi 3 B+ GPIO Header				Pin #	Connection
1	3.3V Supply to ATmega	Pin#	NAME	NAME	Pin#	2	5V supply for Pi
3	I2C - ATmega/Pi	01	3.3v DC Power	DC Power 5v	02	4	5V supply for Pi
5	I2C - ATmega/Pi/	03	GPIO02 (SDA1 , I ² C)	DC Power 5v	04	6	GND
7		05	GPIO03 (SCL1 , I ² C)	Ground	06	8	
9	GND	07	GPIO04 (GPIO_GCLK)	(TXD0) GPIO14	08	10	
11		09	Ground	(RXD0) GPIO15	10	12	Temp sensor - Load bank electronics
13		11	GPIO17 (GPIO_GEN0)	(GPIO_GEN1) GPIO18	12	14	GND
15		13	GPIO27 (GPIO_GEN2)	Ground	14	16	Extra pin 4
17	3.3V Supply to ATmega	15	GPIO22 (GPIO_GEN3)	(GPIO_GEN4) GPIO23	16	18	
19	Extra pin to board side connector	17	3.3v DC Power	(GPIO_GEN5) GPIO24	18	20	GND
21	Extra pin to board side connector	19	GPIO10 (SPI_MOSI)	Ground	20	22	
23	Extra pin to board side connector	21	GPIO09 (SPI_MISO)	(GPIO_GEN6) GPIO25	22	24	
25	GND	23	GPIO11 (SPI_CLK)	(SPI_CE0_N) GPIO08	24	26	
27		25	Ground	(SPI_CE1_N) GPIO07	26	28	
29	Temp sensor - Fuel cell	27	ID_SD (I ² C ID EEPROM)	(I ² C ID EEPROM) ID_SC	28	30	GND
31	Temp sensor - Load bank power section	29	GPIO05	Ground	30	32	Warning LED/buzzer output
33	PWM output for fan speed control	31	GPIO06	GPIO12	32	34	GND
35		33	GPIO13	Ground	34	36	
37	Safety Stop Interrupt to ATmega	35	GPIO19	GPIO16	36	38	
39	GND	37	GPIO26	GPIO20	38	40	
		39	Ground	GPIO21	40		
		Raspberry Pi 3 B+ PoE Header					
		01	TR01	TR00	02		
		03	TR03	TR02	04		
		Rev. 1 08/03/2018 CGS					
		www.element14.com/RaspberryPi					

Atmel ATMega 328P

Pin #	Connection	Pin #	Connection
1	ISP Programmer	28	I2C - ATmega/Pi
2		27	I2C - ATmega/Pi/
3		26	
4	Safety Stop Interrupt From Pi	25	Voltage divider - Battery voltage
5		24	Voltage divider - Fuel cell voltage
6		23	Current sensor input
7	3.3V supply voltage for ATmega	22	GND
8	GND supply for ATmega	21	
9		20	3.3V supply voltage for ATmega
10		19	ISP Programmer
11		18	ISP Programmer
12	PWM fan control (Backup option)	17	ISP Programmer
13	Air starve relay	16	PWM output for conditioning load
14		15	