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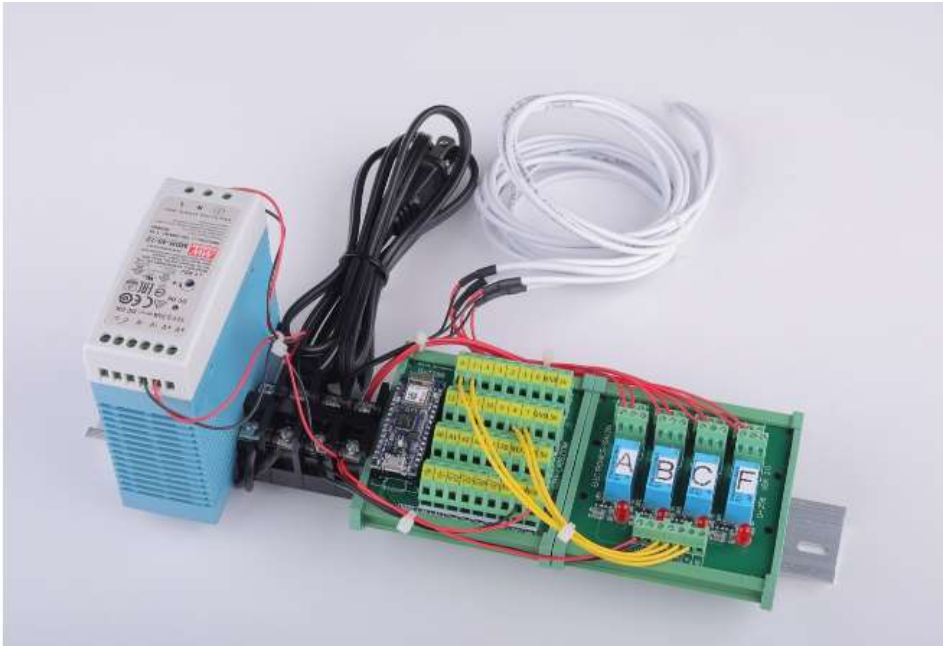
Brain (Valve,Fan and Programming) WorkFlow

Version 1.0



Change History Log:

VERSION #	REVISION DATE	DESCRIPTION OF CHANGE	
		FROM	TO
1.0	11/27/2020	Original Release	

I. Purpose:

This Workflow is intended to serve as a guide in the wirings of the Brain in the Oxikit. The Brain is an open source hardware/software that serves as the programming platform for the Oxikit.

II. Scope:

This guideline applies to all individuals who wish to build the DIY Oxikit. It includes the Materials, tools and the Video Link needed in wiring of the Brain.

III. Picture:

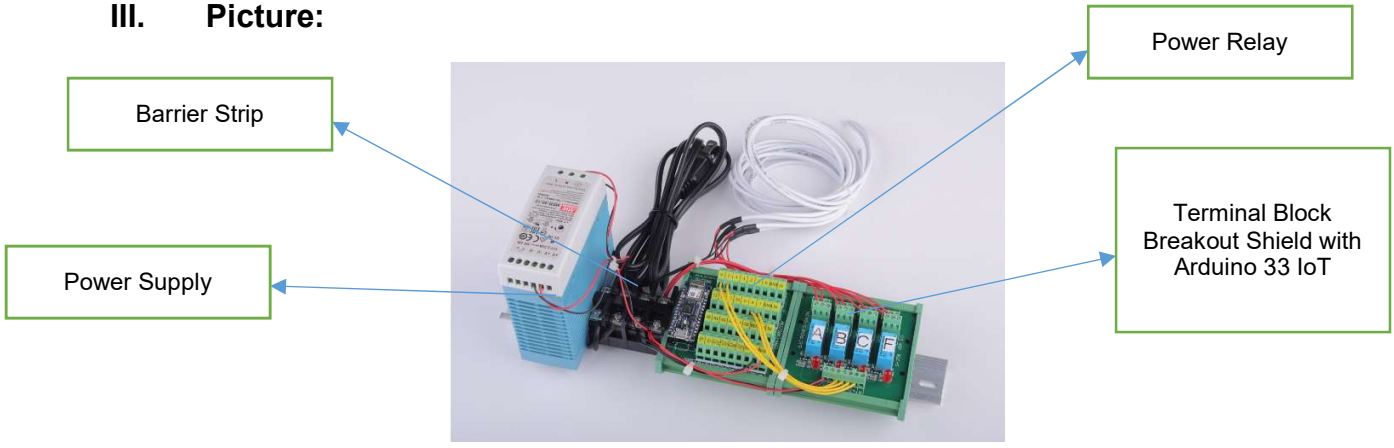


Fig 1.0 (Brain Assembly)

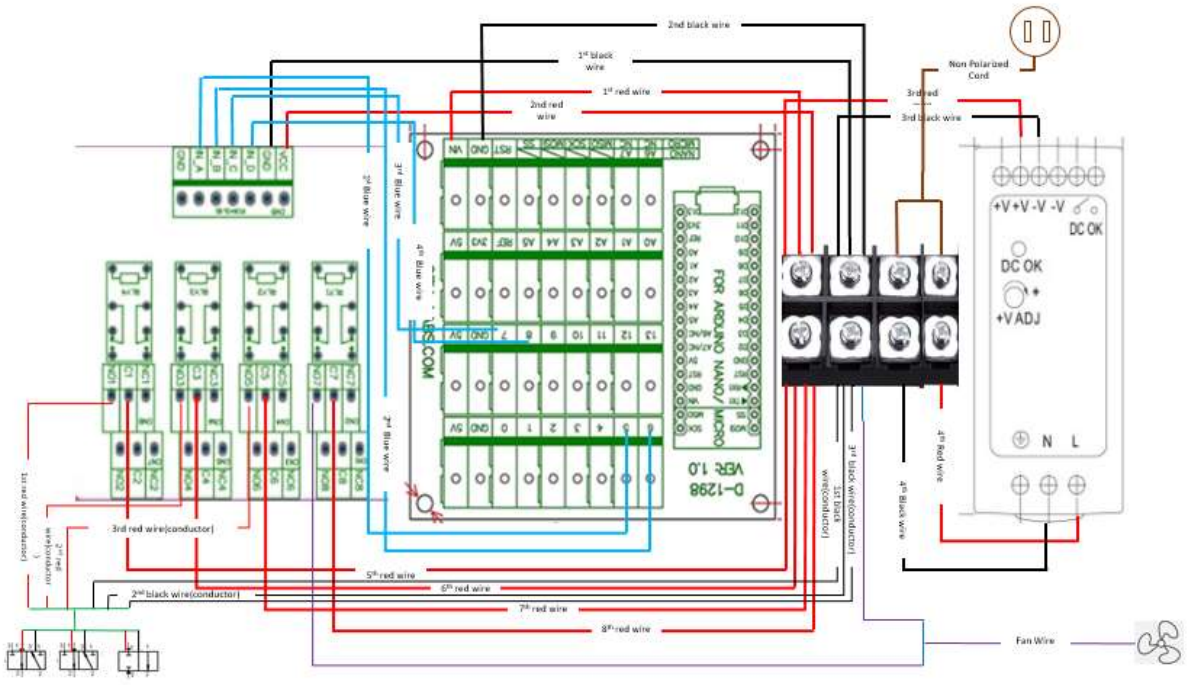


Fig 2.0 Brain Wiring Diagram

IV. Safety Operating Conditions:

- Always wear protective gloves

V. Workflows

- Please see next page for the step by step guidelines in wiring the Brain Assembly.

Brain Assembly

Steps	Process	Material	Tools

1	Connect the Arduino IoT 33 to the Terminal Block Breakout Shield	Name	Description	Metric Conversion	Unit of Measure	
		Arduino 33 IoT	Arduino 33 IoT (Option 1 for Arduino Processor)	Arduino 33 IoT (Option 1 for Arduino Processor)	Unit	
		Terminal Block Breakout Shield Nano/Micro	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	Unit	

2	Snap in the Arduino IoT 33 and Terminal Block Breakout Shield assembly into the DIN Rail Mount	Name	Description	Metric Conversion	Unit of Measure	
		DIN Rail Mount	DIN Rail Mount	DIN Rail Mount	Unit	
		Arduino 33 IoT	Arduino 33 IoT (Option 1 for Arduino Processor)	Arduino 33 IoT (Option 1 for Arduino Processor)	Unit	
		Terminal Block Breakout Shield Nano/Micro	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino	Unit	

Steps	Process	Material	Tools

Steps	Process	Material	Tools
3	Snap in the Power Relay Interface Board into the DIN Rail Mount		

Name	Description	Metric Conversion	Unit of Measure
DIN Rail Mount	DIN Rail Mount	DIN Rail Mount	Unit
Power Supply 12V	Power Supply 12V 3.33 Amp 40W - MDR-40-12 AC to DC DIN-Rail (Option 2 for Power supply)	Power Supply 12V 3.33 Amp 40W - MDR-40-12 AC to DC DIN-Rail (Option 2 for Power supply)	Unit

Steps	Process	Material	Tools
4	Snap in the Barrier Strip into the DIN Rail Mount		

Name	Description	Metric Conversion	Unit of Measure
Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit
DIN Rail Mount	DIN Rail Mount	DIN Rail Mount	Unit

Steps	Process	Material	Tools

Steps	Process	Material	Tools
5	Snap in the power supply into the DIN Rail Mount		

Name	Description	Metric Conversion	Unit of Measure
DIN Rail Mount	DIN Rail Mount	DIN Rail Mount	Unit
Power Supply 12V	Power Supply 12V 3.33 Amp 40W - MDR-40-12 AC to DC DIN-Rail (Option 2 for Power supply)	Power Supply 12V 3.33 Amp 40W - MDR-40-12 AC to DC DIN-Rail (Option 2 for Power supply)	Unit

Steps	Process	Material	Tools
6	Unscrew the output terminals of the Terminal Block Breakout Shield, and the screws in the Power Relay Interface Board		Screwdriver

Name	Description	Metric Conversion	Unit of Measure
Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit
Terminal Block Breakout Shield Nano/Micro	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro.	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro.	Unit

Steps	Process	Material				Tools
7	Strip the tip of a Red Wire	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
8	Connect the Red Wire into the 12 Volt position in the Terminal Block Breakout shield with labelled VIN See Fig 2.0	Name	Description	Metric Conversion	Unit of Measure	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Terminal Block Breakout Shield Nano/Micro	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	Unit	

Steps	Process	Material	Tools
9	Tighten the screw to put the Red Wire in place		Screwdriver

Name	Description	Metric Conversion	Unit of Measure
Terminal Block Breakout Shield Nano/Micro	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	Unit
Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter

Steps	Process	Tools
10	Cut the other end of the Red wire. Ensure the length of the Red Wire will reach the Barrier Strip around 3"-4"	Wire Cutter Pliers

Name	Description	Metric Conversion	Unit of Measure
Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter
Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit

Steps	Process	Material			Tools
11	Strip the tip of a 2nd Red Wire	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
12	Connect 2nd Red Wire to the VCC terminal in the Power Relay Interface Board.	Name	Description	Metric Conversion	Unit of Measure	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	

Steps	Process	Material			Tools
13	Tighten the screw to put the 2nd Red Wire in place	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	
14	Cut the other end of the Red wire. Ensure the length of the Red Wire will reach the Barrier Strip around 4"-5"	Name	Description	Metric Conversion	Unit of Measure	Wire Cutter Pliers
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit	

Steps	Process	Material				Tools
15	Strip the tip of a 3rd Red Wire	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
16	Connect 3rd Red Wire to the +V terminal in the Power Supply Board	Name	Description	Metric Conversion	Unit of Measure	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Supply 12V	Power Supply 12V 3.33 Amp 40W - MDR-40-12 AC to DC DIN-Rail (Option 2 for Power supply)	Power Supply 12V 3.33 Amp 40W - MDR-40-12 AC to DC DIN-Rail (Option 2 for Power supply)	Unit	

Steps	Process	Material			Tools
17	Tighten the screw to put the 3rd Red Wire in place	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Supply 12V	Power Supply 12V 3.33 Amp 40W - MDR-40-12 AC to DC DIN-Rail (Option 2 for Power supply)	Power Supply 12V 3.33 Amp 40W - MDR-40-12 AC to DC DIN-Rail (Option 2 for Power supply)	Unit	
18	Strip the other ends of all Red wires (1st-3rd wire)	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	

Steps	Process	Material			Tools
19	Connect all Red wires (1st-3rd wire) to the positive side of the 1st upper terminal of the Barrier Strip	Name	Description	Metric Conversion	Unit of Measure	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit	
20	Tighten the screws to put all Red wires (1st-3rd wire) in place	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit	

Steps	Process	Material				Tools
21	Strip the tip of a Black Wire	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
22	Connect the Black Wire into the ground section of the Power Relay Interface Board. next to the VCC Terminal or marked as GND	Name	Description	Metric Conversion	Unit of Measure	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	

Steps	Process	Material			Tools
23	Tighten the screw to put the Black Wire in place	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	
24	Cut the other end of the Black Wire. Ensure the length of the wire will reach the Barrier Strip around 4"-5"	Name	Description	Metric Conversion	Unit of Measure	Wire Cutter Pliers
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit	

Steps	Process	Material				Tools
25	Strip the tip of a 2nd Black Wire	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
26	Connect the 2nd Black Wire into the ground section in the Terminal Block Breakout Shield labelled GND	Name	Description	Metric Conversion	Unit of Measure	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Terminal Block Breakout Shield Nano/Micro	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	Unit	

Steps	Process	Material			Tools
27	Tighten the screw to put the 2nd Black Wire in place	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Terminal Block Breakout Shield Nano/Micro	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	Unit	
28	Strip the tip of a 3rd Black Wire	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	

Steps	Process	Material			Tools
29	Connect 3rd Red Black to the -V terminal in the Power Supply Board	Name	Description	Metric Conversion	Unit of Measure	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Supply 12V	Power Supply 12V 3.33 Amp 40W - MDR-40-12 AC to DC DIN-Rail (Option 2 for Power supply)	Power Supply 12V 3.33 Amp 40W - MDR-40-12 AC to DC DIN-Rail (Option 2 for Power supply)	Unit	
30	Tighten the screw to put the 3rd Red Wire in place	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Supply 12V	Power Supply 12V 3.33 Amp 40W - MDR-40-12 AC to DC DIN-Rail (Option 2 for Power supply)	Power Supply 12V 3.33 Amp 40W - MDR-40-12 AC to DC DIN-Rail (Option 2 for Power supply)	Unit	

Steps	Process	Material			Tools
31	Strip the other ends of all Black wires (1st -3rd wire)	Name	Description	Metric Conversion	Unit of Measure
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter
32	Connect all Black wires (1st-3rd wire) to the negative side of the 2nd upper Terminal of the Barrier Strip	Name	Description	Metric Conversion	Unit of Measure
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter
		Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit

Steps	Process	Material			Tools
33	Tighten the screws to put all Black wires (1st-3rd wire) in place	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit	
34	Strip the tip of a Yellow Wire(blue in Fig 2.)	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	

Steps	Process	Material			Tools
35	Connect the Yellow Wire (blue in Fig 2.)into the Terminal 5 labelled 5 in the Terminal Block Breakout Shield	Name	Description	Metric Conversion	Unit of Measure	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Terminal Block Breakout Shield Nano/Micro	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	Unit	
36	Tighten the screw to putin place the Yellow Wire(blue in Fig 2.)	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	

Steps	Process	Material			Tools
37	Cut the other end of the Yellow Wire(blue in Fig 2.). Ensure the length of the wire will reach the Power Relay Interface Board Terminal A around 4"-5"	Name	Description	Metric Conversion	Unit of Measure	Wire Cutter Pliers
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	
38	Strip the tip of the other end of the Yellow Wire(blue in Fig 2.)	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	

Steps	Process	Material			Tools
39	Connect the other end of the Yellow Wire (blue in Fig 2.) into the Power Relay Interface Board Terminal A	Name	Description	Metric Conversion	Unit of Measure	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	
40	Tighten the screw to put other end of the yellowwire (blue in Fig 2.)in place	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	

Steps	Process	Material				Tools
41	Strip the tip of the 2nd Yellow Wire(blue in Fig 2.)	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
42	Connect the 2nd Yellow Wire(blue in Fig 2.) into the Terminal 6 (labelled 6) of the Terminal Block Breakout Shield	Name	Description	Metric Conversion	Unit of Measure	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Terminal Block Breakout Shield Nano/Micro	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	Unit	

Steps	Process	Material			Tools
43	Tighten the screw to put 2nd Yellow Wire(blue in Fig 2.) in place.	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Terminal Block Breakout Shield Nano/Micro	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	Unit	
44	Cut the other end of the 2nd Yellow Wire(blue in Fig 2.). Ensure the length of the wire will reach the Power Relay Interface Board Terminal B around 4"-5"	Name	Description	Metric Conversion	Unit of Measure	Wire Cutter Pliers
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	

Steps	Process	Material	Tools
45	Strip the tip of the other end of the 2nd yellow wire(blue in Fig 2.)	Name: Electrical Stranded Wire; Description: 22AWG Stranded Wire (Multiple Colors); Metric Conversion: 22AWG Stranded Wire (Multiple Colors); Unit of Measure: Meter	Wire Stripper
46	Connect the other end of the 2nd yellow wire (blue in Fig 2.) into the Power Relay Interface Board Terminal B	Name: Electrical Stranded Wire; Description: 22AWG Stranded Wire (Multiple Colors); Metric Conversion: 22AWG Stranded Wire (Multiple Colors); Unit of Measure: Meter Name: Power Relay Interface 12V; Description: DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts); Metric Conversion: DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts); Unit of Measure: Unit	

Steps	Process	Material			Tools
47	Tighten the screw to put the other end of the 2nd yellow wire(blue in Fig 2.) in place	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	
48	Strip the tip of the 3rd yellow wire(blue in Fig 2.)	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	

Steps	Process	Material			Tools
49	Connect the 3rd Yellow Wire (blue in Fig 2.) into the Terminal 7 (labelled 7) of the Terminal Block Breakout Shield	Name	Description	Metric Conversion	Unit of Measure	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Terminal Block Breakout Shield Nano/Micro	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	Unit	
50	Tighten the screw to put 3rd Yellow Wire (blue in Fig 2.) in place	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	

Steps	Process	Material			Tools
51	Cut the other end of the 3rd Yellow Wire(blue in Fig 2.). Ensure the length of the wire willreach the Power Relay Interface Board Terminal C around 3"-4"	Name	Description	Metric Conversion	Unit of Measure	Wire Cutter Pliers
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	
52	Strip the tip of the other end of the 3rd Yellow Wire(blue in Fig 2.)	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	

Steps	Process	Material			Tools
53	Connect the other end of the 3rd Yellow Wire (blue in Fig 2.) into the Power Relay Interface Terminal C.	Name	Description	Metric Conversion	Unit of Measure	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	
54	Tighten the screw to put other end of the 3rd Yellow Wire(blue in Fig 2.) in place.	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	

Steps	Process	Material				Tools
55	Strip the tip of the 4th Yellow Wire(blue in Fig 2.)	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
56	Connect another 4th Yellow Wire (blue in Fig 2.)into the Terminal 8(labelled 8) of the Terminal Block Breakout Shield	Name	Description	Metric Conversion	Unit of Measure	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Terminal Block Breakout Shield Nano/Micro	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	Unit	

Steps	Process	Material			Tools
57	Tighten the screw to put 4th Yellow Wire in place(blue in Fig 2.)	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Terminal Block Breakout Shield Nano/Micro	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	Unit	
58	Cut the other end of the 4th Yellow Wire(blue in Fig 2.). Ensure the length of the wire will reach the Power Relay Interface Board Terminal D around 3"-4"	Name	Description	Metric Conversion	Unit of Measure	Wire Cutter Pliers
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	

Steps	Process	Material				Tools
59	Strip the tip of the other end of the 4th (blue in Fig 2.)Yellow Wire	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
60	Connect the other end of the 4th Yellow Wire(blue in Fig 2.) into the Power Relay Interface Board Terminal D	Name	Description	Metric Conversion	Unit of Measure	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	

Steps	Process	Material			Tools
61	Tighten the screw to put the other end of the 4th Yellow Wire (blue in Fig 2.)in place	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	
62	Strip the tip a 4th Black wire	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	

Steps	Process	Material			Tools
63	Connect the 4th Black Wire into the Neutral side(labelled N) of the Power Supply Board	Name	Description	Metric Conversion	Unit of Measure	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Supply 12V	Power Supply 12V 3.33 Amp 40W - MDR-40-12 AC to DC DIN-Rail (Option 2 for Power supply)	Power Supply 12V 3.33 Amp 40W - MDR-40-12 AC to DC DIN-Rail (Option 2 for Power supply)	Unit	
64	Tighten the screw of the 4th Black Wire in place	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	

Steps	Process	Material				Tools
65	Strip the tip of the 4th Red wire	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
66	Connect the 4th Red Wire into the Hot/Line side (labelled L) of the Power Supply Board	Name	Description	Metric Conversion	Unit of Measure	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	

Steps	Process	Material			Tools
67	Tighten the screw of the 4th Red Wire in place	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
68	Collect and Cut the 4th Black and Red Wire. Ensure the height of the wires will reach the Barrier Strip around 3"-4"	Name	Description	Metric Conversion	Unit of Measure	Wire Cutter Pliers
		Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	

Steps	Process	Material			Tools
69	Strip the Tips of the other ends of the 4th Black and Red wires	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
70	Connect the other end of the 4th Red Wire to the 4th lower Terminal of the Barrier Strip	Name	Description	Metric Conversion	Unit of Measure	
		Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	

Steps	Process	Material				Tools
71	Connect the other end of the 4th Black Wire to the 3rd lower Terminal of the Barrier Strip	Name	Description	Metric Conversion	Unit of Measure	
		Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
72	Strip the tip of the 5th Red wire	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	

Steps	Process	Material			Tools
73	Connect a 5th Red wire into the power input using the 1st common terminal of the Power Relay Interface Board. This connection is for the valves	Name	Description	Metric Conversion	Unit of Measure
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit
74	Tighten the screw of the 5th red wire in place	Name	Description	Metric Conversion	Unit of Measure
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit
					Screwdriver

Steps	Process	Material				Tools
75	Cut the other end of the 5th Red Wire. Ensure the length of the wire will reach the Barrier Strip around 4"-5"	Name	Description	Metric Conversion	Unit of Measure	Wire Cutter Pliers
		Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
76	Strip the tip of the 6th Red wire	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	

Steps	Process	Material	Tools
77	Connect a 6th Red wire into the power input using the 2nd common terminal of the Power Relay Interface Board. This connection is for the valves		

Name	Description	Metric Conversion	Unit of Measure
Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter
Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit

Steps	Process	Material	Tools
78	Tighten the screw of the 6th red wire in place		Screwdriver

Name	Description	Metric Conversion	Unit of Measure
Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter
Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit

Steps	Process	Material				Tools
79	Cut the other end of the 6th Red Wire. Ensure the length of the wire will reach the Barrier Strip around 4"-5"	Name	Description	Metric Conversion	Unit of Measure	Wire Cutter Pliers
		Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
80	Strip the tip of the 7th Red wire	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	

Steps	Process	Material			Tools
81	Connect a 7th Red wire into the power input using the 3rd common terminal of the Power Relay Interface Board. This connection is for the valves	Name	Description	Metric Conversion	Unit of Measure	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	
82	Tighten the screw of the 7th red wire in place	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	

Steps	Process	Material	Tools
83	Cut the other end of the 7th Red Wire. Ensure the length of the wire will reach the Barrier Strip around 4"-5"		

Name	Description	Metric Conversion	Unit of Measure
Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit
Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter

Steps	Process	Material	Tools
84	Strip the tip of the 8th Red wire		Wire Stripper

Name	Description	Metric Conversion	Unit of Measure
Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter

Steps	Process	Material			Tools
85	Connect a 8th Red Wire into the power input using the 4th common terminal of the Power Relay Interface Board. This connection is for the fan	Name	Description	Metric Conversion	Unit of Measure	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	
86	Tighten the screw of the 8th red wire in place	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	

Steps	Process	Material				Tools
87	Cut the other end of the 8th Red Wire. Ensure the length of the wire will reach the Barrier Strip around 4"-5"	Name	Description	Metric Conversion	Unit of Measure	Wire Cutter Pliers
		Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
88	Strip the other ends of the 5th-8th Red Wires.	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	

Steps	Process	Material			Tools
89	Connect all Red Wires(5th -8th) from the Power Relay Interface Board to the 1st lower terminal of the Barrier Strip	Name	Description	Metric Conversion	Unit of Measure	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	
		Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit	
90	Tighten the screw of all Red Wires in place	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit	
		Electrical Stranded Wire	22AWG Stranded Wire (Multiple Colors)	22AWG Stranded Wire (Multiple Colors)	Meter	

Steps	Process	Material				Tools
91	Cut the end chord of a non Polarized wire	Name	Description	Metric Conversion	Unit of Measure	Wire Cutter Pliers
		Non Polarized cord Brain	Non Polarized cord for the Brain	Non Polarized cord for the Brain	Pieces	
92	Strip the tip of the nonpolarized chord. This will expose 2 wires	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Non Polarized cord Brain	Non Polarized cord for the Brain	Non Polarized cord for the Brain	Pieces	

Steps	Process	Material			Tools
93	Connect one of the non polarized wire into the 3rd upper Terminal of the Barrier Strip	Name	Description	Metric Conversion	Unit of Measure	
		Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit	
		Non Polarized cord Brain	Non Polarized cord for the Brain	Non Polarized cord for the Brain	Pieces	
94	Tighten the screw of the nonpolarized chord in place	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit	
		Non Polarized cord Brain	Non Polarized cord for the Brain	Non Polarized cord for the Brain	Pieces	

Steps	Process	Material				Tools
95	Connect the 2nd wire of the non polarized chord into the 2nd Terminal of the 4th upper Terminal of the Bracket Holder Carrier Clips	Name	Description	Metric Conversion	Unit of Measure	
		Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit	
		Non Polarized cord Brain	Non Polarized cord for the Brain	Non Polarized cord for the Brain	Pieces	
96	Tire wrap all wires in place	Name	Description	Metric Conversion	Unit of Measure	
		4" Cable Ties	4" Black Cable Ties (Bag of 100)	100mm x 4mm Black Cable Ties (Bag of 100)	Bag	

Steps	Process	Material	Tools
97	Plug in the chord		

Name	Description	Metric Conversion	Unit of Measure
Non Polarized cord Brain	Non Polarized cord for the Brain	Non Polarized cord for the Brain	Pieces
Brain Assembly	End Product of the Brain Assembly	End Product of the Brain Assembly	Lot

Steps	Process	Material	Tools
98	Check if the Electronic Brain is functioning well. If there are any malfunction, Redo/recheck all connection of wires		

Name	Description	Metric Conversion	Unit of Measure
Brain Assembly	End Product of the Brain Assembly	End Product of the Brain Assembly	Lot

Valve Wiring

Steps	Process	Material				Tools
99	Unscrew all the DIN Connectors from the 3 units of Solenoid valve	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		DIN Connectors	3- way and 2 -way Solenoid Valve DIN Connectors	3- way and 2 -way Solenoid Valve DIN Connectors	Unit	
		3- way Solenoid Valve	3/8" NPT 3-Way Solenoid Valve, 110 V AC	10mm FNPT 3 Port 2 Way Solenoid Valve, 110/220 VAC 50/60Hz	Unit	
		2- way Solenoid Valve	2/2 Direct Acting Solenoid Valve 1/4" ports 110V AC	Direct Acting Solenoid Valve 10mm ports 110/220VAC 50/60Hz	Unit	

Steps	Process	Material			Tools
100	Remove all Screw Terminal from the 3 units DIN Connectors	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		2- way Solenoid Valve	2/2 Direct Acting Solenoid Valve 1/4" ports 110V AC	Direct Acting Solenoid Valve 10mm ports 110/220VAC 50/60Hz	Unit	
		DIN Connectors	3- way and 2 -way Solenoid Valve DIN Connectors	3- way and 2 -way Solenoid Valve DIN Connectors	Unit	
		DIN Connectors Screw Terminal	3- way and 2 - way Solenoid Valve DIN Connectors Screw Terminal	3- way and 2 - way Solenoid Valve DIN Connectors Screw Terminal	Unit	
		3- way Solenoid Valve	3/8" NPT 3-Way Solenoid Valve, 110 V AC	10mm FNPT 3 Port 2 Way Solenoid Valve, 110/220 VAC 50/60Hz	Unit	

Steps	Process	Material				Tools
101	Strip Conductor wire. This will expose the red and black wires	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Conductor wire	Conductor wire	Conductor wire	meter	
102	Connect the red wire into the right side of the DIN Connector Screw Terminal	Name	Description	Metric Conversion	Unit of Measure	
		DIN Connectors Screw Terminal	3- way and 2 - way Solenoid Valve DIN Connectors Screw Terminal	3- way and 2 - way Solenoid Valve DIN Connectors Screw Terminal	Unit	
		Conductor wire	Conductor wire	Conductor wire	meter	

Steps	Process	Material	Tools
103	Tighten the screw on the Red Wire in place	Name: Conductor wire; Description: Conductor wire; Metric Conversion: Conductor wire; Unit of Measure: meter	Screwdriver
104	Connect the black wire into the left side of the DIN Connector Screw Terminal	Name: DIN Connectors Screw Terminal; Description: 3- way and 2 - way Solenoid Valve DIN Connectors Screw Terminal; Metric Conversion: 3- way and 2 - way Solenoid Valve DIN Connectors Screw Terminal; Unit of Measure: Unit Name: Conductor wire; Description: Conductor wire; Metric Conversion: Conductor wire; Unit of Measure: meter	

Steps	Process	Material				Tools
105	Tighten the screw on the Black Wire in place	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		DIN Connectors Screw Terminal	3- way and 2 - way Solenoid Valve DIN Connectors Screw Terminal	3- way and 2 - way Solenoid Valve DIN Connectors Screw Terminal	Unit	
		Conductor wire	Conductor wire	Conductor wire	meter	
106	Stretch the wires into the PIN	Name	Description	Metric Conversion	Unit of Measure	
		DIN Connectors Screw Terminal	3- way and 2 - way Solenoid Valve DIN Connectors Screw Terminal	3- way and 2 - way Solenoid Valve DIN Connectors Screw Terminal	Unit	
		Conductor wire	Conductor wire	Conductor wire	meter	

Steps	Process	Material	Tools
107	Strip the other end of the conductor wire into the DIN connector		

Name	Description	Metric Conversion	Unit of Measure
DIN Connectors	3- way and 2 -way Solenoid Valve DIN Connectors	3- way and 2 -way Solenoid Valve DIN Connectors	Unit
Conductor wire	Conductor wire	Conductor wire	meter

Steps	Process	Material	Tools
108	Do the same for the other 2 DIN Connector Screw Terminals		

Name	Description	Metric Conversion	Unit of Measure
DIN Connectors	3- way and 2 -way Solenoid Valve DIN Connectors	3- way and 2 -way Solenoid Valve DIN Connectors	Unit
Conductor wire	Conductor wire	Conductor wire	meter

Steps	Process	Material			Tools
109	Attach all DIN Connector Screw Terminal Back into their DIN Connectors	Name	Description	Metric Conversion	Unit of Measure
		DIN Connectors	3- way and 2 -way Solenoid Valve DIN Connectors	3- way and 2 -way Solenoid Valve DIN Connectors	Unit
		DIN Connectors Screw Terminal	3- way and 2 - way Solenoid Valve DIN Connectors Screw Terminal	3- way and 2 - way Solenoid Valve DIN Connectors Screw Terminal	Unit
		Conductor wire	Conductor wire	Conductor wire	meter
110	Attach all DIN Connector back into their respective Solenoid Valves	Name	Description	Metric Conversion	Unit of Measure
		DIN Connectors	3- way and 2 - way Solenoid Valve DIN Connectors	3- way and 2 -way Solenoid Valve DIN Connectors	Unit
		3- way Solenoid Valve	3/8" NPT 3-Way Solenoid Valve, 110 V AC	10mm FNPT 3 Port 2 Way Solenoid Valve, 110/220 VAC 50/60Hz	Unit
		Conductor wire	Conductor wire	Conductor wire	meter

Steps	Process	Material				Tools
111	Strip the other end of the 3 conductor wires around 4"	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Conductor wire	Conductor wire	Conductor wire	meter	
112	Gather all the black wires of the conductor wires	Name	Description	Metric Conversion	Unit of Measure	
		Conductor wire	Conductor wire	Conductor wire	meter	

Steps	Process	Material				Tools
113	Connect all black wires from the conductor wire into the 2nd lower Terminal of the Barrier Strip. This is for the supply voltage of the Power Relay Interface Board	Name	Description	Metric Conversion	Unit of Measure	
		Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit	
		Conductor wire	Conductor wire	Conductor wire	meter	
114	Tighten the screw of the Black Wires from the conductor wire in Place	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit	
		Conductor wire	Conductor wire	Conductor wire	meter	

Steps	Process	Material	Tools
115	Gather all the red wires from the conductor wires	Name: Conductor wire; Description: Conductor wire; Metric Conversion: Conductor wire; Unit of Measure: meter	
116	Connect the 1st red wire from the Conductor Wire into the 1st Normally Open section of the Power Relay Interface Board	Name: Conductor wire; Description: Conductor wire; Metric Conversion: Conductor wire; Unit of Measure: meter Name: Power Relay Interface 12V; Description: DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts); Metric Conversion: DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts); Unit of Measure: Unit	

Steps	Process	Material			Tools
117	Tighten the screw of the 1st Red Wire from the conductor in Place	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Conductor wire	Conductor wire	Conductor wire	meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	
118	Connect the 2nd red wire from the Conductor Wire into the 2nd Normally Open section of the Power Relay Interface Board	Name	Description	Metric Conversion	Unit of Measure	
		Conductor wire	Conductor wire	Conductor wire	meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	

Steps	Process	Material			Tools
119	Tighten the screw of the 2nd Red Wire from the conductor in Place	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Conductor wire	Conductor wire	Conductor wire	meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	
120	Connect the 3rd red wire from the Conductor Wire into the 3rd Normally Open section of the Power Relay Interface Board	Name	Description	Metric Conversion	Unit of Measure	
		Conductor wire	Conductor wire	Conductor wire	meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	

Steps	Process	Material			Tools
121	Tighten the screw of the 3rd Red Wire from the conductor in Place	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Conductor wire	Conductor wire	Conductor wire	meter	
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must match with Power supply volts)	Unit	
122	Plug in the Electronic Brain Assembly with the Solenoid Valves.	Name	Description	Metric Conversion	Unit of Measure	
		3- way Solenoid Valve	3/8" NPT 3-Way Solenoid Valve, 110 V AC	10mm FNPT 3 Port 2 Way Solenoid Valve, 110/220 VAC 50/60Hz	Unit	
		2- way Solenoid Valve	2/2 Direct Acting Solenoid Valve 1/4" ports 110V AC	Direct Acting Solenoid Valve 10mm ports 110/220VAC 50/60Hz	Unit	
		Brain Assembly	End Product of the Brain Assembly	End Product of the Brain Assembly	Lot	

Steps	Process	Material			Tools
123	Check if the Electronic Brain Assembly is functioning well with the solenoid valves. Ensure all corresponding lights in the Power Relay Interface Board connected to the solenoid valves are blinking. If there are any malfunction, redo/recheck all connections	Name	Description	Metric Conversion	Unit of Measure	
		3- way Solenoid Valve	3/8" NPT 3-Way Solenoid Valve, 110 V AC	10mm FNPT 3 Port 2 Way Solenoid Valve, 110/220 VAC 50/60Hz	Unit	
		2- way Solenoid Valve	2/2 Direct Acting Solenoid Valve 1/4" ports 110V AC	Direct Acting Solenoid Valve 10mm ports 110/220VAC 50/60Hz	Unit	
		Brain Assembly	End Product of the Brain Assembly	End Product of the Brain Assembly	Lot	

Fan Wiring

Steps	Process	Material			Tools
124	Connect the cord of the fan into the fan's molded connector	Name	Description	Metric Conversion	Unit of Measure	
		Cooling Fan	120V AC 120mm High Speed Cooling Fan	220/120V AC 120mm High Speed Cooling Fan	Pieces	
		Non Polarized cord Fan	Non Polarized cord of the cooling Fan	Non Polarized cord of the cooling Fan	Pieces	
125	Cut the 2 - prong end of the cord	Name	Description	Metric Conversion	Unit of Measure	Scissors/Cutter
		Non Polarized cord Fan	Non Polarized cord of the cooling Fan	Non Polarized cord of the cooling Fan	Pieces	

Steps	Process	Material				Tools
126	Strip the cord until 2 wires are exposed	Name	Description	Metric Conversion	Unit of Measure	Wire Stripper
		Non Polarized cord Fan	Non Polarized cord of the cooling Fan	Non Polarized cord of the cooling Fan	Pieces	
127	Connect one wire of the Non Polarized Cord into the 2nd lower Terminal of the Barrier Strip	Name	Description	Metric Conversion	Unit of Measure	
		Non Polarized cord Fan	Non Polarized cord of the cooling Fan	Non Polarized cord of the cooling Fan	Pieces	
		Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit	
		Cooling Fan	120V AC 120mm	220/120V AC	Pieces	

Steps	Process	Material			Tools
128	Tighten the screw of the non polarized wire	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Bracket Holder Carrier Clips/Barrier Strip	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	PCB DIN Rail Mounting Adapter Circuit Board Mounting Bracket Holder, Carrier Clips, for 35mm, 15mm DIN Rail (Green)	Unit	
		Cooling Fan	120V AC 120mm High Speed Cooling Fan	220/120V AC 120mm High Speed Cooling Fan	Pieces	
		Non Polarized cord Fan	Non Polarized cord of the cooling Fan	Non Polarized cord of the cooling Fan	Pieces	

Steps	Process	Material			Tools
129	Connect the 2nd wire of the Non Polarized cord into the normally open 4th terminal in the Power Relay Interface Board	Name	Description	Metric Conversion	Unit of Measure
		Non Polarized cord Fan	Non Polarized cord of the cooling Fan	Non Polarized cord of the cooling Fan	Pieces
		Cooling Fan	120V AC 120mm High Speed Cooling Fan	220/120V AC 120mm High Speed Cooling Fan	Pieces
		Power Relay Interface 12V	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must	DIN Rail Mount 4 DPDT Signal Relay Interface Module, DC 12V (Option 2 for Power Relay, must	Unit

Steps	Process	Material				Tools
130	Tighten the screw of the non polarized wire	Name	Description	Metric Conversion	Unit of Measure	Screwdriver
		Non Polarized cord Fan	Non Polarized cord of the cooling Fan	Non Polarized cord of the cooling Fan	Pieces	
		Cooling Fan	120V AC 120mm High Speed Cooling Fan	220/120V AC 120mm High Speed Cooling Fan	Pieces	
		Power Relay Interface 5V	DIN Rail Mount 4 Relay Interface Module, DC 5V Version (Option 1 for Power Relay, must match with Power supply volts)	DIN Rail Mount 4 Relay Interface Module, DC 5V Version (Option 1 for Power Relay, must match with Power supply volts)	Unit	

Steps	Process	Material	Tools

Steps	Process	Material				Tools
131	Plug in the Electronic Brain Assembly with the valve and fan.	Name	Description	Metric Conversion	Unit of Measure	
		Brain Assembly	End Product of the Brain Assembly	End Product of the Brain Assembly	Lot	
		Cooling Fan	120V AC 120mm High Speed Cooling Fan	220/120V AC 120mm High Speed Cooling Fan	Pieces	
		3- way Solenoid Valve	3/8" NPT 3-Way Solenoid Valve, 110 V AC	10mm FNPT 3 Port 2 Way Solenoid Valve, 110/220 VAC 50/60Hz	Unit	
		2- way Solenoid Valve	2/2 Direct Acting Solenoid Valve 1/4" ports 110V AC	Direct Acting Solenoid Valve 10mm ports 110/220VAC 50/60Hz	Unit	

Steps	Process	Material	Tools
132	Check if fan is functioning well. Ensureall corresponding lights in the Power Relay Interface Board connected to the fan is blinking. If there are any malfunction, Redo/recheck all connection of wires		

Name	Description	Metric Conversion	Unit of Measure
Brain Assembly	End Product of the Brain Assembly	End Product of the Brain Assembly	Lot
Cooling Fan	120V AC 120mm High Speed Cooling Fan	220/120V AC 120mm High Speed Cooling Fan	Pieces
3- way Solenoid Valve	3/8" NPT 3-Way Solenoid Valve, 110 V AC	10mm FNPT 3 Port 2 Way Solenoid Valve, 110/220 VAC 50/60Hz	Unit
2- way Solenoid Valve	2/2 Direct Acting Solenoid Valve 1/4" ports 110V AC	Direct Acting Solenoid Valve 10mm ports 110/220VAC 50/60Hz	Unit

Programming

Steps	Process	Material				Tools
133	Remove Arduino IoT 33 from the Terminal Block Breakout Shield	Name	Description	Metric Conversion	Unit of Measure	
		Arduino 33 IoT	Arduino 33 IoT (Option 1 for Arduino Processor)	Arduino 33 IoT (Option 1 for Arduino Processor)	Unit	
		Terminal Block Breakout Shield Nano/Micro	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	DIN Rail Mount Screw Terminal Block Breakout Module Board for Arduino Nano/Micro. (Option 2 for Arduino Terminal Adaptor must match Arduino Processor)	Unit	
134	Connect Arduino IoT33 into the computer	Name	Description	Metric Conversion	Unit of Measure	USB Cable for Nano
		Computer	Computer	Computer		
		Arduino 33 IoT	Arduino 33 IoT (Option 1 for Arduino Processor)	Arduino 33 IoT (Option 1 for Arduino Processor)	Unit	

Steps	Process	Material	Tools
135	Go to Arduino.cc to download the software	Name: Computer; Description: Computer; Metric Conversion: Computer; Unit of Measure: Name: Arduino 33 IoT; Description: Arduino 33 IoT (Option 1 for Arduino Processor); Metric Conversion: Arduino 33 IoT (Option 1 for Arduino Processor); Unit of Measure: Unit	USB Cable for Nano
136	Click Software Tab	Name: Computer; Description: Computer; Metric Conversion: Computer; Unit of Measure: Name: Arduino 33 IoT; Description: Arduino 33 IoT (Option 1 for Arduino Processor); Metric Conversion: Arduino 33 IoT (Option 1 for Arduino Processor); Unit of Measure: Unit	USB Cable for Nano

Steps	Process	Material				Tools
137	Click Download.	Name	Description	Metric Conversion	Unit of Measure	USB Cable for Nano
		Computer	Computer	Computer		
		Arduino 33 IoT	Arduino 33 IoT (Option 1 for Arduino Processor)	Arduino 33 IoT (Option 1 for Arduino Processor)	Unit	
138	Click the Arduino software that is applicable to your OS	Name	Description	Metric Conversion	Unit of Measure	USB Cable for Nano
		Computer	Computer	Computer		
		Arduino 33 IoT	Arduino 33 IoT (Option 1 for Arduino Processor)	Arduino 33 IoT (Option 1 for Arduino Processor)	Unit	

Steps	Process	Material	Tools
139	Click Just Download	Name: Computer; Description: Computer; Metric Conversion: Computer; Unit of Measure: Name: Arduino 33 IoT; Description: Arduino 33 IoT (Option 1 for Arduino Processor); Metric Conversion: Arduino 33 IoT (Option 1 for Arduino Processor); Unit of Measure: Unit	USB Cable for Nano
140	Click the downloaded Software	Name: Computer; Description: Computer; Metric Conversion: Computer; Unit of Measure: Name: Arduino 33 IoT; Description: Arduino 33 IoT (Option 1 for Arduino Processor); Metric Conversion: Arduino 33 IoT (Option 1 for Arduino Processor); Unit of Measure: Unit	USB Cable for Nano

Steps	Process	Material				Tools
141	Start the Installation and click Run	Name	Description	Metric Conversion	Unit of Measure	USB Cable for Nano
		Computer	Computer	Computer		
		Arduino 33 IoT	Arduino 33 IoT (Option 1 for Arduino Processor)	Arduino 33 IoT (Option 1 for Arduino Processor)	Unit	
142	Agree to the Terms and Conditions	Name	Description	Metric Conversion	Unit of Measure	USB Cable for Nano
		Computer	Computer	Computer		
		Arduino 33 IoT	Arduino 33 IoT (Option 1 for Arduino Processor)	Arduino 33 IoT (Option 1 for Arduino Processor)	Unit	

Steps	Process	Material				Tools
143	Install the Software	Name	Description	Metric Conversion	Unit of Measure	USB Cable for Nano
		Computer	Computer	Computer		
		Arduino 33 IoT	Arduino 33 IoT (Option 1 for Arduino Processor)	Arduino 33 IoT (Option 1 for Arduino Processor)	Unit	
144	Obtain the Arduino code from Oxikit team	Name	Description	Metric Conversion	Unit of Measure	USB Cable for Nano
		Computer	Computer	Computer		
		Arduino 33 IoT	Arduino 33 IoT (Option 1 for Arduino Processor)	Arduino 33 IoT (Option 1 for Arduino Processor)	Unit	

Steps	Process	Material	Tools
145	Click the Arduino code	Name: Computer; Description: Computer; Metric Conversion: Computer; Unit of Measure: Name: Arduino 33 IoT; Description: Arduino 33 IoT (Option 1 for Arduino Processor); Metric Conversion: Arduino 33 IoT (Option 1 for Arduino Processor); Unit of Measure: Unit	USB Cable for Nano
146	Go to File Tab	Name: Computer; Description: Computer; Metric Conversion: Computer; Unit of Measure: Name: Arduino 33 IoT; Description: Arduino 33 IoT (Option 1 for Arduino Processor); Metric Conversion: Arduino 33 IoT (Option 1 for Arduino Processor); Unit of Measure: Unit	USB Cable for Nano

Steps	Process	Material	Tools
147	Click Examples	Name: Computer; Description: Computer; Metric Conversion: Computer; Unit of Measure: Name: Arduino 33 IoT; Description: Arduino 33 IoT (Option 1 for Arduino Processor); Metric Conversion: Arduino 33 IoT (Option 1 for Arduino Processor); Unit of Measure: Unit	USB Cable for Nano
148	Click 0.1 Basics	Name: Computer; Description: Computer; Metric Conversion: Computer; Unit of Measure: Name: Arduino 33 IoT; Description: Arduino 33 IoT (Option 1 for Arduino Processor); Metric Conversion: Arduino 33 IoT (Option 1 for Arduino Processor); Unit of Measure: Unit	USB Cable for Nano

Steps	Process	Material				Tools
149	Click Blink	Name	Description	Metric Conversion	Unit of Measure	USB Cable for Nano
		Computer	Computer	Computer		
		Arduino 33 IoT	Arduino 33 IoT (Option 1 for Arduino Processor)	Arduino 33 IoT (Option 1 for Arduino Processor)	Unit	
150	Go to the Tools Tab	Name	Description	Metric Conversion	Unit of Measure	USB Cable for Nano
		Computer	Computer	Computer		
		Arduino 33 IoT	Arduino 33 IoT (Option 1 for Arduino Processor)	Arduino 33 IoT (Option 1 for Arduino Processor)	Unit	

Steps	Process	Material	Tools
151	Click the Board: "Arduino NANO 33 IoT"	Name: Computer; Arduino 33 IoT Description: Computer; Arduino 33 IoT (Option 1 for Arduino Processor) Metric Conversion: Computer; Arduino 33 IoT (Option 1 for Arduino Processor) Unit of Measure: ; Unit	USB Cable for Nano
152	Click Arduino NANO 33 IoT	Name: Computer; Arduino 33 IoT Description: Computer; Arduino 33 IoT (Option 1 for Arduino Processor) Metric Conversion: Computer; Arduino 33 IoT (Option 1 for Arduino Processor) Unit of Measure: ; Unit	USB Cable for Nano

Steps	Process	Material				Tools
153	Go back to the Tools Tab	Name	Description	Metric Conversion	Unit of Measure	USB Cable for Nano
		Computer	Computer	Computer		
		Arduino 33 IoT	Arduino 33 IoT (Option 1 for Arduino Processor)	Arduino 33 IoT (Option 1 for Arduino Processor)	Unit	
154	Click Port: "COM2 (Arduino NANO 33 IoT)"	Name	Description	Metric Conversion	Unit of Measure	USB Cable for Nano
		Computer	Computer	Computer		
		Arduino 33 IoT	Arduino 33 IoT (Option 1 for Arduino Processor)	Arduino 33 IoT (Option 1 for Arduino Processor)	Unit	

Steps	Process	Material				Tools
155	Click COM2 (Arduino NANO 33 IoT)	Name	Description	Metric Conversion	Unit of Measure	USB Cable for Nano
		Computer	Computer	Computer		
		Arduino 33 IoT	Arduino 33 IoT (Option 1 for Arduino Processor)	Arduino 33 IoT (Option 1 for Arduino Processor)	Unit	
156	Go Back to the Main Screen	Name	Description	Metric Conversion	Unit of Measure	USB Cable for Nano
		Computer	Computer	Computer		
		Arduino 33 IoT	Arduino 33 IoT (Option 1 for Arduino Processor)	Arduino 33 IoT (Option 1 for Arduino Processor)	Unit	

Steps	Process	Material	Tools

157	Click Program. (Arrow facing to the right, located in the upper left section of the screen)	Name	Description	Metric Conversion	Unit of Measure	USB Cable for Nano
		Computer	Computer	Computer	
		Arduino 33 IoT	Arduino 33 IoT (Option 1 for Arduino Processor)	Arduino 33 IoT (Option 1 for Arduino Processor)	Unit

158	A prompt message will appear "Done uploading." in the status bar.	Name	Description	Metric Conversion	Unit of Measure	USB Cable for Nano
		Computer	Computer	Computer	
		Arduino 33 IoT	Arduino 33 IoT (Option 1 for Arduino Processor)	Arduino 33 IoT (Option 1 for Arduino Processor)	Unit

Steps	Process	Material				Tools
159	Unplug the Arduino IoT 33	Name	Description	Metric Conversion	Unit of Measure	USB Cable for Nano
		Computer	Computer	Computer		
		Arduino 33 IoT	Arduino 33 IoT (Option 1 for Arduino Processor)	Arduino 33 IoT (Option 1 for Arduino Processor)	Unit	
160	Hook the Arduino IoT 33 into the Terminal Block Breakout Shield	Name	Description	Metric Conversion	Unit of Measure	USB Cable for Nano
		Computer	Computer	Computer		
		Arduino 33 IoT	Arduino 33 IoT (Option 1 for Arduino Processor)	Arduino 33 IoT (Option 1 for Arduino Processor)	Unit	