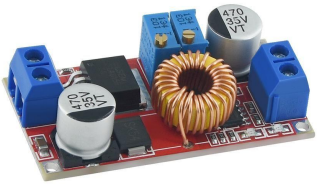
Document on Components and Safety

Component List:

Power Supply (PSU):

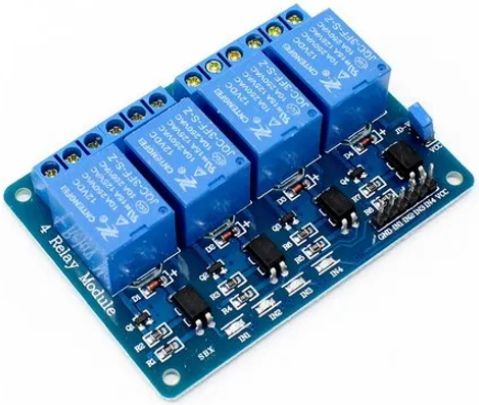
- Quantity: 1
- Model: LRS-100-12 - Embedded Switching Power Supply, SMPS, 102W, 12V, 8.5A, MEAN WELL
- Purpose: For DC voltage supply

Step-Down Boards:



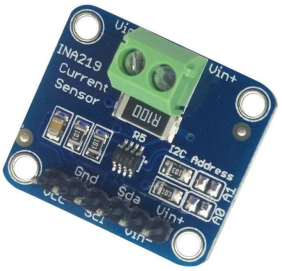
- Quantity: 8
- Model: TECNOIOT 5pcs 5A Max XL4015 DC to DC CC CV Lithium Battery Step-Down Charging Board Converters
- Purpose: Provide different voltage levels to the BMS (Battery Management System)

Logic Relay 4-Channel Boards:



- Quantity: 2
- Model: ELEGOO 4-Channel DC 5V Relay Module with Optocoupler
- Purpose: Activate the circuit with the correct voltage level

Ampere Current Sensor (Ampere Current Sensor):



- Quantity: 1
- Model: Arduino INA219 5A Ampere Current Sensor
- Purpose: Used to measure W (Watt) and Wh (Watt-hours)

Raspberry Pi 3 B+:

- Quantity: 1
- Model: Raspberry Pi 3 B+
- Purpose: For computing and control tasks

Raspberry Pi 7-Inch Touch Display:

- Quantity: 1
- Model: Raspberry Pi 7-Inch Touch Display
- Purpose: Display output with touch functionality for Raspberry Pi

Safety Precautions:

When working with these components, it's important to follow safety precautions to avoid damage to the components or accidents.

Power Supply (PSU):

Connect only to the specific voltage (12V) and current (8.5A) as specified for the device.
Avoid overloading or short-circuiting, which can damage the device or cause a fire.

Step-Down Boards:

Ensure the correct voltage levels and polarity are used when connecting to the BMS.
Monitor current consumption to avoid overheating and short-circuits.

Logic Relay 4-Channel Boards:

Use the relay module according to the manufacturer's instructions.
Ensure that the optocouplers are functioning properly to isolate the control circuit from the load.

Ampere Current Sensor:

Properly connect the sensor and follow the connection diagram.
Closely monitor the current measurement and avoid overloading.

Raspberry Pi 3 B+ and Raspberry Pi 7-Inch Touch Display:

Follow the manufacturer's instructions and guidelines for Raspberry Pi and the touch display. Ensure proper power and data connections for both devices

General Safety Precautions:

Always use personal protective equipment (e.g., eye protection) when working with electrical components.
Regularly check all connections and cables for signs of wear or damage.
Disconnect the power supply before making any changes or performing maintenance on the system.
Follow the manufacturer's instructions and guidelines for all components.
By following these safety precautions, you can ensure the safe and reliable operation of your system and avoid potential hazards or component damage.