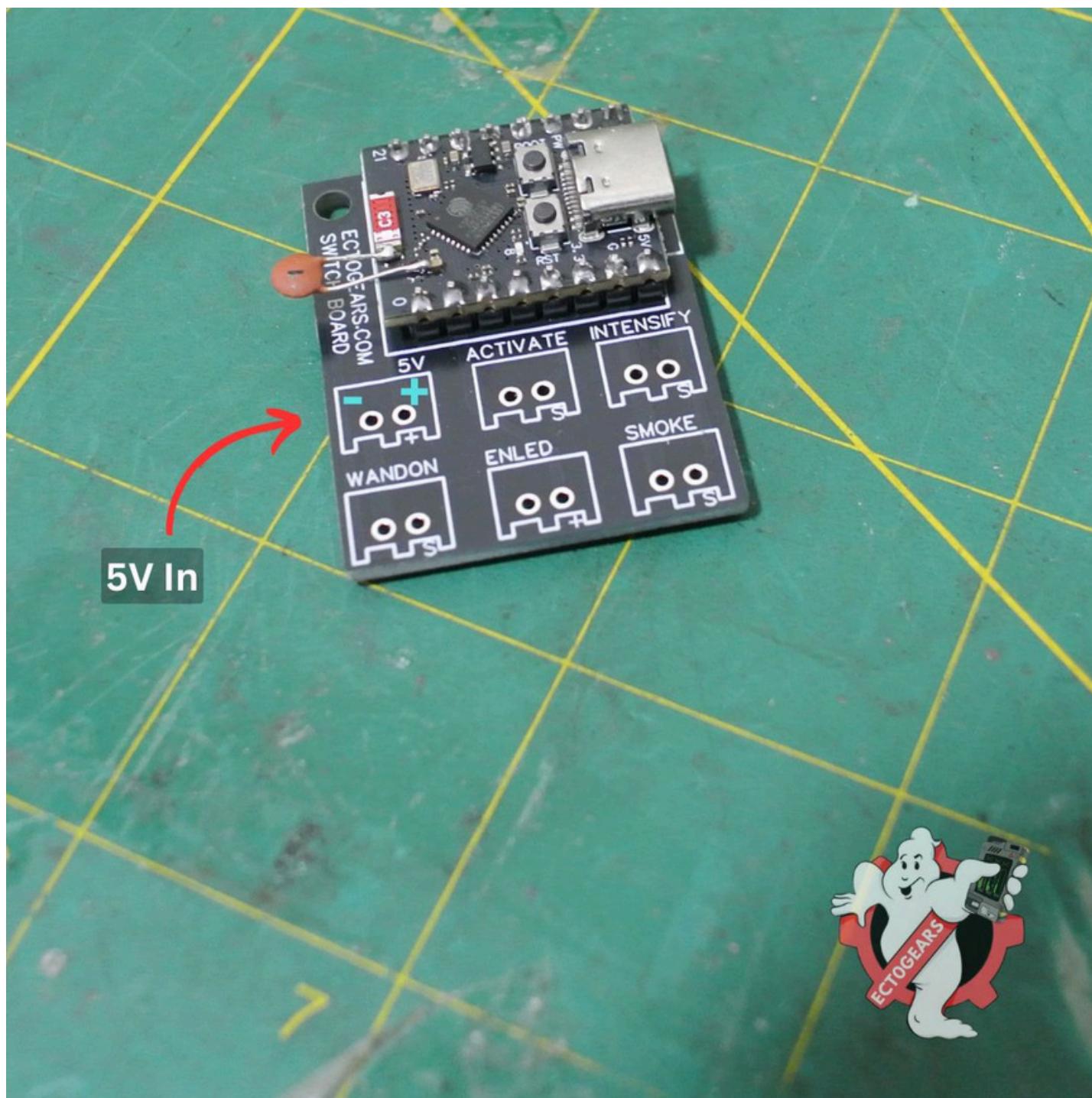


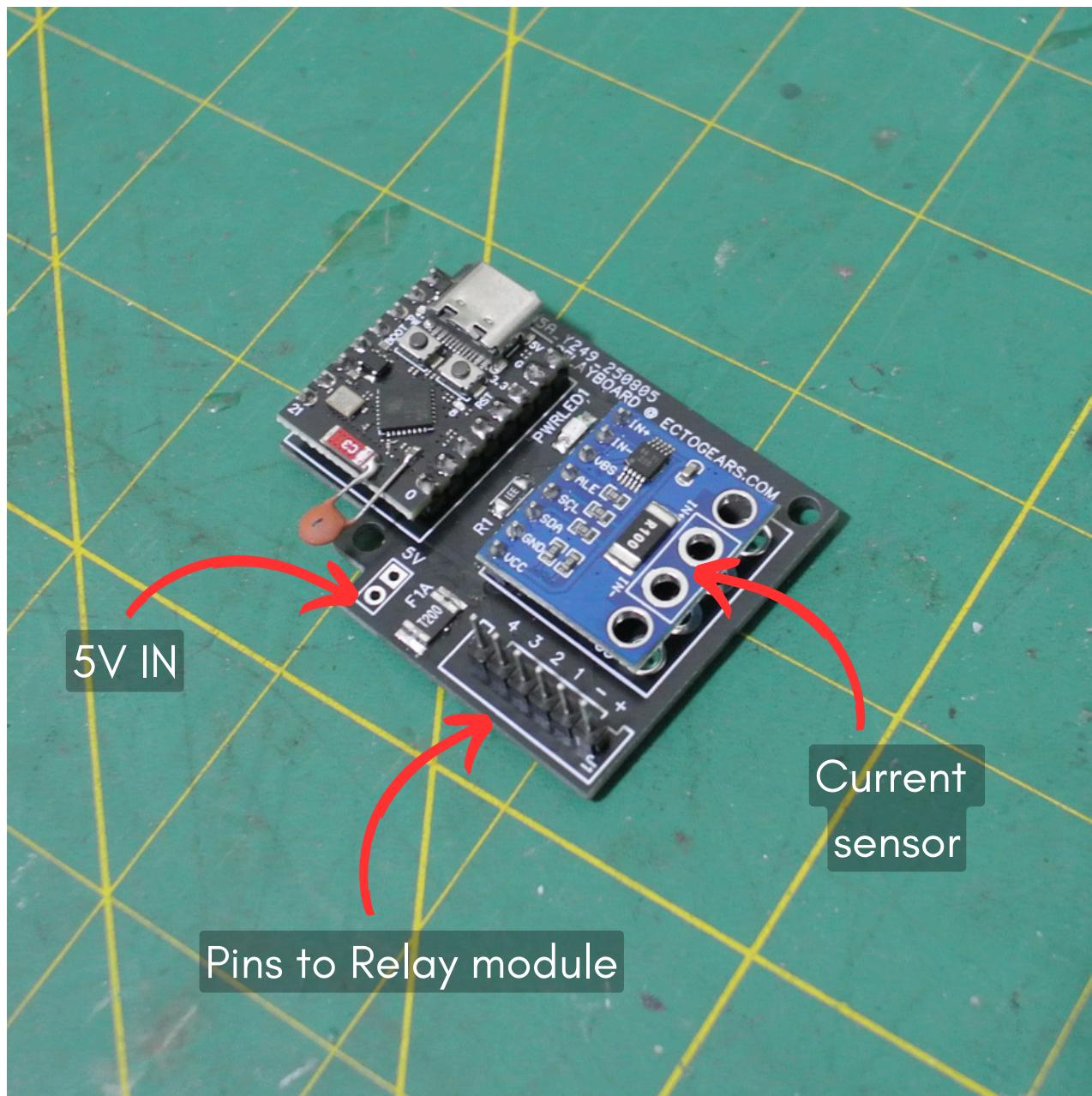
SWITCH BOARD

When you purchased either Attenuator or Hybrid Modular Interface device (Universal Version), you will receive two PCB without modules on it. They are for Relay and Switch Board. Switch board is for detecting and sync the toggle switches and intensify button at the neutrona wand. Relay board is for detecting power usage and trigger relay module up to 4 channel. You have to get the parts and assemble the PCB yourself.

Below is the Switch Board PCB with ESP32-C3 installed. Solder the ESP32-C3 into the board and flash the firmware. The how is on a different guide.

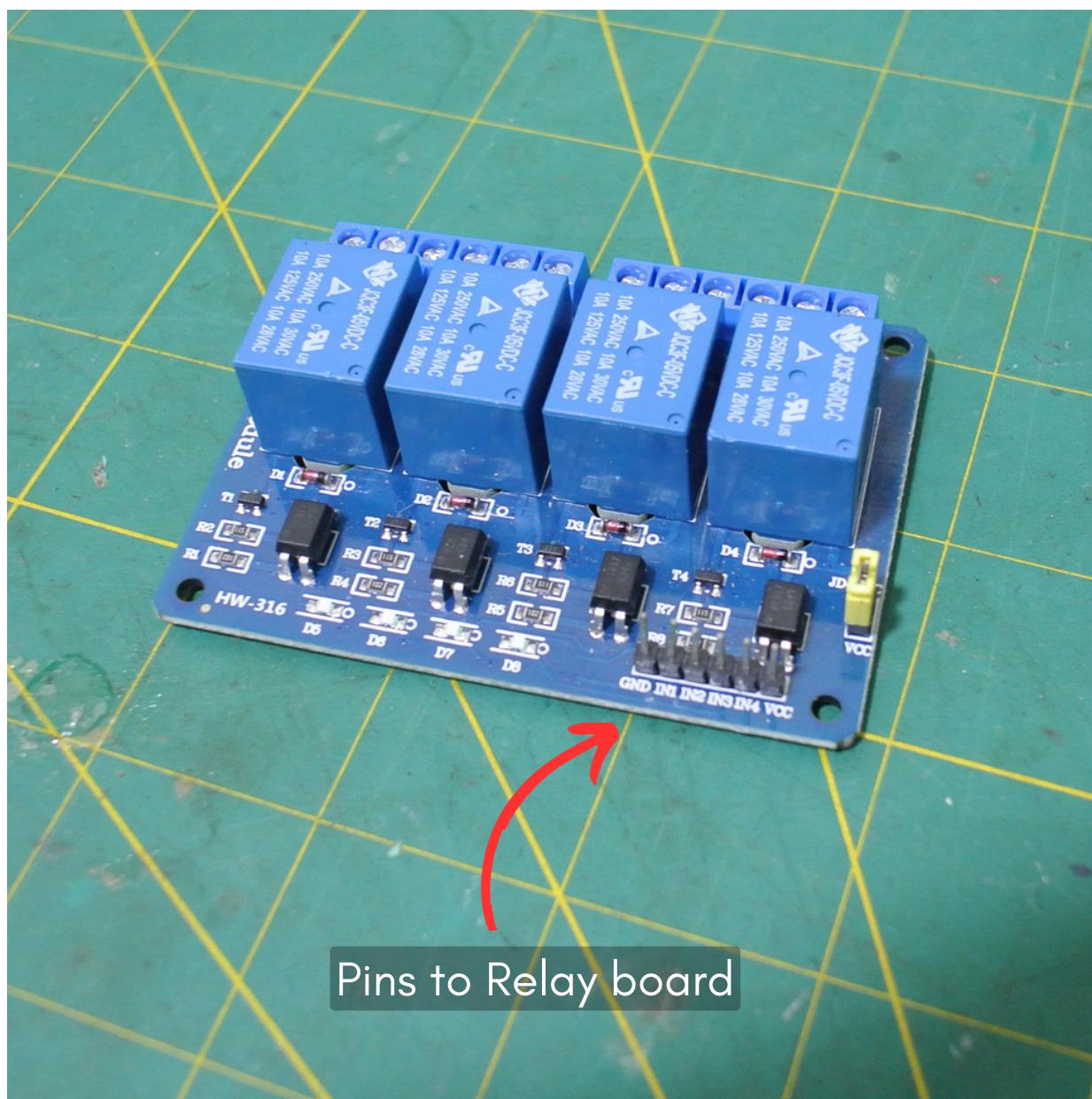
- Make sure the board receive regulated 5V
- Activate is for wand activate toggle switch. Use a DPDT switch.
- Wandon is for wand on toggle switch. Use a DPDT switch.
- Intensify is for wand intensify push button. Use a DPDT switch.
- EN.LED is for a optional led.
- Smoke is currently unsupported.



RELAY BOARD

Above is the Relay PCB with ESP32-C3, INA 226 and 6pin header soldered.

- Make sure the board receive regulated 5V and correct polarity.
- The PCB has a silkscreen to it. Make sure the PCB and modules pin names matches before soldering.
- You will get the PCBs with any SMD component soldered. Just focus on the ESP32-C3, INA 226 and the headers.

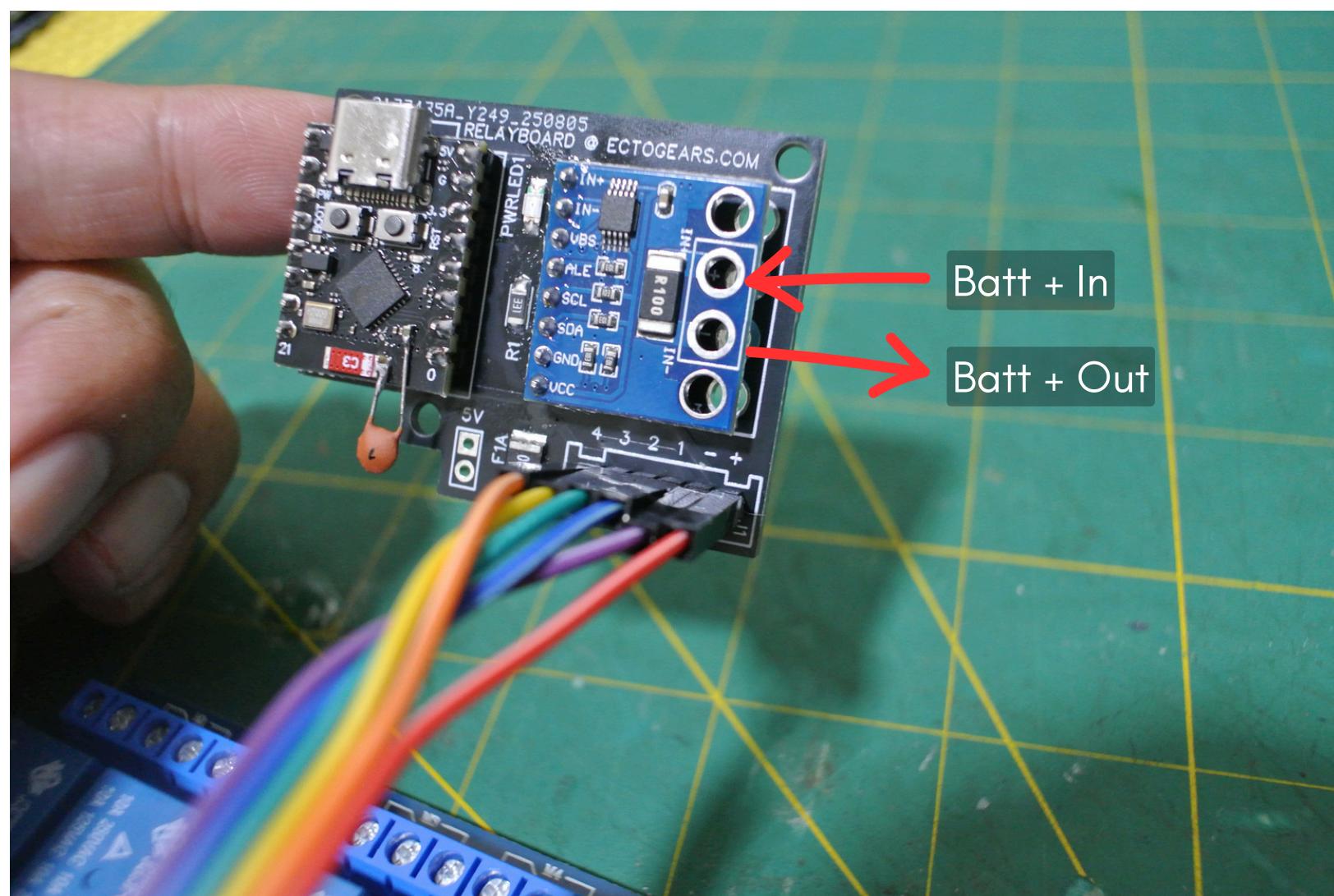
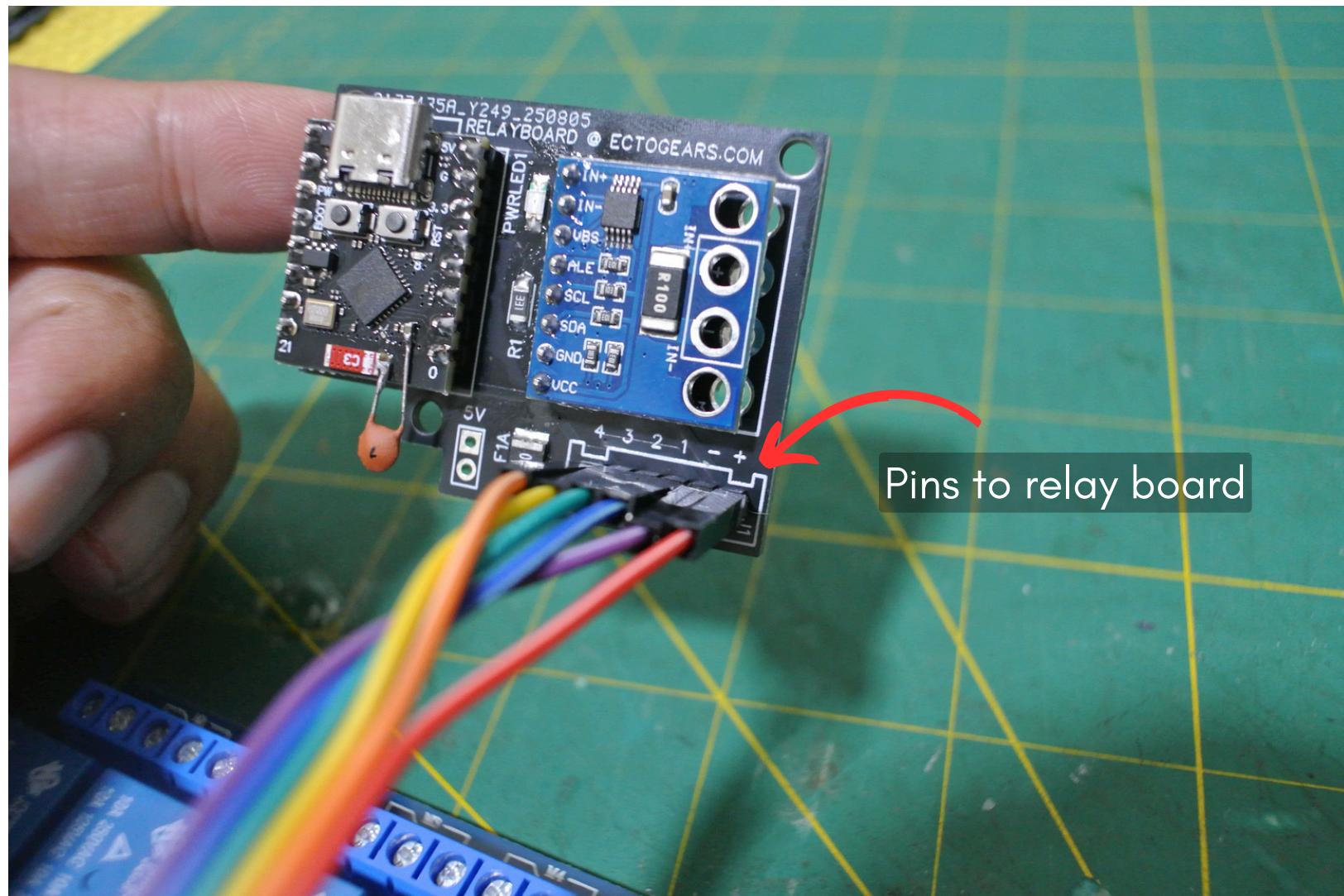


Use a 5V Active Low relay module. It can support up to 4 channels. You can get these at [aliexpress](#).



RELAY BOARD

There's text on the PCB showing the pins. Connect these to the relay module. Pay attention on the GND and VCC pin. Don't get this mixed up, especially the VCC and GND pins. It could damage both the relay board and relay module.



The blue module is the HMI current sensor. This is used to measure and give an estimate power usage giving estimate remaining battery capacity.



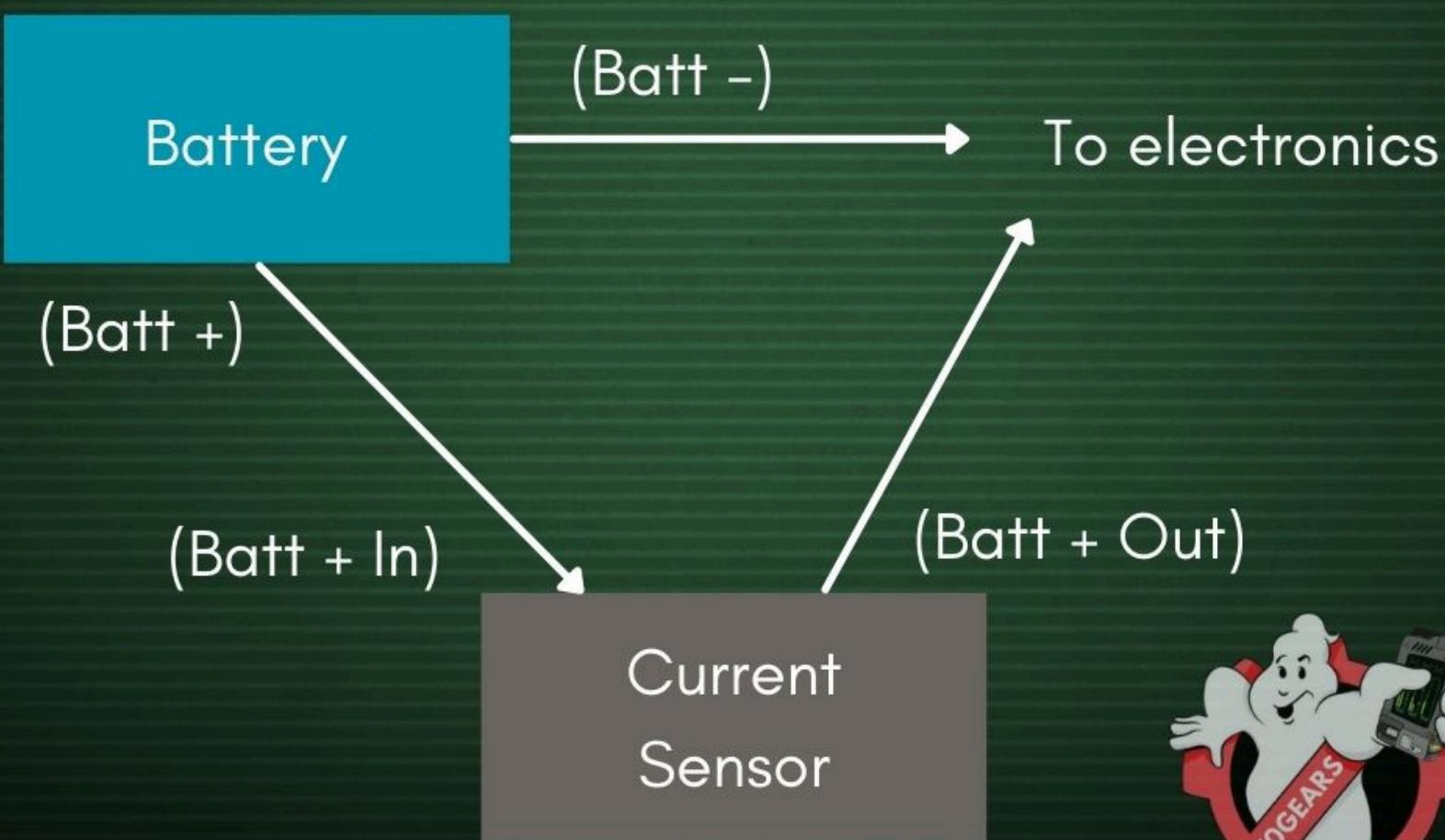
RELAY BOARD

The INA 226 has two terminal named IN+ and IN- . This board works by installing them in series with the battery output. Best installed right after the battery.

- INA 226 IN+ = Connect to Battery +
- INA 226 IN- = Connect to Pack electronics (load)

Current Sensor Wiring

This sensor will measure the power usage to estimate battery capacity. It's not accurate but it can give you a rough estimation. The current sensor is connected in series of Batt + from the battery.



RELAY BOARD

After that, you are done with this part. Once the Relay PCB get power, it will automatically connects to the switch board immediately and waiting for commands.

The Relay module output itself is straight forward . They act as a switch. Use COM for one end and Normally Open for one end of whatever you wanted the relay to be switched. You can check youtube for how a relay works.

This board capable to use 4 channels but you doesn't need to use all of it if you don't want to use it.

