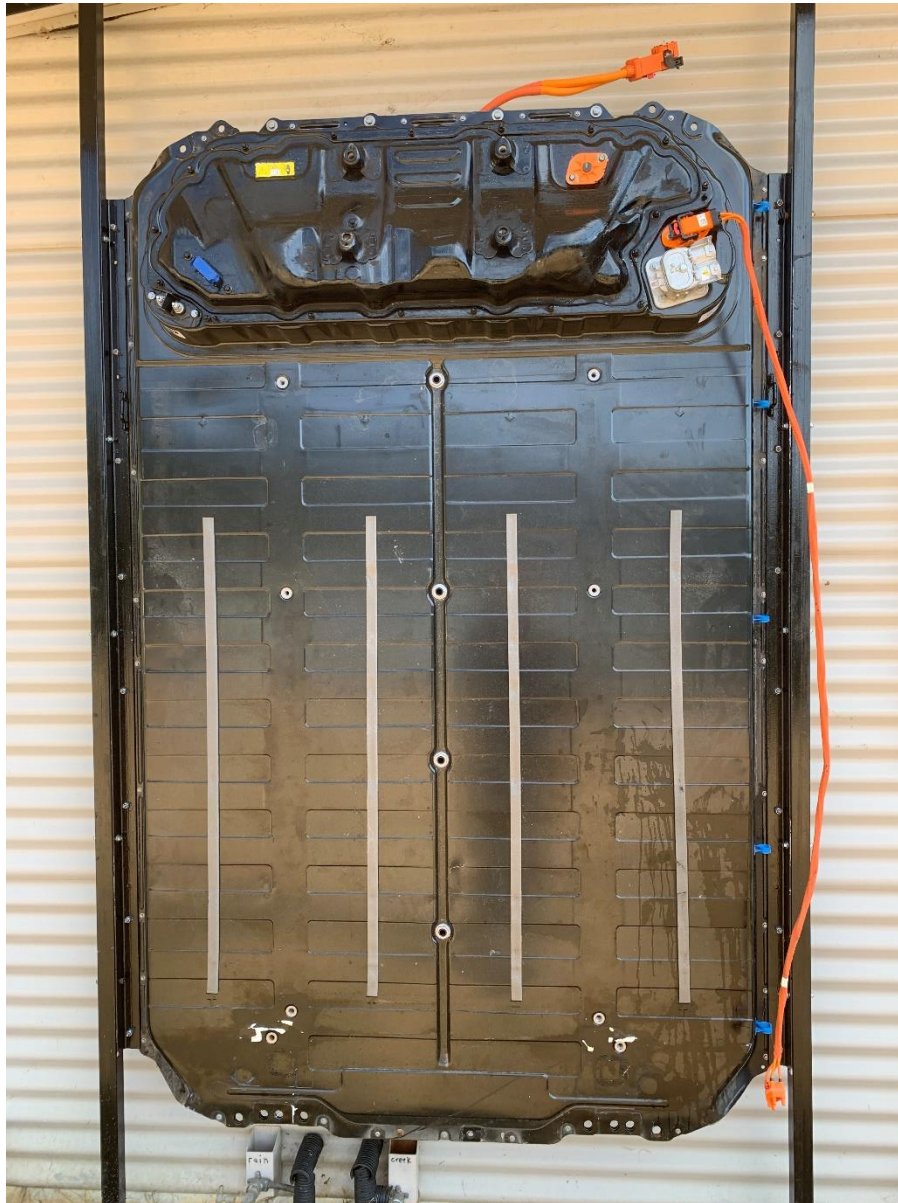


Tesla Model 3 Battery

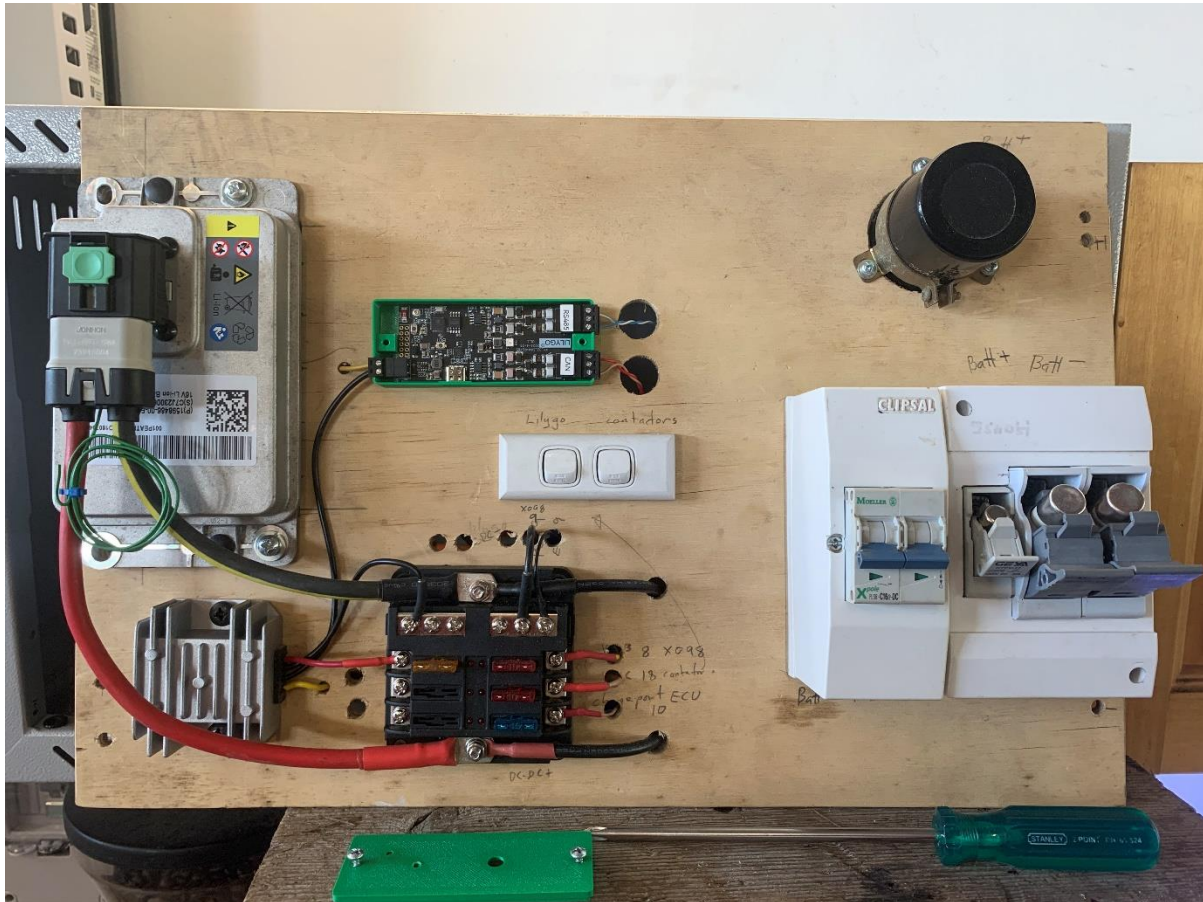
August 2024

Assuming you obtained a complete (maybe crashed) Tesla model 3, grab as many parts out of it as you can. I am using the charge port and cabling; part of the rear motor HV cable; the 16 volt auxiliary battery; and some of the low voltage wiring harness.

Here is my battery installed outside my shed just after “bolting it in”, close to the Fronius inverter and the main meter box / distribution panel:



And here is the “control board”, inside the shed (other side of the wall). This goes into a metal box I had spare. Note the Tesla 16v battery (so it will get charged from the main HV battery); a DC-DC converter (12 to 24v input, 5v output, low amps) to feed the Lilygo; a low voltage fuse block; two switches (both low voltage, one for the Lilygo power and one for the low voltage contactor power of the PCS); lastly the HV fuses and breakers and capacitor.

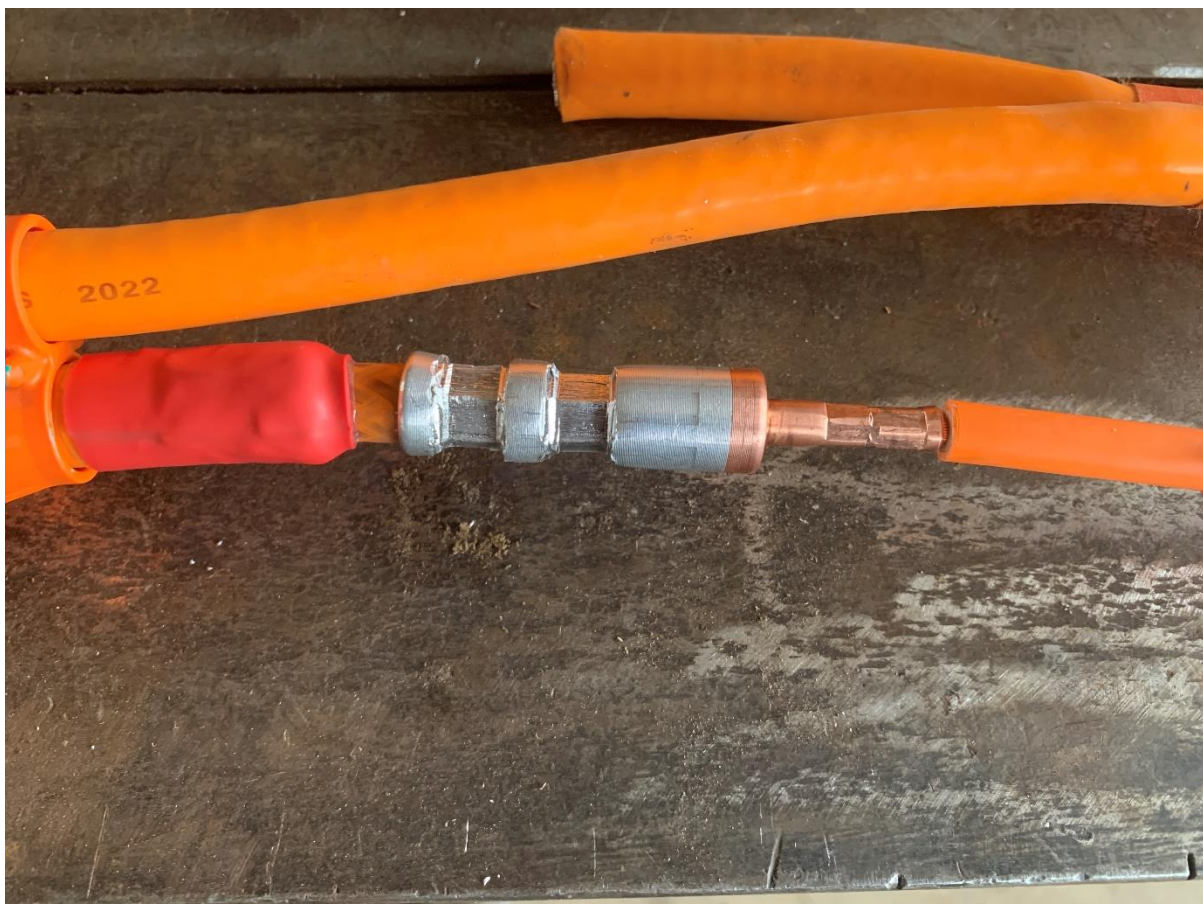


The low voltage fuse block has leads directly from the Tesla battery (I had to open up the connector and re-crimp some of the spare red lead into it to get the length required); the black leads feeding in from the right top and right bottom are 4mm² cable going to the low voltage output terminals on top of the penthouse; the fuses were chosen arbitrarily to feed:

- a) Lilygo via a switch
- b) X098 pin 18 via a switch, which powers the contactors
- c) X098 pin 8, powering the PCS
- d) The charge port ECU

The HV cabling is all 10mm² double insulated cable. The two main fuses are 50amp 500v; the small fuse (in line with the capacitor) is 10amp 500v; the circuit breakers are 500v 16amp (but will be replaced by 500v 32amp).

To connect the 50mm² aluminium HV motor cable to my 10mm² copper cable I used special crimp fittings which avoid the problems of aluminium oxide creation and a joint that gets too hot. Then cover in lots of heat shrink. I also staggered the connectors to add physical separation.



Wiring diagram: Note the yellow "Charge Port ECU" boxes are the same unit, and are optional
 One switch can turn off the Lilygo, the other switch kills power to the contactors.

