Tesla Model S Charger Installation and User Guide

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1. Parts

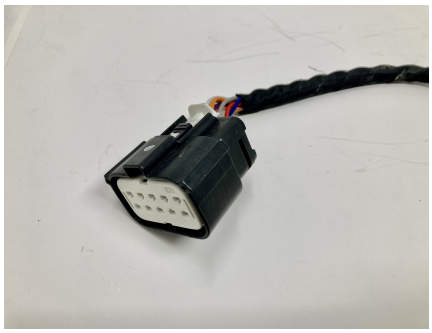
Your Tesla Model S charger should include the following to complete the installation on your vehicle:

1. Tesla Model S Gen 2 Charger (1:1)
2. Ground strap (1:2)
3. Molex MX 150L 10 Pin (1:3)
4. Molex MX 150L 12 Pin (1:4)
5. Molex Sabre Series 6 pin (X2) (1:5)

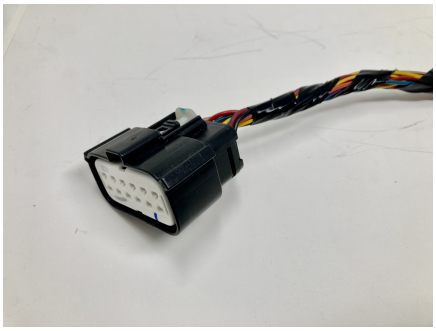
1:1

1:2

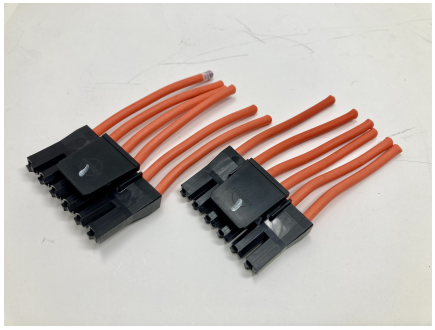
1:3



1:4



1:5



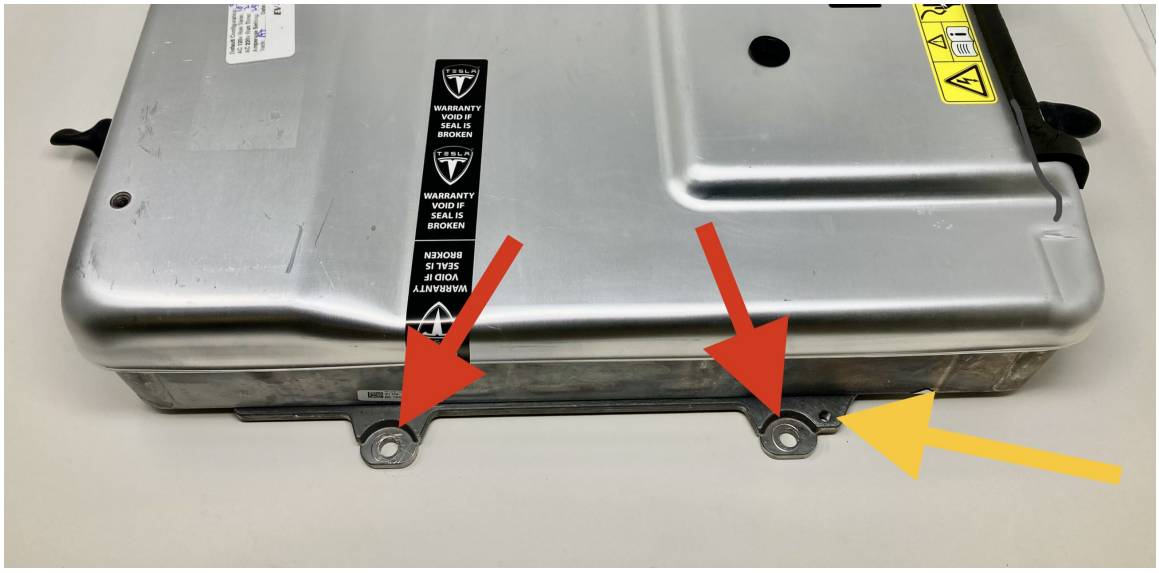
2. Mounting

The charger must be mounted with the base facing towards the ground. It CANNOT be mounted on its side or upside down as the water cooling will not function properly and may cause a failure.

There are 4 bolt holes (Red arrows 2:1) in the charger base that need to be securely fastened to your vehicle.

The Ground Strap must be attached to the main body of the charger using one of the four mounting bolts or the smaller threaded holes (Yellow arrow 2:1) DO NOT mount the ground strap to the case lid.

2:1



3. Cooling

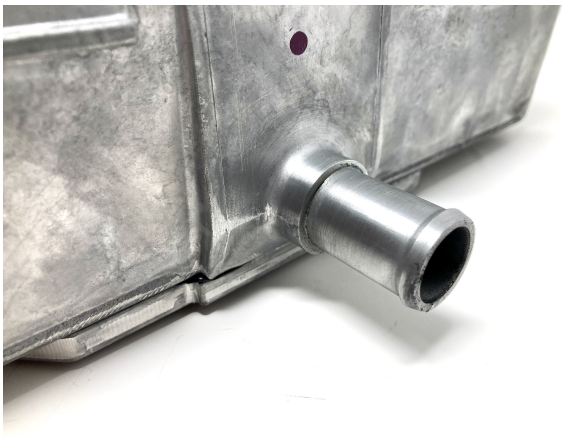
The Tesla Charger has 2 cooling ports located in the front and back of the charger. (3:1)

The fittings utilize ¾ inch (19mm) heater hose and are fastened with hose clamps or constant tension clamps. (3:2)

The direction of water flow does not matter on the charger.

Like the Tesla Motor and other Tesla components, The charger requires the use of ZEREX G48 antifreeze coolant 50/50 solution (3:3)

3:1



3:2

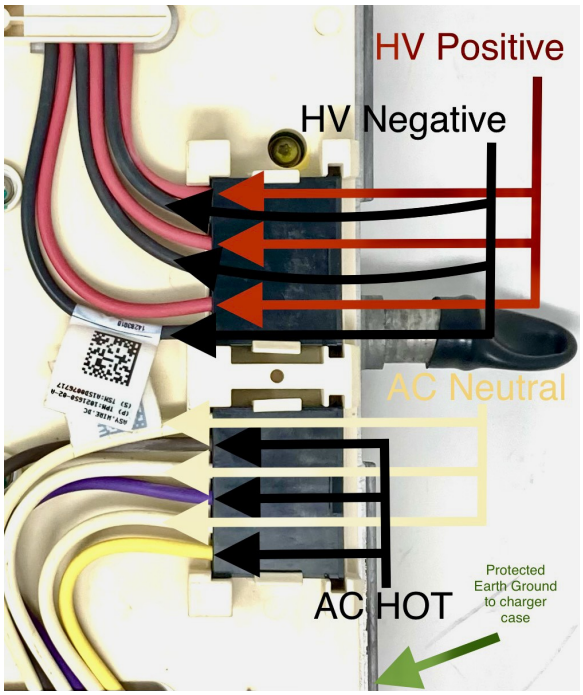
3:3

4. Pin-out and Wiring

The 2 main connectors for High Voltage DC output and AC input lines are located on the top front of the charger. (4:1) (picture shown with charger cover off)

The Tesla charger contains 3 separate internal charger boards. The HV DC output and AC input connectors will need to be paralleled together during installation.

4:1



Starting on the HV-DC side, take the Molex Sabre series 6 pin plug and tie pins 1,3,5 (black wires) together. This will be the negative cable to your HV battery.

Next take pins 2,4,6 (red wires) and tie them together. This will be the HV-DC positive cable and will connect to your HV battery positive.

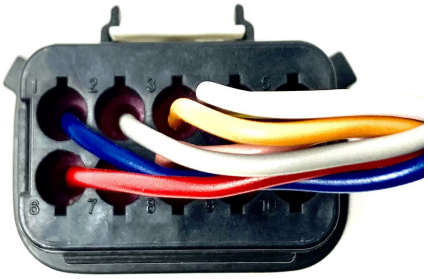
On the AC side take the other Molex Sabre series 6 pin plug and tie pins 1,3,5 (yellow, purple and brown wires) together. This will be connected to the AC hot wire from the J1772 port.

Next take pins 2,4,6 (white wires) and tie them together and connect these to the AC neutral wire on the J1772 port.

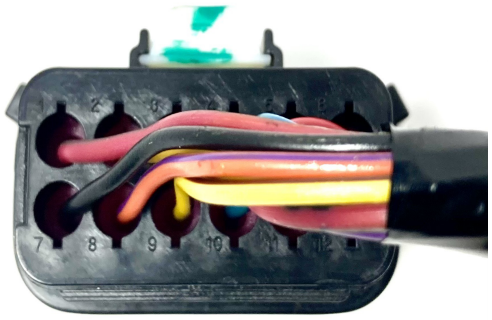
The ground or protected earth wire will be attached to the chassis of the charger case using a ring terminal on to any bolt hole.

The 10 pin (4:2) and 12 pin (4:3) Molex connectors will be used for the 12 volt power and enable wire as well as the Pilot and Proximity wires from the J1772 Plug.

4:2



4:3



On the 10 pin Molex (4:2), pin 3 is the enable wire and will be controlled by a switched 12v positive source. If using an AVC2 or JVC5 see section 7. for wiring. Supplying 12 volts to this wire will turn the charger on.

On the 12 pin Molex (4:3), pin 1 is the power supply. It will be connected to 12 volts positive. This can be a constant voltage source or switched. Pin 7 is connected to 12 volts negative. Pin 5 is connected to the CP or Control Pilot on the J1772 port. Pin 11 is connected to the PP or Pilot Proximity on the J1772 port.

MOLEX 10 PIN PINOUT

1	2	3 Enable	4	5
6	7	8	9	10

MOLEX 12 PIN PINOUT

1 12V+	2	3	4	5 CP	6
7 12V-	8	9	10	11 PP	12

5. Programming

The charger comes ready to go for a 96S battery pack. It is set at a max amperage of 25 amps on the AC current which is a 5.5Kw charge rate. This can be changed to up to 10Kw if you like. To change any of the settings, follow the instructions below.

The charger should now be able to turn on via the 12v supply and enable wire.

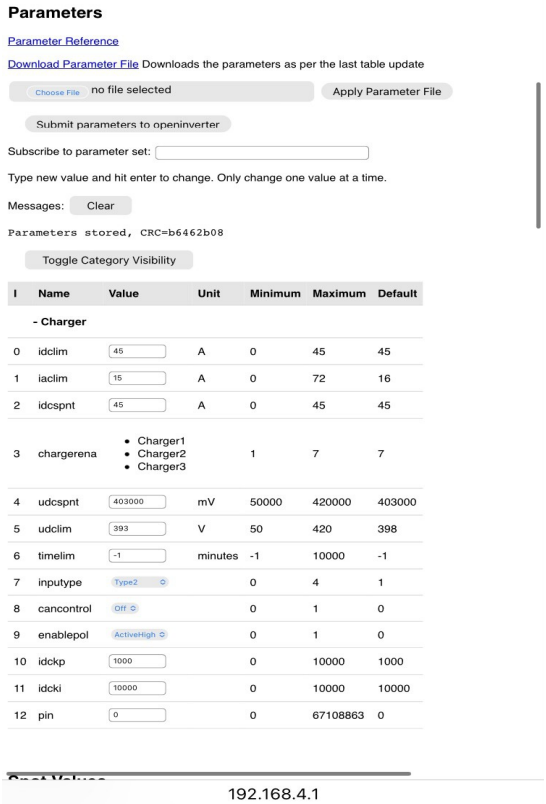
Without plugging in the J1772 plug, provide 12 volts to the power supply input, of the Tesla charger, and 12 volts to the enable wire. Wait approximately 20 seconds for the internal control board to boot up.

With your cell phone, I-Pad or any machine that can access internet. Go to your Wi-Fi and look for a link called “ inverter”

Select that and use the password “ inverter123”

Once you have connected to the inverters Wi-Fi open a new link on your browser and type in the link **192.168.4.1**

You should see a page like this:



To change the current setting select the “iaclim” column number 1 and change the current setting from 25 amps to the amp limit you desire. This setting is the absolute limit and will be regulated via the pilot wire on the J1772 during charging. Maximum current is 45 amps.

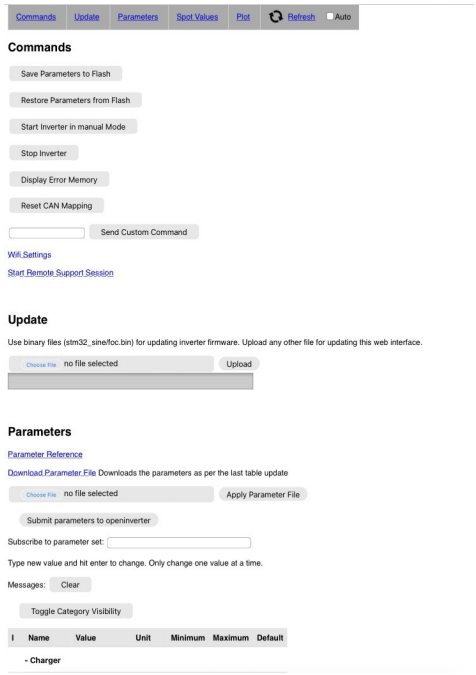
If your battery pack is NOT 96S. And is a different cell count. Then you will need to change the voltage limits on the charger.

To do this go to column number 2 “udclim” and set this to your max voltage for the battery pack you have.

Secondly you will need to set the “udcspnt” limit. Usually 5 volts above your voltage max limit (udclim). This modifies the constant voltage set point of the charger. Which allows the charger to throttle the current while reaching max charge.

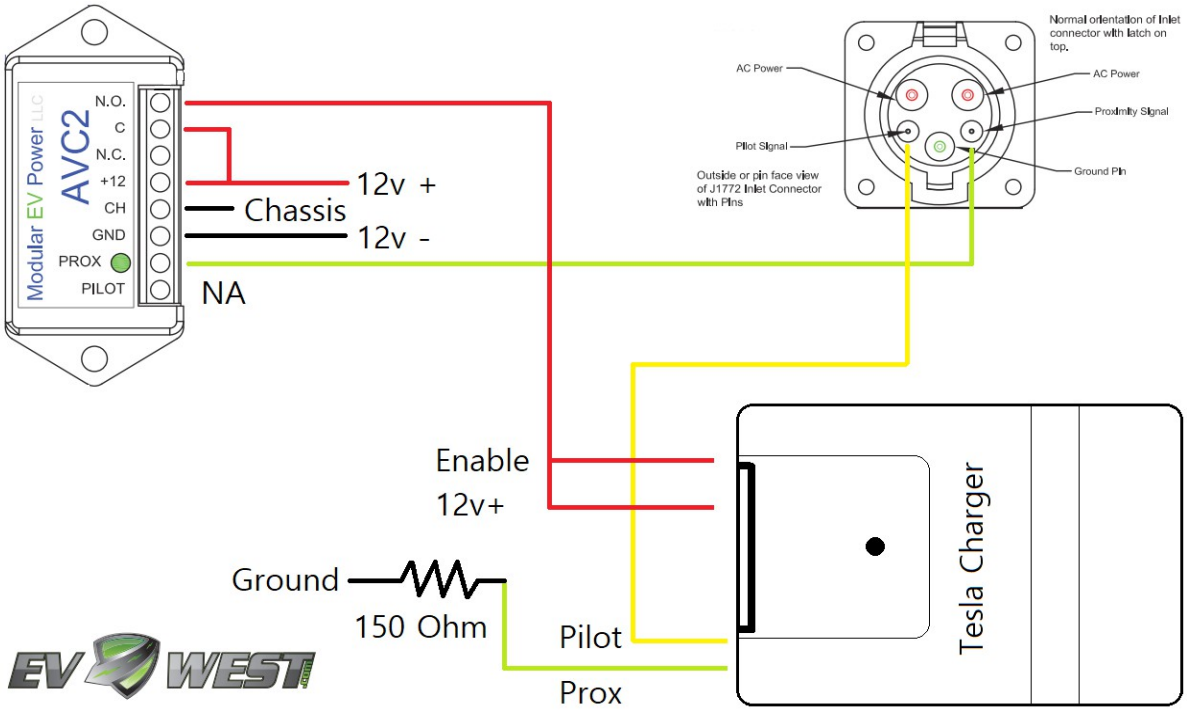
When your done you need to save your settings. Click the button that says

(Save parameters to flash) and after this you should see a confirmation under the (Message) area that the flash was saved.



6. Wiring for AVC2 or JVC5

If you are using an AVC2 or JVC5 refer to the wiring diagram below to wire up the charger with either of these components. (AVC2 shown below)



7. General Information

For any extra information on the chargers, refer to the wiki link below.

https://openinverter.org/wiki/Tesla_Model_S/X_GEN2_Charger