CAPTUREPRO™

USER GUIDE

Updated: September 2015

 v1.1

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CapturePro Purpose and Design

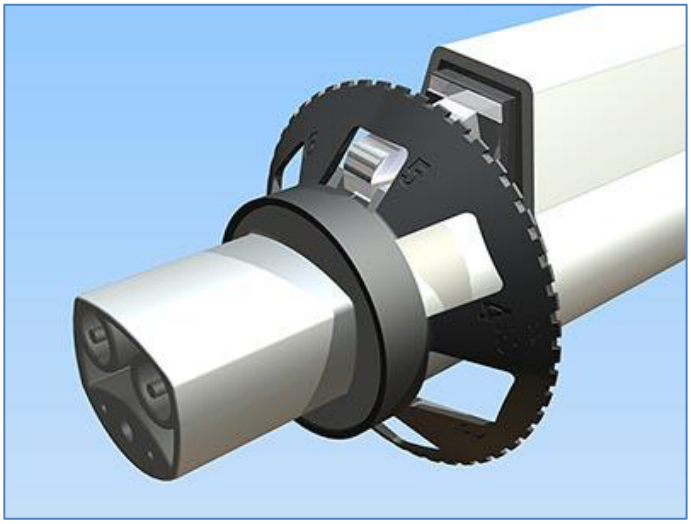
Why was CapturePro developed ?

We'd heard stories of Electric Vehicles (EVs) being unplugged from public chargers- these situations includesimple mischief and other EV users who wanted to charge their cars before the original user was done. In any case, it seemed wrongthat the public charging converter device provided by Tesla can't lockin the same way as the native Tesla charging wanddoes (UMC or HPC).

No matter the reason, if you are unplugged it keeps your car from being recharged- in certain situations this could inconvenience and even strand you. CapturePro solves this problem of beingunpluggedfrom public chargers. It's fast and easy to use.

How does it work ?

CapturePro fits between yourModel S J1772 charging adapter and the charging handle- it locks everything together whenyour car locks, keeping your charging sessionsecure.



More detail of how to install and use the CapturePro is found in the Instructions section, but here's how it works in summary: think of how the Tesla homecharger (UMC or HPC) works – it plugsinto the charging port, and during charging it is locked to the car(if the car is locked). Public chargingworks similarly: you use the Tesla J1772 adapter to allow the J1772 charging handleto plug intoyour Model S charge port – but, thoughthe charging adapter is locked to the car, the charging handle is not locked to the adapter

The CapturePro fits over the charging adapterand part of the charging handle capturing mechanism, and disallows removal of the handlefrom the adapter. As long as the Tesla J1772 charging adapter is locked to the car, the charging handle is locked to the adapter.

What chargers does CapturePro work with?

CapturePro fits all J1772 Level 2 chargers– these include public infrastructure charging station models from ChargePoint, Blink, eVgo, SemaConnect, etc.

CapturePro uses a series of slots that slide over the attachment hook on the J1772 connector– but, because each manufacturer of J1772 connectors uses a slightly different attachment hook method and size, the device must include avariety of slots sizes.

Please alert Power12 if a charger is found which does not fit.

The CapturePro carries a lifeti me warrant y against manufacturing defects. Also, In the unlikely case of damage or attack, or If you ever have to forcibly remove the unit yourself, contact Power12 for a free replacement unit (you pay only shipping).

Instructions for using CapturePro

CapturePro charging lock protects your electric car charging session until you unlock it – it's compact and easy to store with your Tesla J1772 charging adapter.

The following sections outline how to attach the CapturePro, and also how to remove it. Please fully review the Tesla J1772 Adapter charging instructions before continuing with this document or using CapturePro.

Starting a charging session with CapturePro

Before starting, use the Control Panel to unlock the charging port door, and make sure the J1772 charging station is enabled with your access card, so that charging is ready to begin.

Start by attaching your Tesla J1772 charging adapter to the charging station J1772 connector, as you normally would. If this is your first time, follow the Tesla instructions included with your Model S. Note how the J1772 connector attaches to the charging adapter with an attachment 'hook' that slides over a ridge on the adapter, to capture it. See Figure 1 (right), showing the adapter in red – make sure the hook is fully engaged once attached.

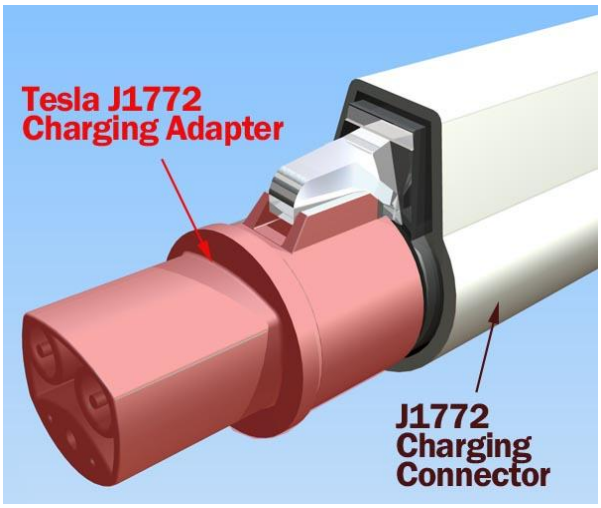


Figure 1

Next, slide the CapturePro lock over the charging adapter, at the front or 'car' end. The wide end of the lock goes onto the adapter first, and slides forward onto the adapter. Slide it on smoothly until the lock is close to the engagement hook (lock shown in red – Figure 2).

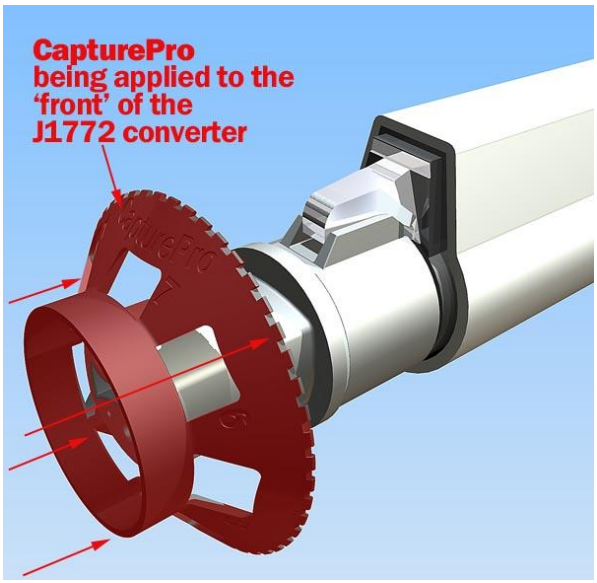


Figure 2

Now, position the CapturePro lock so that it slides over and captures the engagement hook – but, because different charging station connectors are made by different manufacturers, the hook size may vary. To support various hook sizes, CapturePro is designed with six different capture slots, so rotate the lock to select the slot which best captures the hook. **Try each slot to find the one that *achieves a tight fit without stretching the plastic body;*** the purpose is to keep the hook 'captured' to the adapter ridge, but when the pushbutton is pressed (see Figure 4) it should have enough movement to trigger the internal electrical disconnect switch. Ideally, when pressing the button to test you would feel the switch click, but the hook won't release from the adapter.

Refer to more information on the charging station connector handle pushbutton below in the *Charge Port Unlocking* section, below

Now that the CapturePro is correctly aligned over the hook, **press the lock fully into place**, as shown in Figure 3. **Try the release pushbutton to make sure it can depress**, and if so then insert the locked converter arrangement into the Model S charge port. Charging should now begin.

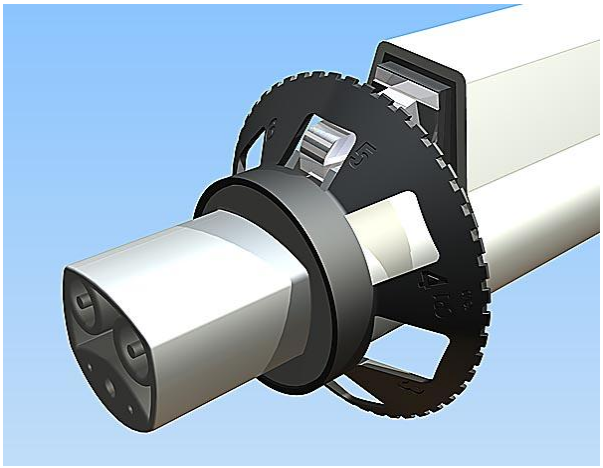


Figure 3

Pick the slot that achieves a tight fit without stretching the plastic body – it should allow the button to press, but block release of the locking hook.

Ending your charging session when using CapturePro

Charge Port Unlocking

When combined with CapturePro lock, your public charger is completely locked together as long as your Model S is locked and your keys are out of range.

The easiest and simplest way to unlock the charging port and disconnect the charging connector (plus adapter) is to **press the disconnect button** on the J1772 charging connector handle. Figure 4 (right, arrow) shows the disconnect button location.

When the disconnect button is pressed: the charger signals the car to end the charging session, the charge port unlocks, and you can then remove the charger (see Removal of Charging Hardware section).

Figure 4

Manual Unlocking procedure:

If the selected CapturePro slot holds the hook too tightly, the disconnect button may not depress enough to cause an electrical disconnection signal. In this case, the car does not detect the request to end charging, so charging will not end and the charge port will stay locked.

In this case, simply move to the car's main screen and use the Charging controls to disable charging manually, as follows:

1. Enter *Controls* Screen (via lower left button)
2. Press upper left "**Charging**" button (red arrow, right)
3. Press the "**Stop Charging**" button
4. Return to the *Controls* screen and press the "Charge Port" button (green arrow, lower left) to unlock
    - Even though charging has ended, If the car is drawing more than 5A of 'shore power' (interior loads such as AC or heater) then you might have to disable these loads temporarily for "**Charge Port**" button to unlock – refer to the Charging screen for charging level

Figure 5

Removal of Charging Hardware

Once the charge port is unlocked, the set of adapter + lock + charging connector can be removed from the car as a unit; slide the CapturePro back off the connector engagement hook; and finally, press the charging handle disconnect button again to mechanically raise the hook from the adapter slot, allowing the charging adapter to separate from the charging station connector "handle". Put the adapter and CapturePro away for later use.

Emergency removal instructions

In the **very unlikely** case that a software update or failed electronics prevents the unlocking and removal of your charging adapter, you can remove the CapturePro device with **diagonal wire cutters**, or you can stretch and break the body material with a **screwdriver**.

Power12 does not expect this situation – it is stated for safety reasons only. Alert Power12 to any situation of this type.

Product Details

The CapturePro lock is an ABS-plastic device, designed to lock the Tesla Model S J1772 charging converter, used in charging stations around North America. It was designed to be strong, but also be removable with wire cutters. It comes with a label system.

Label System

A labeling system was developed for the CapturePro. It consists of:

- A red label for the CapturePro, proper – this label indicates the locked condition of a properly assembled locked charging adapter and indicates to others that **you want to continue to use the charging station, uninterrupted**

- A set of two green labels for optional use on the Tesla J1772 adapter – these label are applied to each side of the adapter to indicate **it is OK for another EV user to disconnect the charging station –** see Suggested Use Model below. Additionally, the label leaves room to add an emergency contact number, allowing the next user to alert you to their requirement.

Suggested Use Model

For each charging session:

If you <u>require</u> the use of the charging station for your needs, then use the CapturePro lock – the labels were designed so that when the CapturePro is utilized it covers the J1772 adapter label such that "OK to Unplug" is not visible, but the emergency contact number is visible.

If you are charging your Tesla opportunistically, but the additional charging power is not <u>required</u> to achieve your travel goals, then consider charging <u>without</u> the CapturePro lock – simply use the Tesla adapter as you normally would; in this situation the "OK to Unplug" green label will show, as well as your contact number. This will let others know that you can be disconnected.

Power12 strongly recommends that CapturePro users **disconnect from a public charging station once charging is complete**, whether using CapturePro or not.

Failing to disconnect needlessly denies the charger to other users.

Also consider displaying your contact data so that others may alert you when they are in critical need of recharging.

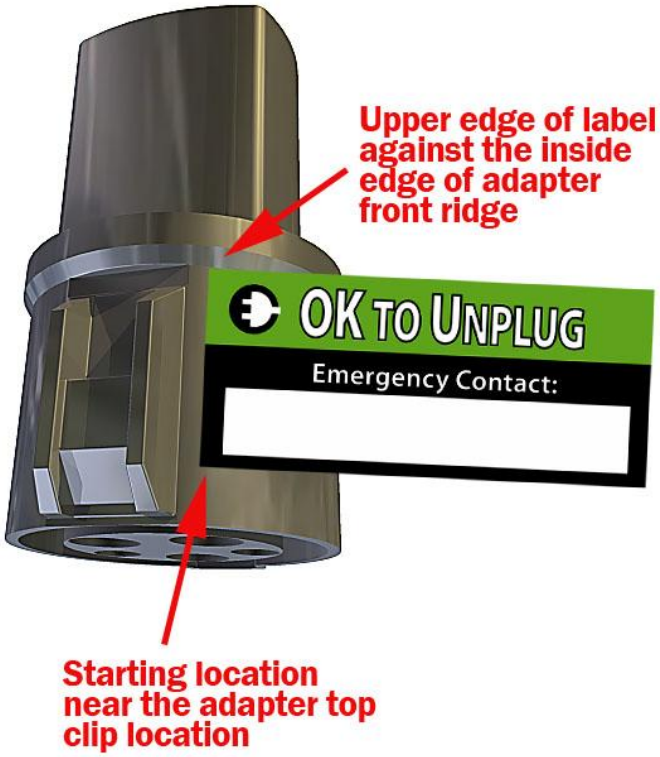
Applying the Label System

To add the red label: orient the CapturePro body with large ring down; remove the red "Locked" label from the label page, and align the top edge of the label parallel to the top of the ring as shown below, centering it in the ring space; then wrap the label slowly around the ring – the label should overlap by about 1/10th inch, or less. Press the label in place firmly before use.

Green Label: *A*dd the green labels to the J1772 adapter, as shown – apply each label starting at the J1772 adapter upper clip, with the plug logo and "OK" closest to the clip (labels are specific to each side). Align the upper edge of the label to the ridge – adjust until the label is square with the ridge – then slowly press the label against the adapter body around the outside edge. Attach the other label on the other side to complete the process.

There is room to optionally add your contact data (cell phone number, or mobile email) so that other charging users can alert you of their critical need for charging, or perhaps something which went wrong with your charging session.

We recommend using a Sharpie-type permanent marker for contact data, in the white area.



FAQ

Q: What does CapturePro do?

A: It locks the Tesla J-1772 charging converter to the J-1772 charging connector (handle), thus protecting your charging session while you are away; J1772 is the public infrastructure which most people use in North America for charging when not at home. Since the Model S has a built-in locking mechanism for capturing the converter to the car, the CapturePro uses that mechanism to lock everything together, until you unlock the charging port.

Q: What is the red and green label for?

A: The red label clearly indicates to other users of public infrastructure charger that you are using the charger and it is locked. The green label optionally provides your emergency contact number, and indicates that others may remove the charger. Therefore, use CapturePro when you don't want others to disconnect the charger, and don't utilize it when you are OK with other EV owners removing the charger for their use.

Power12 suggests that all EV users show respect to other users by never leaving a public charger connected to a car beyond the required time of charging -- it needlessly denies others the use of the charger.

Q: Does CapturePro have a warranty?

A: Yes - We warrant the construction of the CapturePro against failure due to material construction forever. Power12 reserves the right to refund the purchase price or replace with a new device.

Further, if your CapturePro is attacked or damaged, please contact Power12 for a free replacement (user pays only shipping).

Q: What's the CapturePro made of?

A: It's an engineering polymer, meant to meet best compromise between strength in normal use, and removability in an emergency case where it must be removed. A metal part might, in a *highly unlikely situation*, permanently lock the model S to a charging station and keep the car from moving from that location -- this situation is unacceptable, so we utilized strong plastic. Also, it allows predictable failure under direct attack, rather than causing damage to the car finish or failure of the charging system.

Q: Which J-1772 connectors correspond to the CapturePro slot numbers?

A: Our current knowledge is that each charging network utilizes different charging handles, so the directory would not always be valid for all stations. We felt is was easier to suggest that users simply adjust the CapturePro each time for the best fit, using the slot numbers as an easy reference for known stations.

Q: Does the CapturePro touch the car body in any way?

A: No.

Note: the CapturePro is wedged snugly onto the J-1772 converter, and the Model S charging connector traps the CapturePro between the converter and the car. Since the CapturePro is weaker than the charging connector, and it's wedged into that space tightly, inserting, adjusting or removing the CapturePro **won't touch, scratch or mark anything on the car**.

Q: What if someone tries to remove the CapturePro? What would they do, and could they damage the car or charger?

A: We considered this strongly in the design -- we wanted to provide a strong locking function, but not to invite further efforts that would damage the charging system or the car in any way (including the paint/body). Therefore, if someone attempts removal with CapturePro in place, they would likely wedge a tool between the charging handle hook and the CapturePro, and not anywhere against the body of the car - this would likely break the lock cleanly and allow the miscreant to access the charger **without further efforts**. Note, they would still not be able to steal the converter - it's exactly the same as a charging arrangement without the CapturePro: the converter stays locked until you unlock the charging port.