



TESLA VEHICLES PLUG-IN FOR HOMESEER

VERSION 1.9.3
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TERMS & CONDITIONS

Tesla has not officially published their API, though it has been documented by unrelated entities and is in use by a number of non-Tesla projects. This means that if Tesla changes their API, work will have to be done on this plugin to make it compatible, and that there is a chance the changes could render it inoperable. These changes are done without my knowledge or control, and your purchase/use of this plug-in is as-is and at your own risk. That being said, I own a Tesla and will always endeavor to resolve any issues created by Tesla’s changes whenever possible!

While there are currently no specific limits published, as with any API, excessive activity on your account may result in negative actions being taken on your account.

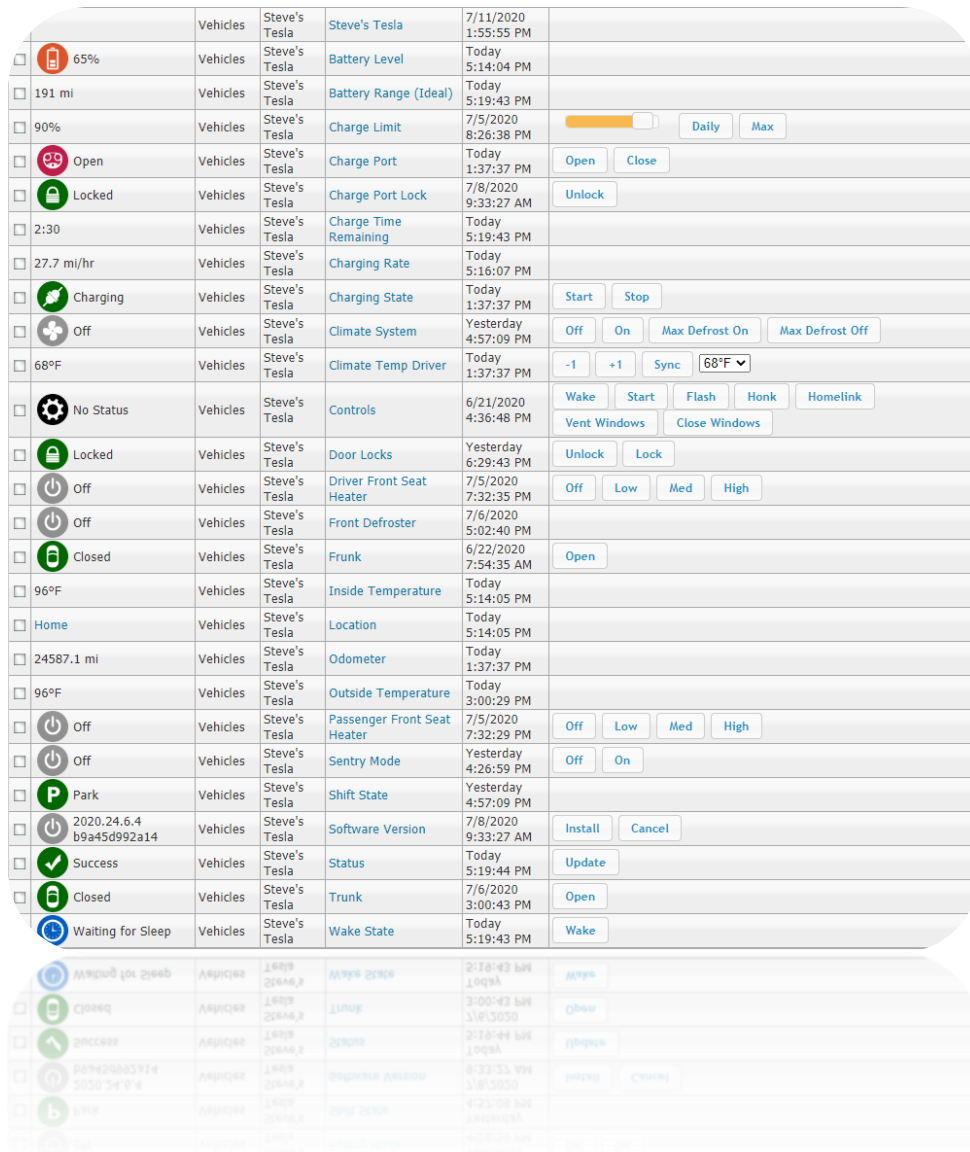
The ability to control items like door locks, trunks, and initiate remote driving of a Tesla vehicle without a key present is also a known risk that you accept when controlling your vehicle remotely, and could result in theft or loss of property.

By activating this plugin in your HomeSeer software, you acknowledge this risk and agree to indemnify and hold harmless the developer of this plugin (Steve Hill), HomeSeer Technologies, and any other third party plugin developers from any damages (including but not limited to financial, physical injury, time spent, opportunity cost, loss of account privileges, and the inability to control your vehicle or other connected devices).



OVERVIEW

The skWare Tesla Vehicles Plug-In for HomeSeer provides you with a way to monitor and control your Tesla vehicle from HomeSeer.



INSTALLATION

This Plug-In is installed using the built-in updater capability of HomeSeer.

Before you set it up, you must create your account with Tesla and you must have a vehicle registered to your account. If you can see your vehicle in the official Tesla mobile app, you should also be able to see it in this plugin once your account is connected.



SYSTEM REQUIREMENTS

The skWare Tesla Vehicles Plug-In for HomeSeer runs on both Windows and Linux installations of HS3 and has been tested with version 3.0.0.148+. Earlier versions of HS3 should work but have not been specifically checked. This Plug-In also supports HS4, though settings pages will continue to reflect the HS3 style.

Due to modern network security restrictions, this plugin is not supported on Windows XP, and for Linux/Zee users, it requires Mono version 4.8.1 or higher. Please see the [support forum](#) for more details.

You must have a Tesla vehicle connected to the account you're using. To date, this plugin has been developed and tested with the following models:

- Tesla Model S
- Tesla Model 3*
- Tesla Model X
- Tesla Model Y

Other models are also expected to work, but there are features of those vehicles that the author cannot fully test. Please report any issues (or successes) on the forums so they can be resolved/documented.

POWER MANAGEMENT

In order to minimize “vampire drain” (the loss of range and battery levels over time when not driving), it is important to allow your car to sleep when not in use. When the car is asleep, no data (other than whether it is “online” or “asleep”) is available without waking it up.

One of the challenges with these vehicles is that both the amount of time it takes to wake up a sleeping car and the amount of time it takes the car to go into sleep mode are unpredictable. The plugin has been designed to give you options that help control the way in which it interacts with your vehicle and to allow you to minimize the drain caused by polling it. These options are detailed in [Configuration](#) below, but as you use the plugin, please keep in mind the variability of the “wake” process (which may sometimes fail) and for how long it takes the car to fall asleep – there is no command to tell it to do so, it's simply a matter of not disturbing it for as long as it takes.

See <https://support.teslafi.com/knowledge-bases/2/articles/161-my-vehicle-is-not-sleeping> for more info on the challenges with getting these cars to go to sleep in general.

When the car is awake (or when it's in use, if the vehicle option to “keep awake while charging/driving” is enabled), the plugin will keep updating the data, but once those conditions are no longer met, it will stop updating and only check to see if it's asleep for a period of time. Once it goes to sleep, it simply monitors to see when it's awake again so it can keep updating. Note that the “Update” button on the Status device will force the car awake to do the update, after which it will allow the car to go back to sleep before another schedule polling happens. (If the “Wake to Update” options is turned on, it will always attempt to wake the car with every polling interval.)

Of course, you can use HomeSeer events to create your own polling process as well by forcing updates at specific times or based on other conditions, too.

CONFIGURATION

After installing the Plug-In, a new “Tesla Vehicles” menu item can be found under “Plug-Ins” menu in the HomeSeer browser interface. This plugin supports multiple instances, so if you have more than one account, you can use the “+” button on HomeSeer’s “Manage Plugins” page to add additional instances (one per account). The default instance is named “Account 1”, and due to HomeSeer limitations, cannot be changed.

The “Config: <instance>” item will take you to the configuration page, where you are able to set up your connection to your Tesla account, choose which vehicles to connect, and set up options for the plugin.

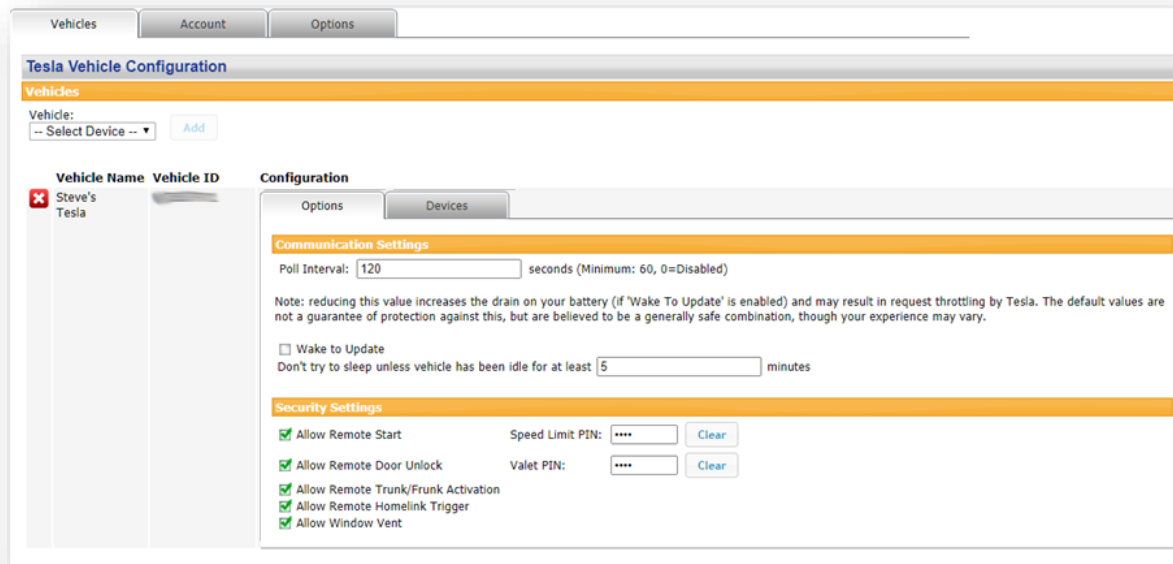
Not pictured: Refresh Token input (required).

On the “Account” tab, you must first accept the Terms & Conditions, then you can provide your access token, refresh token, and optionally your account password. (The password is not used in plugin authentication but is required by Tesla’s API in order to use the “Remote Start” capability.)

Acquiring the token details can be done with 3rd party applications on Apple or Android, such as [Tesla Tokens on the Google Play Store](#) or [Tesla Token on the Apple App Store](#). *Disclaimer: This plugin nor its author have any affiliation nor make any warranty regarding these or any similar applications.*

The Status device will alert you if your authentication is failing by changing to “Login Failed” so you can create an event based on this value to provide a notification if this occurs.

On the Vehicles tab you can select which vehicle(s) from this account you want to connect to HomeSeer, as well as change configuration options per vehicle. (Note: when adding a new vehicle, you must wait for the first successful update so the plugin can determine the configuration of the vehicle before you can set the options.)

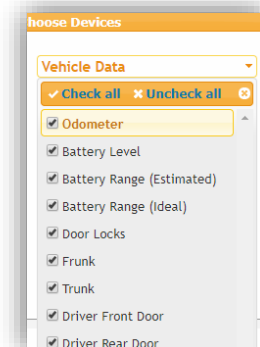


Once the vehicle has updated, the configuration tab for the vehicle will be displayed, which allows you to configure the polling options, enable/disable some sensitive options, and choose which devices to create in HomeSeer.

Polling for updates happens at the specified interval (or not at all if the interval is set to 0), but the full data is only returned if the vehicle is online. The “Wake to Update” option will force the vehicle awake at each interval, and the “Don’t try to sleep unless vehicle has been idle for at least” setting will keep it awake for a minimum period of time when the vehicle becomes idle. See [Power Management](#) for more details.

After the initial setup and first update, you can then choose which devices you want to see in HomeSeer by returning to this screen. See [Devices](#) for more information on the available options.

You can also click “Remove” on any vehicle, which will delete vehicle and all its associated devices. If for any reason you need to reset the plugin, you can disable it from HomeSeer’s “Manage Plugins” page and then manually delete any devices created by the plugin and (optionally) delete the config file in your HS3\Config directory (HSPI_SKWARE_TESLA_VEHICLES_<instance>.ini).



The “Options” tab provides control over the power management settings and the logging output of this plugin.

The Power Management section allows you to specify how hard to try to wake up the vehicle. It will send the “wake up” command every X seconds (“Time to wait between tries”), and it will try N times (“Number of tries to wake up”) before considering the attempt failed. This will result in your command not being processed. It also contains a setting for how long to wait for sleep mode before checking the status again (“Recheck status if not asleep”). This is useful if the vehicle is supposed to be going to sleep but has been woken up due to a charging cable being plugged in or a new drive started. See [Power Management](#) for more information.

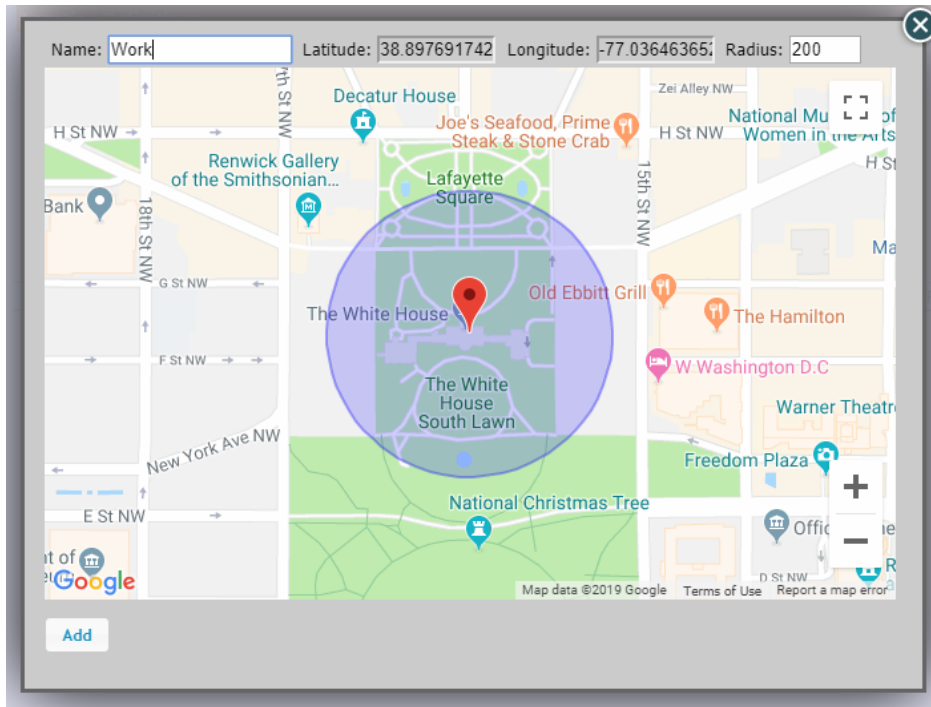
Optional log data can be recorded in both the HomeSeer log and in a stand-alone Plug-In log (which can be found in the “Logs” directory of your HomeSeer installation). Please note that the “TRACE” message level should only be used when troubleshooting or sending in for support as it can have a significant impact on performance.

The “Download Log File” and “Clear Log File” buttons on this page make it easier to manage the plugin log files on your server, as you are no longer required to access the file system to get them when requested for support.

LOCATIONS

The Tesla Vehicles plug-in allows you to define specific geolocations to label the location where your vehicle is currently located. This allows you to create events like “If Location is Home and Charging is Disconnected, then Run Event “Remind me to plug in the car”, for example.

To do this, use the “Locations” submenu from the Plugins > Tesla Vehicles menu item and “Add New Location”. Provide a name and drag the map until your desired location is under the marker. You can also adjust the radius size.



Clicking “Add” will add the location to your list of locations and update the “Location” device with a new Status matching the name you provided. From the list you can also remove any locations you no longer need.

Tesla Vehicle Locations

Location Definitions

[Add New Location](#)

	Name	Latitude	Longitude	Radius
	Home	██████████	██████████	50
	Work - Steve	██████████	██████████	100
	Church	██████████	██████████	200

(Note that to use this feature, you must enable the “Location” device for each vehicle.)

DEVICES

In addition to the Parent device, three mandatory devices (of type “Tesla Vehicle”) are always created:

- A “Controls” device with Flash, Honk, Start (if allowed), Vent Windows (if allowed), Close Windows (Model 3/Y only), and Homelink (if allowed) controls. The “Wake” button was also left on this device to prevent breaking any existing events. It is suggested to change your events to the “Wake State” device instead.
- A “Wake State” device that shows whether the vehicle is online or asleep, or waiting for a change. This device also has a Wake button.
- The Status device, representing the result of the last command, with an Update button. It also tracks the last command date/time (so the date/time changes even if the status does not).

Here is the full list of other devices and their Device Types:

Tesla Vehicle Data	Tesla Climate System	Tesla Charge Data	Tesla Drive Data
Battery Level	Battery Heater	Charge Current (<i>Amps</i>)	Shift State
Battery Range (Estimated)	Climate System (<i>On/Off/Max Defrost</i>)	Charge Limit (<i>Percent/Daily/Max</i>)	Speed
Battery Range (Ideal)	Climate Temp Driver	Charge Port (<i>Open*/Close*</i>)	Latitude
Battery Range	Climate Temp Passenger	Charge Port Lock (<i>Unlock</i>)	Longitude
Door Locks (<i>Lock/Unlock</i>)	Driver Back Seat Heater* (<i>Off/Low/Medium/High</i>)	Charge Rate	Location
Driver Front Door	Driver Front Seat Heater* (<i>Off/Low/Medium/High</i>)	Charge State (<i>Start/Stop</i>)	
Driver Front Window	Driver Rear Seat Heater* (<i>Off/Low/Medium/High</i>)	Charge Time Remaining	
Driver Rear Door	Front Defroster	Charge Voltage	
Driver Rear Window	Inside Temp	Distance Added (Estimated)	
Frunk (<i>Open*</i>)	Middle Rear Seat Heater* (<i>Off/Low/Medium/High</i>)	Distance Added (Ideal)	
Odometer	Outside Temp	Energy Added	
Passenger Front Door	Passenger Back Seat Heater* (<i>Off/Low/Medium/High</i>)	Max Charge Counter	
Passenger Front Window	Passenger Front Seat Heater* (<i>Off/Low/Medium/High</i>)		
Passenger Rear Door	Passenger Rear Seat Heater* (<i>Off/Low/Medium/High</i>)		
Passenger Rear Window	Rear Defroster		
Sentry Mode (<i>On/Off</i>)	Side Mirror Heaters*		
Software Version (<i>Install/Cancel</i>)	Steering Wheel Heater* (<i>On/Off</i>)		
Speed Limit Mode (<i>On/Off</i>)	Wiper Blade Heater*		
Speed Limit (<i>Set</i>)			
Sunroof* (<i>Vent/Close</i>)			
Trunk (<i>Open*/Close*</i>)			
Valet Mode (<i>On/Off</i>)			

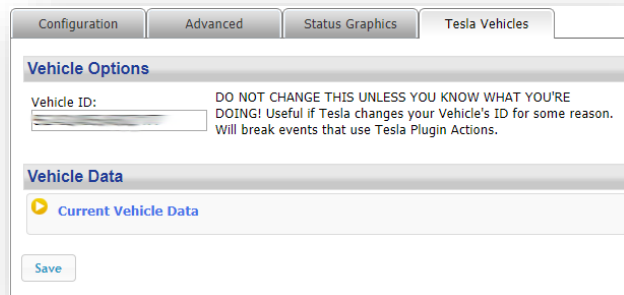
*Depends on vehicle configuration.

Controllable.

Can be restricted in options.

DEVICE CONFIGURATION

The plugin also provides additional information on the root device itself. This includes the ability to update your HS Vehicle to use a different Vehicle ID, which should only be used in extenuating circumstances when Tesla changes the ID of your car behind the scenes. If this happens, you'll receive a message in the Tesla app informing you your



car is no longer on your account and signs you out. After signing back in, it's still there, but the ID will have changed. To find the new ID, you can view the HTML source of the config page where you add new vehicles.

You can expand the "Vehicle Data" slider to see the JSON data provided by Tesla, which is always very useful when troubleshooting or reporting issues.

The "Status Graphics" for this plugin are based entirely on graphics contained within the "<Homeseer>\html\skWare\TeslaVehicles\images" folder (see [Appendix 1](#)). If you prefer different icons, you can replace those (keeping the same name/case/extension) with your own and prevent any recurring or future changes to those "Status Graphics" pairs from reverting the icons to the original settings.

ACTIONS

This plugin supports two specific actions that can be triggered via Events:

- Schedule software update at a specified hour; this will always be the next occurrence of that time period
- Send an address to the navigation system

FUNCTIONS

There are two functions supported by this plugin:

- Navigate(<vehicle ID>, <address>)
 - The Vehicle ID can be found on the Root device under "Current Vehicle Data"
 - The address must be a valid address that can be found in Google Maps
- ScheduleUpdate(<vehicle ID>, <seconds>)
 - The Vehicle ID can be found on the Root device under "Current Vehicle Data"
 - The number of seconds is the delay until the software is installed; 0 = immediately

SUPPORT

Support for the skWare Tesla Vehicles Plug-In for HomeSeer is provided through the standard HomeSeer channels. The primary mechanism is via the [Tesla Vehicles forum](#) on the HomeSeer website. The author can be contacted directly at steve@skware.net.

Links to the documentation and the support forum can be found on the Plugin's "Docs" page in the Plugin menu.

APPENDIX 1: FILES

The following files are used by the Plug-In. Directories in bold are part of the standard HomeSeer installation. Files marked with * are created by the software during usage; all other files are included in the installation.

<HomeSeer Installation Directory>

```

HSPI_SKWARE_TESLA_VEHICLES.exe
HSPI_SKWARE_TESLA_VEHICLES.exe.config
\Bin
  \skWare
    \TeslaVehicles
      Newtonsoft.Json.dll
\Config
  HSPI_SKWARE_TESLA_VEHICLES<_instance>.ini*
\Docs
  \skWare
    \ TeslaVehicles
      skWare Tesla Vehicles Plug-In User Guide.pdf
\html
  \skWare
    \ TeslaVehicles
      skWare Tesla Vehicles Plug-In User Guide.pdf
      locationpicker.jquery.js
      \images
        asleep.png
        battery-heater-no-power.png
        battery_0.png
        battery_100.png
        battery_25.png
        battery_50.png
        battery_75.png
        car_closed.png
        car_open.png
        charging.png
        climate-off.png
        climate-on.png
        complete.png
        disconnected.png
        download.png
        drive.png
        error.png
        front_defrost_on.png
        frunk_open.png
        Heat.png
        installing.gif
        locked.gif
        neutral.png

```

no-power.png
nostatus.gif
off.gif
ok.png
on.gif
online.png
park.png
port_closed.png
port_open.png
rear_defrost_on.png
reverse.png
schedule.png
seat_heat_high.png
seat_heat_low.png
seat_heat_med.png
speed_limit_on.png
sunroof_open.png
trunk_open.png
unknown.png
unlocked.gif
update-available.png
waiting.png
window_closed.png
window_open.png
android.png
apple.png

\Logs

HSPI_SKWARE_TESLA_VEHICLES<_instance>.log*

APPENDIX 2: KNOWN ISSUES

The following known issues are present in this release of the plugin:

- The width of a tab inside the Tab control provided by HomeSeer 3 has a fixed width in the CSS file shipped with HS3. To fix this, you can edit "tabs.css" in your HS3\html\css directory and comment out the "width" attribute in the first section ("/* width:994px; */"). Note that this may have an impact on the appearance of other areas of the product that could have been built around this restriction.