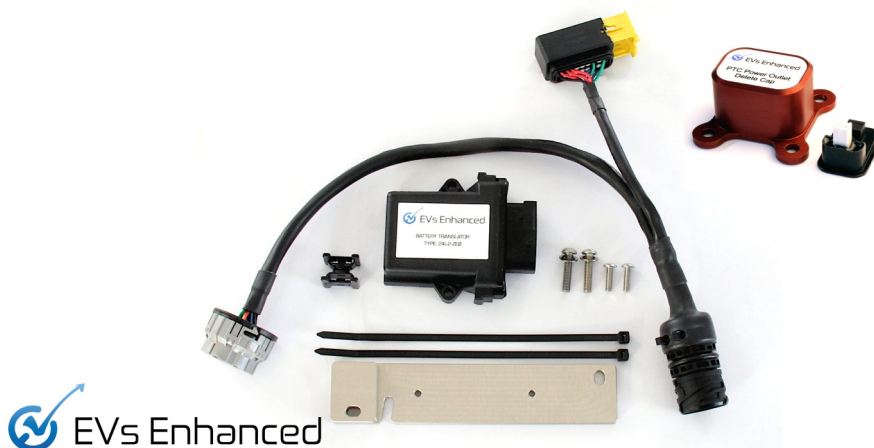


## Nissan Leaf High Voltage (HV) Battery Translator Fitting Instructions (Full Loom Kit to suit Leaf models 2011-2012)

Documentation Revised Dec 2022



### **Kit Contents:**

- 1 x HV battery translator module
- 1 x Custom wiring loom
- 1 x Anodised aluminium mounting bracket
- 2 x M5 16mm button head screws
- 2 x M6 25mm button head screws
- 2 x M6 washers
- 2 x 200mm cable ties
- 1 x Plastic swivel mount
- 1 x Anodised PTC power outlet delete cap
- 1 x PTC power delete insert

### **Tools required:**

- 1 x M3 hex key
- 1 x M4 hex key
- 1 x M10 socket with wrench
- 1 x Small pair of side cutters

### **Also Required:**

- 1 x EVs Enhanced custom VCM reflash if upgrading pack capacity (30/40/62)
- 1 x Compatible Replacement HV Battery Pack from a 2013 or newer Leaf
- 1 x Set of HV Battery Under Trays
- Thread Locking Compound

Thank you for supporting EVs Enhanced with your purchase. This HV Battery Translator kit allows you to upgrade your Nissan Leaf with a newer HV battery helping extend the usable life of your vehicle. For product support, please contact your reseller.

**Please Note:**

**Unlike 2013 and later version, Model Year 2011-2012 Nissan Leafs have 24kWh hard coded into both the lithium battery controller (LBC) in the original battery pack, but also in the vehicle control module (VCM). When upgrading the battery capacity beyond 24kWh (using a 30kWh, 40kWh or 62kWh battery pack) even with our battery translator functioning correctly, the VCM will incorrectly override some calculations made by the new LBC resulting in incorrect information displayed on the car's instrument cluster. To address this problem, we have developed custom firmware for the VCM which does not override information received by the LBC. The same custom VCM firmware is used for all battery capacity upgrades, however there are different custom VCM firmware versions for different world markets as well as for heated or non-heated battery packs. The VCM firmware update can be completed by us or one of our partners using our Service and Reporting Tool (SRT). This can be completed either with the VCM still in the vehicle (via the car's OBD2 port) or on a test bench after VCM removal.**

**Also unlike 2013 and later versions, Model Year 2011-2012 Nissan Leafs have different VCM firmware depending on whether the HV battery has heating or not. The VCM firmware (heated type or non-heated type) must match the type of replacement battery being fitted or the conversion will have problems. It is therefore necessary to confirm if the replacement battery pack is heated or not before having the custom VCM custom firmware reflash.**

**Important Safety Message:**

**Electric Vehicles use high voltage which is potentially dangerous. Ensure that all appropriate safety equipment is used and safety precautions are followed when operating around high voltage.**

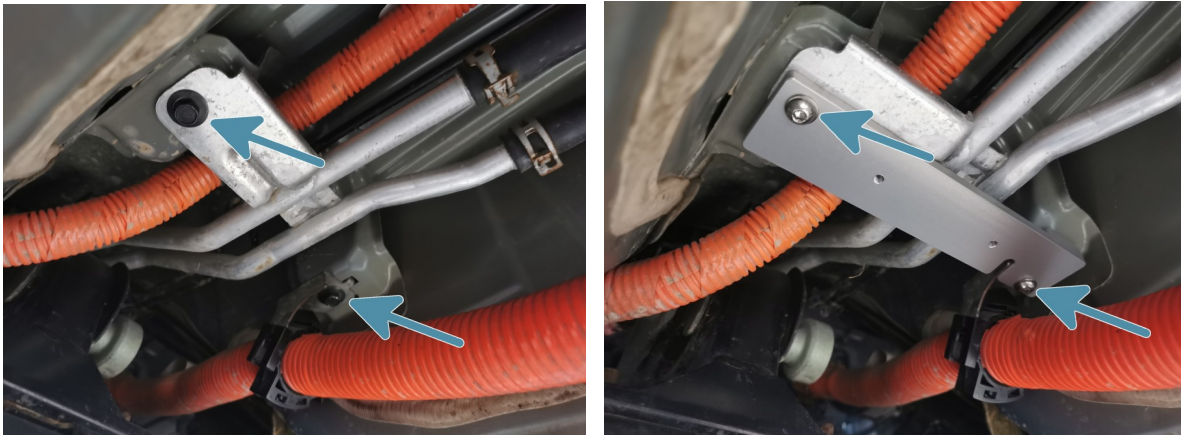
**Before installing your new HV Battery Translator:**

1. Before swapping out the original battery pack, have the VCM firmware reflash completed if the replacement battery had a new rated capacity higher than 24kWh. The car will still function with the original battery after our custom VCM firmware has been installed.
2. Check to ensure no DTC codes are present using a compatible diagnostics scan tool (Consult, LeafSpy Pro, SRT etc). Check that the correct type of battery translator has been supplied for the battery type and car type (24L-2-ZE0, 30-2-ZE0, 40-2-ZE0 or 62-2-ZE0).
3. Fit the PTC Power Outlet Delete Cap to the replacement HV battery (**refer to the fitting user guide**)
4. Replace the HV battery. This guide illustrates how to correctly mount and install the HV Battery Translator, but does not cover the replacement of the battery pack itself. Please refer to the factory service manual for details on the safe procedure for HV battery replacement. However, it is important that the vehicle is correctly powered down with the 12V battery disconnected and the safety disconnect switch in the HV battery removed prior to working around the HV system.

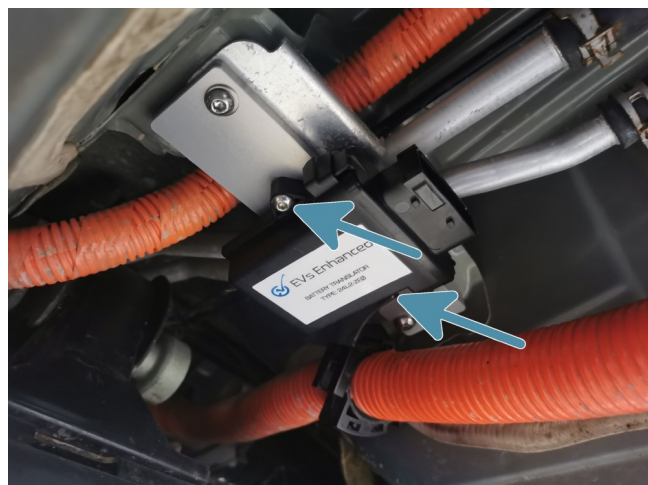
5. At this point, the HV connector at the front of the to the battery pack should be correctly refitted, but the round communications connector should still be unconnected as shown below.



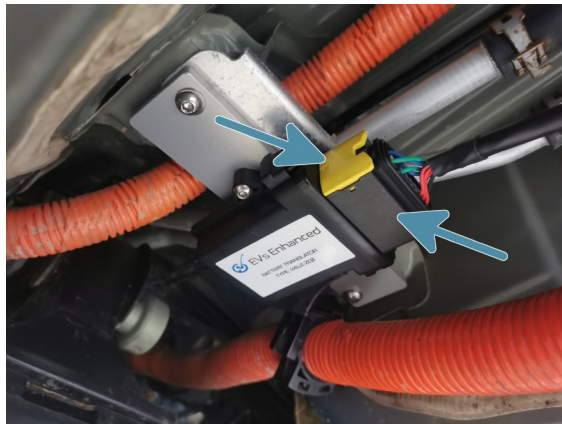
6. Fit Translator Mounting Bracket - Remove the 2 x M6 bolts holding the HV Battery Cable Support bracket. Align the mounting bracket and fix in place using the 2x supplied M6 button head screws and washers on either side as shown below. Thread Locking Compound is recommended.



7. Mount the Battery Translator to the bracket using the 2 x supplied M5 button head screws ensuring the translator connector is facing the rear of the vehicle. Thread Locking Compound is recommended.



8. Fit the supplied wiring harness making sure no cable strain exists and all connectors are clipped firmly in place. Fix wiring harness in place to the top of the HV Cable using the supplied wiring support and 2 x cable ties as per below images, trim off cable tie excess using side cutters taking care not to damage any wiring.



9. Refit under trays and install the HV safety disconnect switch.

10. Reconnect 12V Battery.

11. Turn the car on into ready mode. Check for an illuminated check engine lights and/or DTC codes using a diagnostics scan tool to indicate a problem with the installation. If using a current Battery Translator with firmware version V1.00.2.01 or later, battery pairing is no longer required so the upgrade should now be complete.

If using an earlier battery translator with older firmware, the vehicle will be in “turtle” mode and checking DTC codes will show the code P3102. In this case, Nissan’s official battery pairing process needs to be completed. This can be done through the OBD2 port using a suitable tool that has this capability (HV Battery Pairing tool, SRT, Consult with card, etc.)

