48V Battery State Of Charge (SOC) check

DATE: MARCH 5 2025

This Technical bulletin serves as a guide and provides additional info regarding how to check the 48V battery SOC. As indicated in the bulletin MAS003379, it is mandatory to periodically check the SOC (State of Charge) of batteries stored or installed on in-stock vehicles.

To read out the State Of Charge (SOC) of a stored battery using the MDEVO tool, it is needed the mandatory special tool **900029797 – BPCM MHEV 48V Battery Diagnostic Harness**.
Only for M182 vehicles it is also needed the special tool **900030805 - M182 48V Battery car adapter**.

48V Battery Diagnostic Harness

M182 48V Battery car adapter

The procedures listed below are described in the following pages:

- PROCEDURE A: Battery off board (In storage)
- PROCEDURE B: Battery installed on vehicle
- PROCEDURE C: Battery installed on vehicle (ECM MHEV not responsive) [M182]

PROCEDURE A: Battery off board bench check (In storage)

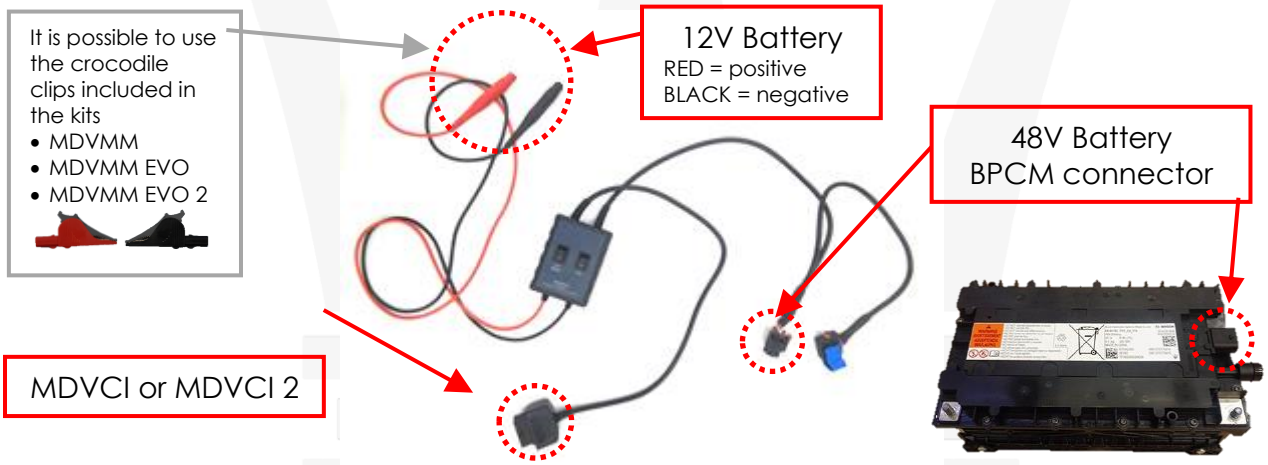
SAFETY NOTES

Please refer to the bulletin MAS003379 for detailed and specific safety prescriptions.

For disassembly and storage of 48V Battery, follow the relevant instructions and safety guidelines.
Use suitable gloves to 48V Battery handling.
Be careful to the possible high temperatures.
Check the integrity of the packaging.
Make sure the battery is NOT upside down in the packaging.
Do not turn the battery upside down during any checks or movements.
During handling / assembly operations, do not tilt the battery by 45° for a duration greater than 10 sec.

1. Turn to OFF the switches on the 48V Battery Diagnostic Harness box;

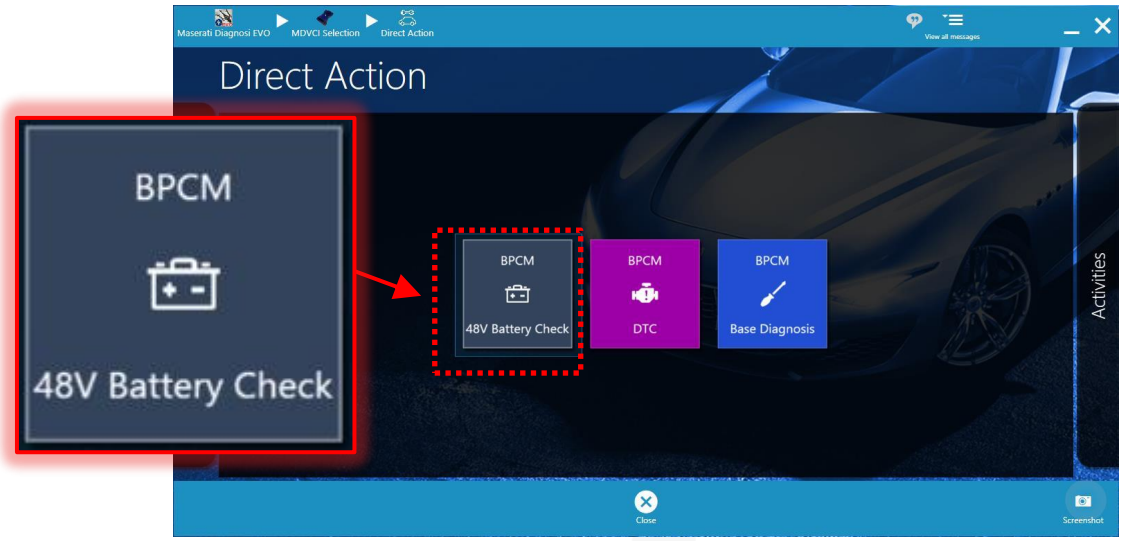
2. Connect the 48V Battery Diagnostic Harness as indicated in the following picture:



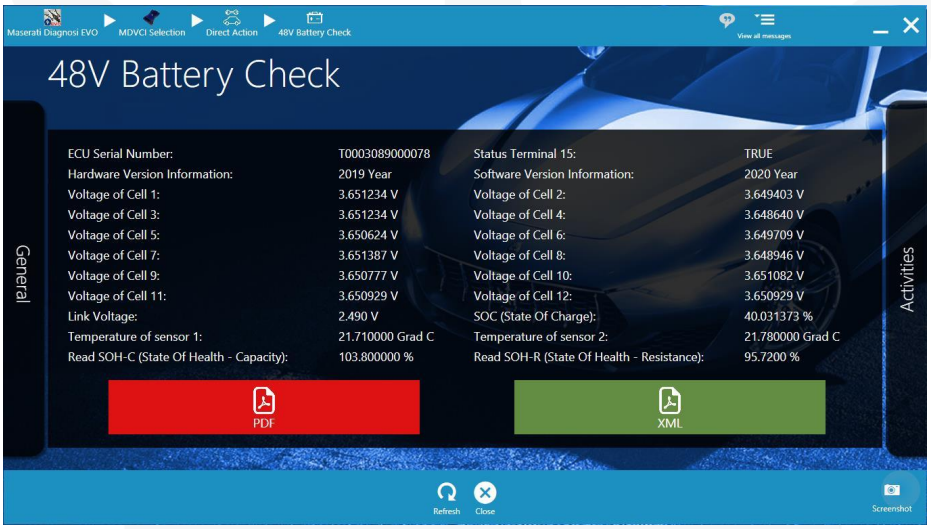
3. Turn to ON the 12V Battery switch on the 48V Battery Diagnostic Harness box;
4. Turn to ON the Key switch on the 48V Battery Diagnostic Harness box;

5. Start the MDEVO software application, wait until the MDVCI / MDVCI 2 has been discovered and select the "Go Direct" function.

6. Select the BPCM 48V Battery Check function.



7. All the relevant values will be showed for check:



The report of the BPCM parameter is available by clicking on the PDF button;

8. At the end of the procedure, please turn to OFF the Key switch on the 48V Battery Diagnostic Harness box;
9. Wait 10 seconds;

> ⚠ **Not waiting the necessary time could damage the hybrid components.**

10. Turn to OFF the 12V Battery switch on the 48V Battery Diagnostic Harness box;
11. Disconnect the 48V Battery Diagnostic Harness.

PROCEDURE B: Battery installed on vehicle

> ⚠ **SAFETY NOTES**
>
> Please refer to the bulletin MAS003379 for detailed and specific safety prescriptions.

To check and evaluate the State Of Charge (SOC) of the 48V battery, please use the MDEVO software application.

The parameters are available in the dedicated section of the BPCM control unit.

It is possible to save and store the values by using the standard reporting functions.

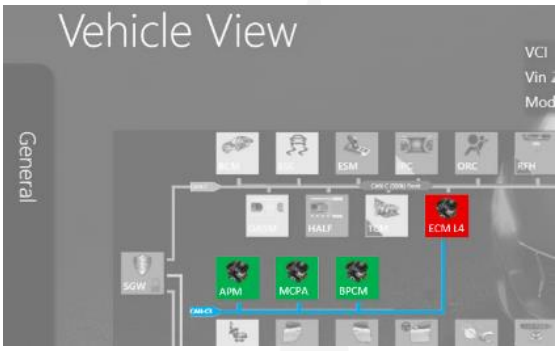
All the operating instructions are described in the MDEVO Help Manual, available on Modis.

PROCEDURE C: Battery installed on vehicle (ECM MHEV not responsive) [M182]

SAFETY NOTES

Please refer to the bulletin MAS003379 for detailed and specific safety prescriptions.

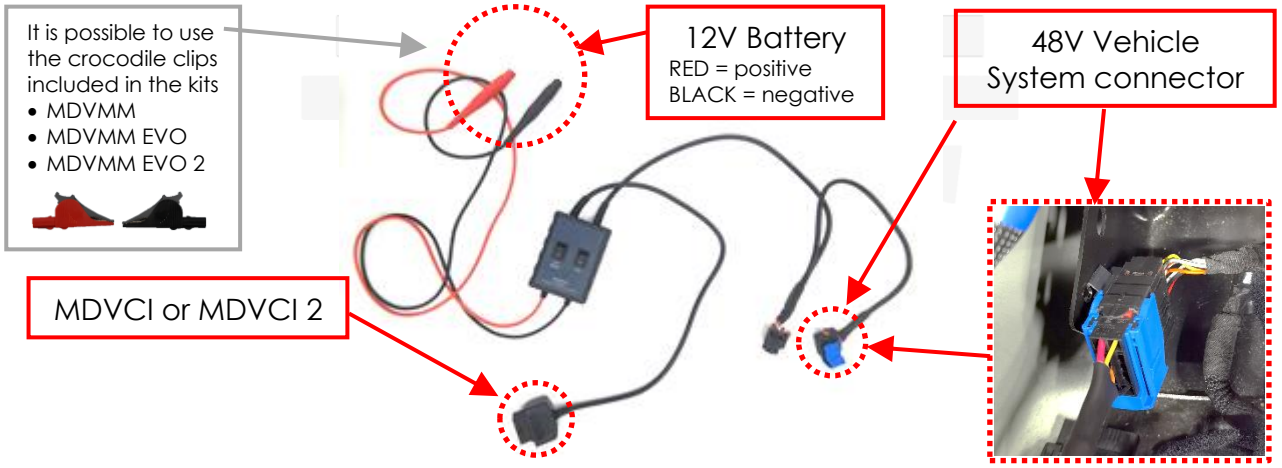
1. If the ECM on a MHEV is not responsive, the BPCM diagnosis via OBD port is not possible, and the vehicle view will show the hybrid ECUs a follows:



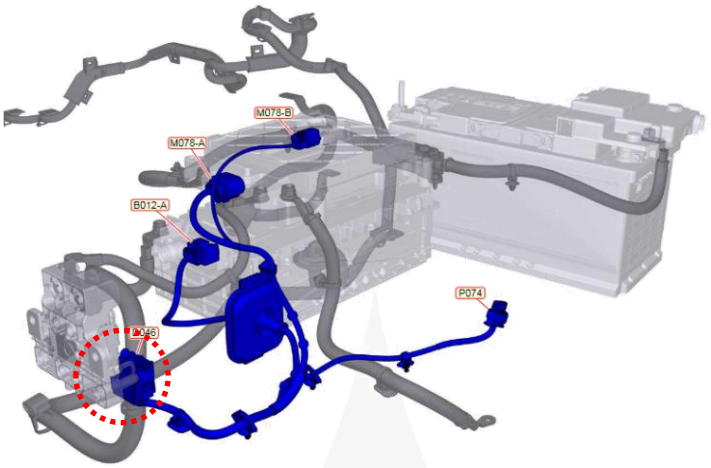
2. Please disconnect the 48V system following the instruction of the workshop manual procedure **08.AA.012 74 48V BATTERY CAN DISCONNECTION**.

3. Turn to OFF the switches on the 48V Battery Diagnostic Harness box;

4. Connect the 48V Battery Diagnostic Harness* as indicated in the following picture:



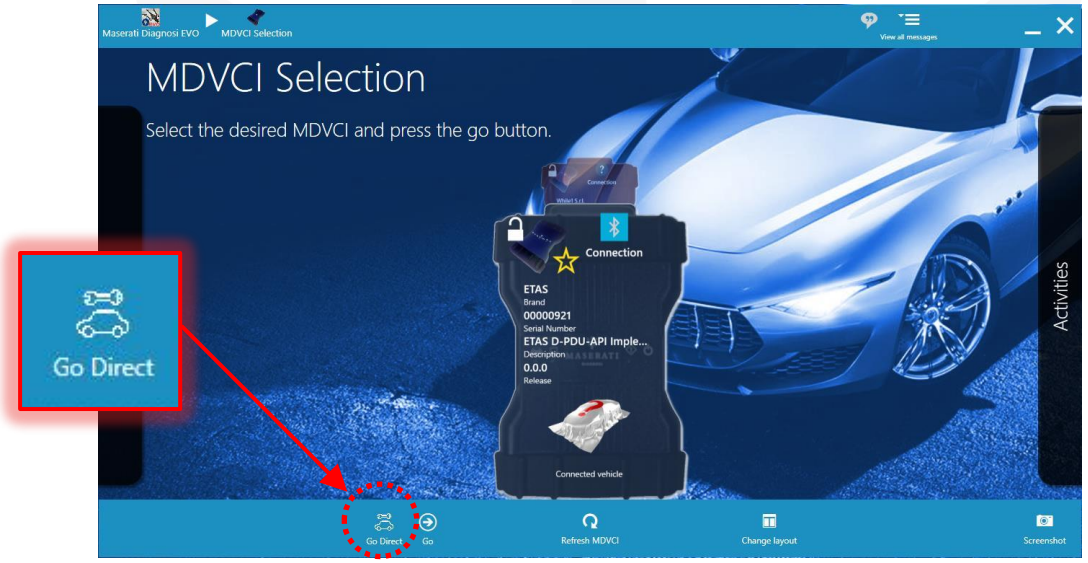
*Only for M182 vehicles connect the M182 48V Battery car adapter (900030805) to the 48V Battery Diagnostic Harness.



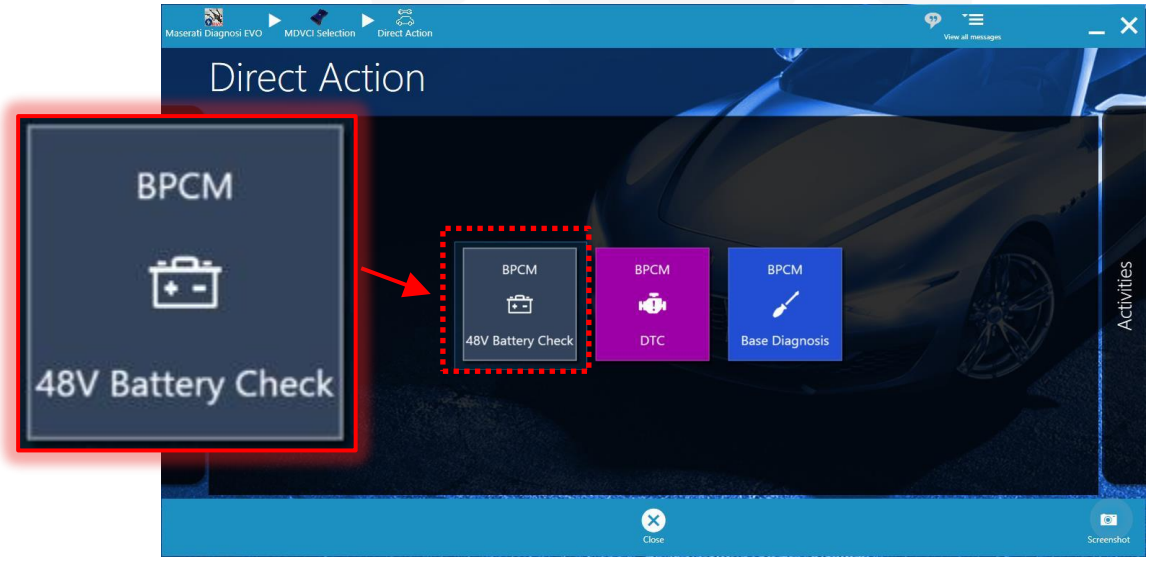
5. Turn to ON the 12V Battery switch on the 48V Battery Diagnostic Harness box;

6. Turn to ON the Key switch on the 48V Battery Diagnostic Harness box;

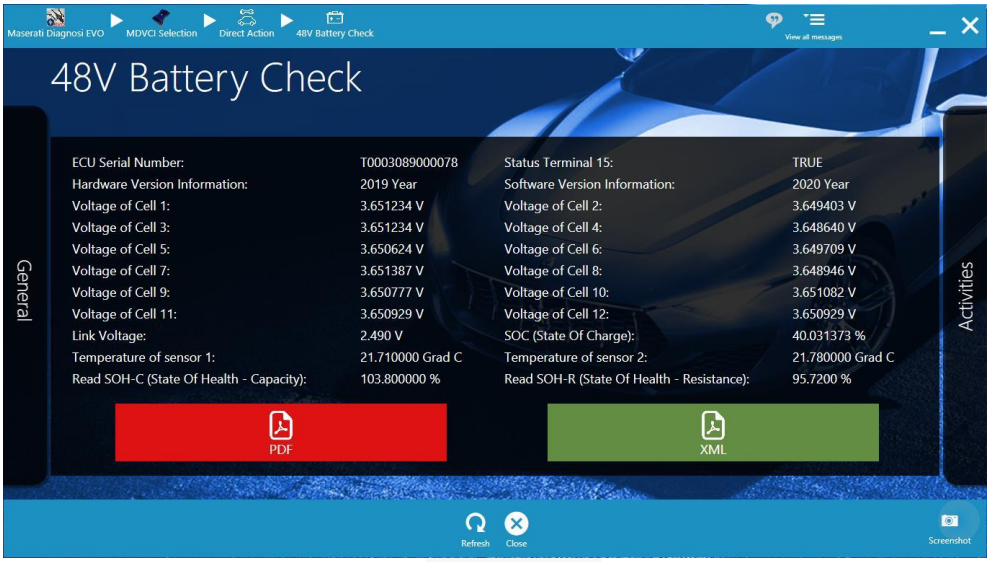
7. Start the MDEVO software application, wait until the MDVCI / MDVCI 2 has been discovered and select the "Go Direct" function;



8. Select the BPCM 48V Battery Check function;



9. All the relevant values will be showed for check:



The report of the BPCM parameter is available by clicking on the PDF button;

10. At the end of the procedure, please turn to OFF the Key switch on the 48V Battery Diagnostic Harness box;

11. Wait for 10 seconds;

Not waiting the necessary time could damage the hybrid components.

12. Turn to OFF the 12V Battery switch on the 48V Battery Diagnostic Harness box;

13. Disconnect the 48V Battery Diagnostic Harness.