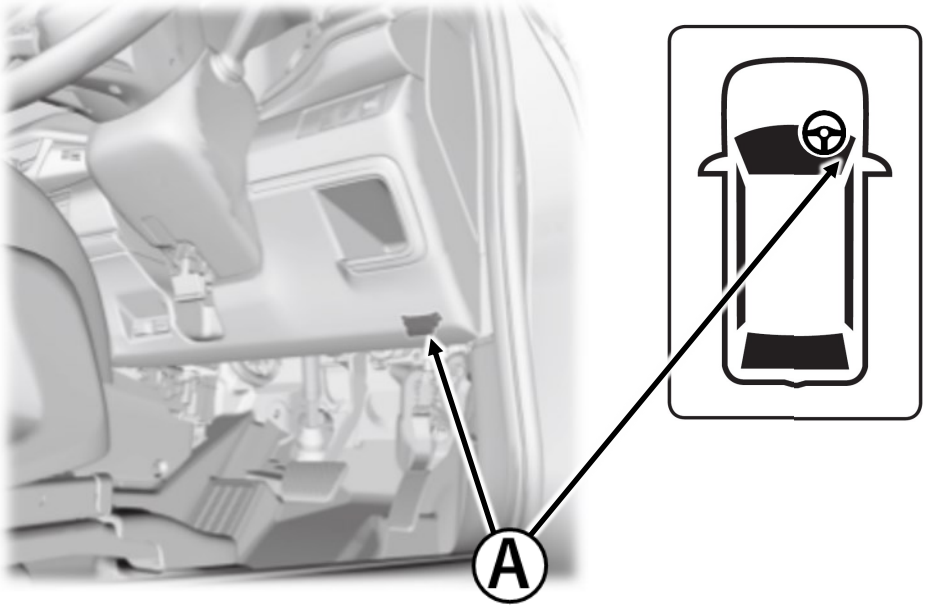
Battery state of health check (SOCE & Reset)

Battery in vehicle:

Connection of diagnostic tool (HDS) to OBD connector.

OBD connection location (A): (RHD shown, LHD is a mirror image)



1. Turn the vehicle to the OFF (LOCK) mode.

2. Connect the HDS to the OBD (**A**) located under the driver's side of the dashboard.

3. Turn the vehicle to the ON mode, but do not turn the vehicle to the READY TO DRIVE mode.

4. Activate HDS, then make sure the HDS communicates with the PCM and other vehicle systems.

5. Access the Electric powertrain data list in HDS to view the “High Voltage battery SOH” reading.

6. The powertrain PCM can be reset with the HDS function.

Data list example:

Electric Powertrain

DTC — Sample Time : 0.00s

Battery Condition Monitor Module A Backup Source Voltage	14.52V
Battery Pack Capacity	191.0Ah
DC socket temperature 1	24°C
DC socket temperature 2	25°C
EVSE Energy to be Delivered	0W·h
HV Battery Cell Maximum SOC	72.2%
HV Battery Cell Minimum SOC	46.5%
HV Battery Current Sensor A Sensing Current	0.8A
HV Battery Line A Total Voltage	376.3V
HV Battery Maximum Cell Voltage	3928.0mV
HV Battery Minimum Cell Voltage	3682.0mV
HV Battery Secondary Current Sensor A Sensing Current	0.8A
HV Battery Total Current	0.8A
High Voltage Battery SOH	100.0%
IG Hold Relay B (Battery Condition Monitor Module A)	ON

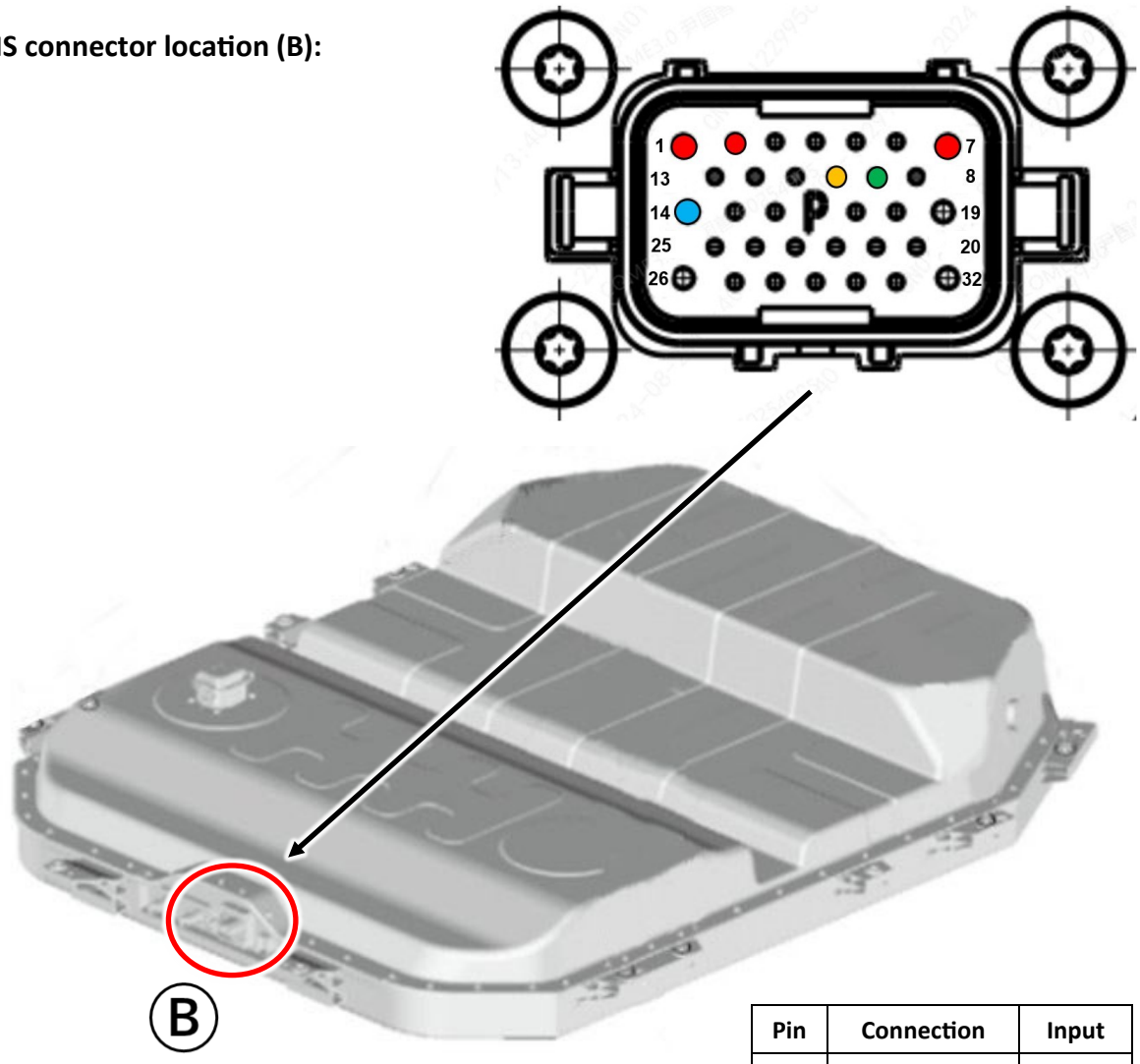
Battery without vehicle.

Connect the CAN reader tool to BMS connector (32 pin male).

Recommended tool:
CAN Reader: Vector VN16xx or equivalent tool compliant with ISO 14229-1.

Note: ISO 14229-1 compliance is highly recommended for optimal performance.

BMS connector location (B):



Pin	Connection	Input
1	+B_VBU	12v +ve
2	IG1	12v +ve
7	IGB	12v +ve
9	CAN_H	CAN
10	CAN_L	CAN
14	GND (-ve)	-ve

Method of reading SOCE:

① Send ID:18DBEFF1x DLC:8 「03 22 20 2A AA AA AA AA」 from VN1610 to BAT.

② Receive ID:18DAF101x DLC:8 「10 F6 62 20 2A xx xx xx」 from BAT to VN1610.

③ Send ID:18DA01F1x DLC:3 「03 22 20 2A AA AA AA AA」from VN1610 to BAT.

④ Receive ID:18DAF101x DLC:246 「62 20 2A xx xx xx xx xx」 from BAT to VN1610.

NOTE: The time between steps 1 and 3 is only 100 m/sec, so it is necessary to create the command in advance.

The SOCE is returned at 243 byte.

⑤ Calculate the SOCE value in decimal using the following conversion formula.

SOCE×100/255 example: 252(FCh)×100/255 ≒ 98.82…[%]

Method of software reset:

A： When using $04

① Send ID:18DBEFF1x DLC:8 「01 04 AA AA AA AA AA AA」 from VN1610 to BAT.

② Receive ID:18DAF101x DLC:8 「01 44 55 55 55 55 55 55」 from BAT to VN1610.

If the response for step ② is received, the reset is completed.

B： When using $A4

① Send ID:18DBEFF1x DLC:8 「02 A4 10 AA AA AA AA AA」 from VN1610 to BAT.

② Receive ID:18DAF101x DLC:8 「02 E4 20 55 55 55 55 55」 from BAT to VN1610.

If the response for step ② is received, the reset is completed.