Technical Service Bulletin

27 48V Reference: Charging 48V Battery with 12V Charger DTC P0A7D00

17 22 20 2067906/1 September 13, 2022.

Model(s)	Year	VIN Range	Vehicle-Specific Equipment
All Audi Models	2017 – 2024	All	With 48 V electric system

Condition

Workshop findings:

The 48V battery is in a low voltage protection state and will not accept a charge.

DTC P0A7D00 Hybrid/EV Battery Pack State Of Charge Low

Technical Background

When the 48V battery falls below a predetermined state of charge, the protection relays inside the battery open, insuring the internal cells remain above the safe minimum voltage limit.

The protection relays will not close until the appropriate adaption channel is set inside the battery.

Production Solution

Not applicable.

Service

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1. Attach an approved 12V charger, with a minimum output of 50 amps to the 12V system of the vehicle.

The negative cable of the 12V charger must not be directly attached to the negative terminal post of the 12V battery. For the battery management system to read the incoming charge, the battery chargers negative cable must be attached to the vehicle chassis, or jump start ground post.

2. Shut off all non-essential electrical consumers in the vehicle.

3. In ODIS GFF run test plan "0021 – Close charging contactor" (Figure 1) to set the adaptation for protection relay closed, do not exit the test plan once the adaptation has been set.

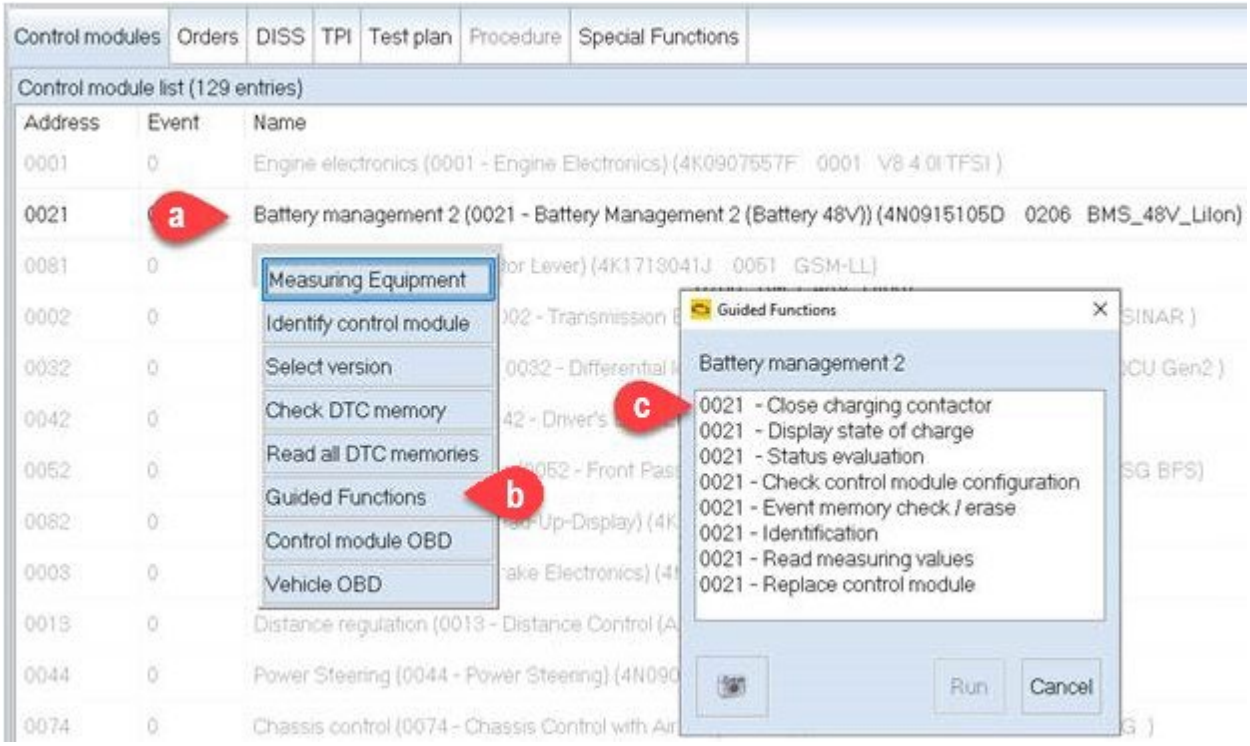

Figure 1*: Use the steps below to access the test plan.*

a. Right click on Battery Management 2 (0021 – Battery Management 2 (Battery 48V)) (4N0915105D 0206 BMS_48B_Lilon).

b. Select "Guided Functions".

c. Select "0021 – close charging contactor".

4. Turn the ignition off, wait 10 seconds, then turn the ignition on.

The protection relay closed adaptation value is only read by the 48V battery when the ignition is turned on.

The following conditions will cause the 48V battery to clear the adaptation for protection relay closed. Once the adaptation is cleared, and the 48V battery has not yet sufficiently charged, the protection relay will open and charging will not be possible until the adaptation is set again.

- Door Open / Closed Status: Opening or closing a door will clear the adaption.
- Hood Open / Closed Status: Opening or closing the hood will clear the adaption.
- Trunk Open / Closed Status: Opening or closing the trunk will clear the adaption.
- Ignition On / Off Status: Pressing the Start/Stop ignition button will clear the adaptation
- Diagnostic Interface: Removing the Diagnostic Interface from the OBD2 port, or running any additional test plans will clear the adaptation.
- Key Location: Removing the key from inside the vehicle will clear the adaptation.

Charging the 48V battery takes significantly longer in comparison to charging the 12V battery. Under optimal conditions you should plan to have the charger active for a minimum of two hours.

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Warranty

This TSB is informational only and not applicable to any Audi warranty.

Additional Information

The following Technical Service Bulletin(s) will be necessary to complete this procedure:

- TSB 2067906/1, *27 48V Reference: Diagnosis and system information.*

All part and service references provided in this TSB (2067906) are subject to change and/or removal. Always check with your Parts Department and/or ETKA for the latest information and parts bulletins. Please check the Repair Manual for fasteners, bolts, nuts, and screws that require replacement during the repair.