Service Information Bulletin

BATTERY CHARGING PROCEDURES AND PARAMETERS

61 11 09 [SI] April 2024 (v03)

This Service Information Bulletin (Revision 2) replaces SI B61 11 09 dated November 2013.

What's New (Specific text highlighted):

- INFORMATION, Complete bulletin update

☐	THIS REPAIR IS MOBILE FRIENDLY

MODEL

E-Series
ALL

INFORMATION

Today's 12 V electrical systems are subject to continually changing loads due to different mileage scenarios encountered in operations at BMW retail outlets. As a result, varying demands are placed on the charging technologies. In the Retailer organization, a distinction is made primarily between three areas in which different types of chargers are used:

- Vehicle presentation areas (Showroom)
- Work bays for mechanical and electrical repairs
- Programming workstations

Charger variants differ in their performance, range of functions and equipment. So that the chargers can be adapted to BMW's changing requirements, it must be possible to set the charging parameters and parameters for other charger functions on the charger itself or by means of a firmware update. The charging procedure must be controlled automatically, depending on battery type and state of charge, including when the vehicle battery is installed in the vehicle.

Intelligent Battery Sensor (IBS)

The IBS is a mechatronic, intelligent battery sensor that records the voltage, current flow, and the temperature of the battery. The vehicle can monitor the condition of the battery in order to determine if the battery needs to be recharged or replaced, along with the remaining capacity of the battery.

When the battery needs to be charged, the charger may only be connected to the jump start terminal points in the engine compartment. This is the only way to ensure that the charging procedure is

detected by the IBS vehicle electronics. If the battery is charged directly at the battery terminals, the batteries condition may be misinterpreted and, under certain circumstances, unwanted Check Control messages or fault memory entries may occur.

Note: Charging the battery directly should be avoided if possible. In the case of a shorted or unrecoverable battery, it can be charged directly after isolation from the vehicle.

Battery Charging Specifications

1. Procedures for lead-acid battery chargers

- Refer to the specific battery charger manual for the proper setup procedures
- Be certain that the charging voltage for lead-acid batteries has been set to 14.8 volts. Failure to set the charge rate to 14.8 volts will result in the charger switching to FC (Floating Charge) before the battery is adequately charged.
- If the vehicle is equipped with an IBS (Intelligent Battery Sensor), be sure to charge the battery from the underhood ("remote") service port, or disconnect the battery from the vehicle. DO NOT connect the charger directly to the IBS.
- When using any Deutronic battery charger, set the charging amperage at 15%-20% above the amp-hour rating of the battery. Failure to do so will result in an undercharged battery. "e.g., for a 90Ah battery, set to 110A and for a 110Ah battery, set to 130A."
- A fully charged battery is indicated on Deutronic chargers by a green LED, and the letters "FC" for "Floating Charge" being visible in the LCD display. The V&H MultiCharger 750 will display "Battery Full" in the LCD display.

Warning! Do not charge the AGM battery with > 14.8 V. Do not use rapid-charging programs! When charging removed batteries (aka stand-alone batteries), do not exceed the maximum charging voltage of 14.8 V at room temperature. Also, for charging via the external start connection point, the maximum charging voltage of 14.8 V at room temperature must not be exceeded. The battery can be damaged even if the AGM battery is only briefly charged with a charging voltage higher than 14.8 V. A charging voltage of more than 14.8 V is usually used in quick-charging routines.

2. Parameters for lead-acid battery chargers

Requirements	Vehicle presentation area	Workbays for mechanical and electrical repairs	Programming workstations
Characteristic curve	IU (Single Stage)	IUoU (Three Stage)	IUoU (Three Stage)
Charge current (continuous load)	minimum 35 A / 50 A (*)	minimum 40 A	minimum 80 A
Charging voltage (output tolerance **+/-2 %**)	14.4 V to 14.8 V	14.8 V	14.8 V
Trickle charge voltage (output tolerance **+/-2 %**)	- (**)	13.4 V	13.4 V
Reactivation threshold	12.6 V		

(*) Using the showroom mode enables some vehicle models to be presented more effectively. The resulting higher load on the 12 V vehicle battery must be accommodated by using a more powerful charger.

(**) The 12 V vehicle battery is under continuous load during vehicle presentations and needs to be charged with a charger for a longer period. To prevent premature aging of the vehicle battery due to prolonged charging, the trickle charging function has been removed from the charging curve. Once the vehicle battery is fully charged, the charger interrupts the charging procedure and automatically detects when the battery needs to be recharged again. (cycling)

3. Procedures for lithium-ion battery chargers

- To charge the lithium-ion starter battery during service, use chargers recommended by BMW. Please, observe the operating instructions of the charger manufacturer.
- The lithium-ion starter battery is labelled with a corresponding sticker on the top of the battery: "Li-ion 30".
- Be certain that the charging voltage for Lithium-ion starter batteries has been set to 14.0 volts. If the charging voltage is too high, the electronic disconnect switch of the Li-ion battery can open, which generates a CCM message in the instrument cluster. Failure to set the charge rate to 14.0 volts can result in damage or a reduced state of battery health (SOH).
- Adjustments and specifications for approved BMW chargers can be found in the Integrated Service Technical Application (ISTA) or AIR under 08 08 14 - Charging parameters for lithium-ion batteries SWS-SWS-SWS2014-080814094 - V.1.

NOTE: The maximum charging voltage of the lithium-ion starter battery of 14.0 V must not be exceeded!

4. Parameters for lithium-ion battery chargers

Requirements	Vehicle presentation area	Workbays for mechanical and electrical repairs	Programming workstations
Characteristic curve	IU (Single Stage)	IUoU (Three Stage)	IUoU (Three Stage)
Charge current (continuous load)	minimum 35 A / 50 A (*)	minimum 40 A	minimum 80 A
Charging voltage (output tolerance **+/-1 %**)	14.0 V	14.0 V	14.0 V
Trickle charge voltage (output tolerance **+/-1 %**)	- (**)	minimum 13.4 V	minimum 13.4 V
Reactivation threshold	13.2 V		

(*) Using the showroom mode enables some vehicle models to be presented more effectively. The resulting higher load on the 12 V vehicle battery must be accommodated by using a more powerful charger.

(**) The 12 V vehicle battery is under continuous load during vehicle presentations and needs to be charged with a charger for a longer period. To prevent premature aging of the vehicle battery due to prolonged charging, the trickle charging function has been removed from the charging curve. Once the

vehicle battery is fully charged, the charger interrupts the charging procedure and automatically detects when the battery needs to be recharged again (cycling).

5. Additional Information

- For proper battery maintenance requirements, please reference the “Battery Care” bulletin B61 18 08.
- When a discharged battery is encountered, please reference the “Energy Diagnosis” bulletin B61 13 05. Check the function of the charging system and perform the “Energy Diagnostics” test plan and, if necessary, follow the recommendations of the test plan.

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