

2024-01-11

This Service Information Bulletin (Revision 8) replaces SI B61 13 05 **dated September 2023**.

What's New (Specific text highlighted):

- PROCEDURE- consolidation of bullet points and NOTE added for transport mode

THIS REPAIR IS MOBILE FRIENDLY

MODEL

All vehicles produced from 3/2004 (except I-Bus vehicles)

SITUATION

The electrical system of BMW vehicles has been subject to an ongoing development process over the last few years. This has led to increased demands being placed on the battery. This document covers important information for the dealer on how to handle "discharged battery" complaints.

In order to properly repair the vehicle the first time in the workshop, it is very important that the diagnostic test plans are performed to completion, with all results taken into consideration.

Without performing the energy diagnosis test plan, the root cause of the discharged battery cannot be identified. This increases the chances of a repeat repair.

CAUSE

A discharged battery can have various causes, most of which do not concern the battery itself. A failed battery is often the symptom and not the cause. A fully serviceable battery fails when an electrical component causes the battery to discharge; the battery becomes internally damaged and must be replaced.

For more information, refer to <https://batteryuniversity.com/> For this reason, replacing the battery is not usually a permanent repair. The cause of the discharged battery must be analyzed in order to guarantee a proper repair.

PROCEDURE

Starting with the introduction of the F01/F02, vehicles with an advanced intelligent battery sensor (IBS) can now monitor the condition of the battery to determine if the battery needs to be recharged or replaced. The analysis and testing of the battery's SoC (State of Charge) and SoH (State of Health) is now performed using ISTA (Integrated Service Technical Application) diagnosis.

- For vehicles **with auxiliary battery faults**, perform the applicable test plan and proceed with the test plan recommendations. The auxiliary battery and the Power Control Unit (PCU) provide vehicle electrical system support.
- For vehicles **with High Voltage (HV) battery faults**, perform the applicable test plan and proceed with the test plan recommendations.
- For all models **with other battery faults (specifically the 12 V battery)**, the "Energy Diagnosis" must be performed for **all** discharged battery complaints.

Complete the energy diagnosis test plan on every vehicle with a discharged battery.

1. Fault analysis (Energy Diagnosis)

There are currently two paths to access the energy diagnosis test plan:

- a. If a power management fault is stored, ISTA will select the energy diagnosis test plan automatically.
- b. To select the test plan manually navigate to: "Vehicle Management > Troubleshooting > Function structure > Body > Voltage supply > Energy diagnosis"

If fault codes are stored, the test plan displays the **“Most Likely Causes”**. Complete the test plan by processing **all “Most Likely Causes.”** Start from **the top**, where the **most recent cause** of a discharged battery is listed. **If the cause of the battery failure is undetermined** work through **all selections in the General information section** to determine the cause of the failure.

When no “Most Likely Causes” are found, the results screen will display: **“Most Likely Cause (0), is undetermined”**, thoroughly work through **all selections in the General information section to determine the cause of the battery failure.**

NOTE: If the test plan states, “State of charge of the battery is too low **Recharge battery!**”. Charge the battery until it is fully charged. Disconnect the ICOM, battery charger, and allow the vehicle to sit for a minimum of 3 hours. This enables the IBS to update the batteries SoC in the engine control (DME, DDE, EDME) or in the Basic Central Platform (BCP). Additionally, a battery with a surface charge has a slightly elevated voltage and may give a false reading.

When a vehicle battery is **unrecoverable after extended charging**, it can be exchanged to continue the Energy diagnosis test plan. **Do not register the exchanged battery until the Energy Diagnosis test plan is thoroughly completed.** When battery registration or programming is performed, the stored energy history will be deleted. This may cause the vehicle to return if the root cause of the discharged battery undetermined.

- **Do not register a battery exchange, program the vehicle, or erase fault codes until the Energy Diagnosis test plan has been fully completed.**
- **Prioritize completing the energy diagnosis first, before investigating unrelated errors.**

NOTE: After the removal of (TRA) transport mode, **do not** erase faults until the energy diagnosis has been fully processed, clearing errors will affect the test plan results.

Ensure you have completed all “Most Likely Causes” and all selections in the General information section when the root cause of the discharged battery cannot be determined.

When possible, allow the vehicle to rest overnight to verify the repair and ensure start ability.

NOTE: Sections of the Energy Diagnosis test plan are conditional, results are determined by the user’s input. Answering questions incorrectly may result in the denial of a warranty claim.

2. The following is a list of reasons for a discharged battery, indicated by the results of the test plan.

A. Examples of vehicle faults

- Battery fault (aged battery – only on IBS-equipped vehicles)
- Alternator fault
- Vehicle is not entering sleep mode (sleep mode prevented)
- Vehicle is constantly woken from sleep mode
- Closed-circuit current is too high
- Closed-circuit current infringement
- Exhaustive battery charge **(for information only)**
- Terminal 30a f shutdown due to start capability limit **(for information only)**

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- Terminal 30F shutdown due to start capability limit **(for information only)**
- Terminal 30B electric fan or coolant pump after-run **(for information only)**
- Undetermined
- Lights/hazard warning lights left on for too long

“Lights left on” is only considered a vehicle fault and can only be claimed under warranty if the following conditions exist:

1. If other “Most Likely causes” are listed that indicate the battery was already heavily discharged (listed as **for information only** above).
2. If the State of Charge readings for the last 5 days indicate a heavily discharged battery (typically below 40%).

B. Examples of operating faults

- Lights/hazard warning lights left on for too long
- Terminal R or terminal 15 left on for too long (this fault may also be set when the vehicle is in the workshop – if the mileage the fault set is the same as the current mileage of the vehicle)
- Vehicle parked for too long
- Vehicle used when stationary

C. General Information

General information is available in the energy diagnosis test plan and can be accessed at any time. Additional information is available for diagnosis of power management and battery issues. **For warranty claims work through all selections in the General.**

- **Battery** (displays the current and last five days’ values for the SOC and start capability limit)
- **Closed-circuit current monitoring** (list the last 12 closed current monitoring processes for vehicles equipped with an (IBS)Intelligent battery sensor)
- **Stationary period/ Stationary use** (displays the number of days the vehicle has been parked and not driven)
- **Average driving performance** (displays a value and explanation for average number and trips in a single numeric value)
- **Consumer reduction** (displays energy load reduction)
- **Charge states** (displays the amount of time in each SOC range by hours) charge status is reset by programming or battery registration.
- **Aging battery** (displays a stress value based on the age of the battery)
- **Battery tests** (for the charge acceptance and start voltage dips added to general information. This makes extended evaluation of the battery possible, allowing potential damage to the battery to be detected, by charging the battery within a 10-minute period and monitoring the amperage charge acceptance of the battery). (Currently unavailable for MHEV, PHEV and BEV vehicles)
- **Battery check control messages** (displays stored battery relevant check control messages)
- **History of test module changes** (displays history of most recent test module changes)
- **Determined fault causes** (displays [1] “Most Likely Cause”)

If a new battery is installed, the “Energy Diagnosis” test plan should be completed prior to registering the new battery. When the battery is registered, the stored energy history is deleted. This may cause the vehicle to return if the root cause of the discharged battery is not determined.

CLAIM INFORMATION

To claim an eligible faulty battery either under the BMW New Vehicle Limited Warranty for Passenger Cars and Light Trucks or the BMW Original Parts Warranty (eligible In-center workshop repairs), the Energy Diagnosis test plan must be performed to completion.

Exception: Energy diagnosis is not necessary for vehicles with auxiliary battery faults, where the applicable test plan recommends auxiliary battery replacement.

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To assist you in determining the warranty coverage on a battery, please refer to the following guidelines:

Covered under warranty when the results of the Energy Diagnosis test plan are:

A vehicle fault;

- A vehicle fault; or
- An undetermined fault; or
- An operating fault such as unfavorable driving profile (e.g., driven extremely short distances) and the Energy Diagnosis results indicating the battery needs to be replaced.

A “Stand-alone” faulty battery is claimed using the battery defect code listed in AIR.

Other Repairs

If it is determined that some other covered vehicle fault and repair caused the battery to fail, the failed battery is to be claimed under the AIR defect code that applies to the failed (causal) component or repair (e.g., alternator, permanent failure).

Not covered under warranty when the results of the Energy Diagnosis test plan are:

- An operating fault such as the vehicle being parked too long (vehicle parked for extended periods without proper battery maintenance), battery not maintained, etc.

As applicable to your center, please refer to [SI B01 01 20](#) or [B01 07 20](#) for claiming your diagnosis work time, job/repair work time (WT), WT and the repair-related explanation procedures.

FEEDBACK REGARDING THIS BULLETIN

Technical Feedback	To submit feedback for the technical topic of this bulletin: Submit your feedback in the rating box at the top of this bulletin
Warranty Feedback	To submit feedback for the CLAIMS section of this bulletin: Submit an IDS ticket to the Warranty Department, or use the chat available in the Warranty Documentation Portal
Parts Feedback	To submit feedback for the PARTS section of this bulletin: Submit an IDS ticket to the Parts Department

Supporting Materials

