

## GENERAL SERVICE BULLETIN

### Discharged Battery/12-Volt Battery Drain Check

#### Model:

Ford  
2022-2026 Maverick

Markets: North American markets only

#### Summary

This article is designed to provide an updated battery draw test without interrupting the power supply to the vehicle's modules before the **BJB** is opened/separated from the base. Use this article when a Maverick vehicle is exhibiting a discharged battery due to a 12-volt battery draw.

#### Service Information

Maverick vehicles use a **BJB** that splits in half (disconnecting the power supply from the entire vehicle). The underside of the **BJB** has a lid that can be removed to expose the vehicle fuses. When splitting the **BJB** in half the vehicle's modules will power down due to the circuits being opened. This results in modules resetting, and the fault causing the draw may reset for an undetermined amount of time, potentially resulting in an inability to replicate and diagnose the cause of the draw.

**NOTE:** The 12-volt battery must be fully charged prior to starting the 12-volt battery drain check procedure below. This procedure should never be conducted if any low battery warning messages such as "deep sleep mode" or "battery saver active" is present in the **JPC**. Charge and test the vehicle's battery prior to conducting the battery drain check procedure. Refer to the **WSM**, Section 414-01 Battery, Mounting and Cables > General Procedures.

**NOTE:** Active **OTA** software updates (if equipped and enabled) may cause the **TCU** and/or other modules to remain awake during the drain testing. Using the **ETS** menu option, locate the connected vehicle > **OTA** update dashboard then review the update status to see if any **OTA** updates are in process. If **OTA** updates are actively in process, allow the update to complete prior to battery drain testing.

**NOTE:** No factory-equipped vehicle should have more than a 25 mA (0.025 amp) – 50 mA (0.050 amp) draw depending on the vehicle's accessories. Check for current drains on the battery in excess of 25 mA (0.025 amp) – 50 mA (0.050 amp) with all the electrical accessories off and the vehicle at rest for at least 90 minutes (depending on region and vehicle options). Current drains can be tested with the following procedure.

**NOTE:** Many electronic modules draw 10 mA (0.010 amp) or more continuously.

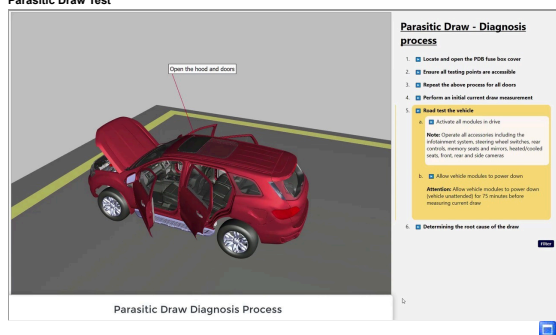
**NOTE:** Typically, a drain of approximately 1 amp is attributed to an engine compartment lamp, glove compartment lamp or interior lamp staying on continuously. Other component failures or wiring shorts are located by selectively pulling fuses to pinpoint the location of the current drain. When the current drain is found, the multimeter reading falls to an acceptable level.

**NOTE:** To accurately test the drain on a battery, use an in-line ammeter between the negative battery post and its respective cable. Use of a test lamp or voltmeter is not an accurate method.

**NOTE:** If equipped with an automatic transmission and the vehicle has an **JPC**, **PRNDL/PRNDM** indicator, verify the gear selector lever is in the park position and is operating correctly. A fault in the park position indicator circuit can prevent modules from transitioning to sleep mode.

**NOTE:** In addition to the battery drain check a parasitic draw test video is provided as an additional testing resource.

#### Parasitic Draw Test



**NOTE:** For vehicles equipped with aftermarket equipment containing electrical connections, disconnect the aftermarket to factory connections to isolate the body from the chassis. If the current draw is excessive, remove the fuses from the main fuse box one at a time and note the current drop then perform the same for the secondary fuse box in the **BCM**.

#### 12-Volt Battery Drain Check Procedure

1. Drive the vehicle for at least 5 minutes over 48 km/h (30 mph) to activate the vehicle systems.
  2. If equipped, disable the approach detection feature.
  3. If equipped, disable the perimeter alarm feature.
  4. Park the vehicle, turn the ignition off.
  5. Open the hood and all doors. Use a flat blade screwdriver (or other suitable tool) to manually close the hood and door latch mechanisms to allow the hood and doors to remain open while drain testing.
- NOTE:** Vehicles may be equipped with multiple fuse box locations. Refer to Wiring Diagrams Cell 13 for schematic and connector information. Make sure the fuse box(es) are accessible without turning on the interior lights or the under hood lights.
6. If equipped with auxiliary battery(ies), make sure that the auxiliary battery(ies) are disconnected when measuring current draw at the primary battery, to make sure the meter or inductive amp probe measures all current draws present. Disconnect the auxiliary battery(ies).
  7. Start and run the engine for at least 10 seconds and then shut off the vehicle.
  8. Using the key fob, press the lock button, then move all keys/fobs at least 50 feet away from the vehicle.
  9. Connect a fused jumper wire (30A) between the negative battery cable and the negative battery post to maintain a connection and prevent modules from resetting due to power loss.
  10. Disconnect the negative battery cable from the negative battery post without breaking the connection of the fused jumper wire.
  11. Install a multimeter with the leads in series with the negative battery terminal and negative battery cable.
  12. Back feed a jumper wire using a 12 AWG wire or larger with a 30A fuse from the **TRM** power supply on C4397A pin 14 (BU-RD wire) to the battery positive terminal. The **TRM** is located behind the folding seat back of the rear seat on the driver's side of the vehicle. If the vehicle does not have a **TRM**, the connector will still be present behind the rear seat. Keep this connected throughout the battery drain test.

**CAUTION:** To prevent damage to the jumper wires, do not start or run the engine while the 12 AWG fused wire is connected.

13. Separate the **BJB** to access the fuses.

**NOTE:** It is important that continuity is not broken between the battery and the negative battery cable when connecting the multimeter. If this happens, repeat the time out/power down procedure.

**NOTE:** The multimeter must be capable of reading milliamperes and should have a 10-amp capability.

**NOTE:** If the multimeter settings need to be switched or the test leads need to be moved to another outlet, reinstall the fused jumper wire to avoid breaking continuity.

14. Allow the vehicle to sit with the ignition off for at least 90 minutes (depending on region and vehicle options) to allow the modules to time out/power down.

15. Note the amperage draw. Amperage draw may vary from vehicle to vehicle depending on the equipment package. Compare to a similar vehicle for reference.

**NOTE:** Once the drain has been isolated or if the drain is non-reproducible, remove the fused jumper wire and reconnect the **BJB** and reconnect the **TRM** (if equipped).

**NOTE:** If the vehicle sits for an extended period of time and the battery drains, there is the possibility of a control module staying alive and not going into sleep mode. If a control module stays alive, it can result in battery drain. If a control module is suspected, isolate individual modules by disconnecting them one at a time and note if the excessive draw goes away.

16. When the current level drops to an acceptable level after removing a fuse, the circuit containing the excessive draw has been located. Reinstall the fuse and allow the vehicle to sit with the key out of the ignition for at least 90 minutes (depending on region and vehicle options) to allow the modules to time out/power down again.

17. The excessive draw can be isolated by continuing to pull subsystem fuses and disconnecting components. Do not reinstall the fuses or connect components until testing is finished. To correctly isolate each of the circuits, all of the fuses may need to be removed, then install one fuse and note the amperage draw, remove the fuse and install the next fuse. Continue this process with each fuse.

18. If excessive current draw is isolated to a specific module, verify if a module input is the cause of the concern. Refer to the corresponding **WSM** system operation and component description section to determine the inputs (hardwired or network messages) received by the module in question.

19. Refer to the Wiring Diagram for any circuits that run from the battery without passing through the main fuse box or other fuse box(es). If the current draw is still excessive, disconnect these circuits until the draw is found. Disconnect the generator(s) electrical connections and retest if the draw cannot be located. The generator(s) may be internally shorted, causing the current drain.

20. If equipped with window one-touch up, perform the window motor initialization after the negative battery cable terminal is connected to the negative battery post. Refer to the **WSM**, Section 501-11 Glass, Frames and Mechanisms > General Procedures > Power Door Window Initialization.

21. If equipped with power roller shutter, perform the power roller shutter initialization after the negative battery cable terminal is connected to the negative battery post.

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**NOTE:** This information is not intended to replace or supersede any warranty, parts and service policy, workshop manual (WSM) procedures or technical training or wiring diagram information.