



## STAR ONLINE PUBLICATION

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**Case Number:** S2008000075

**Release Date:** 06/25/2020

**Symptom/Vehicle Issue:** No Start, Start Stop Inoperative, Cluster Messages to Service Shifter or Service Start Stop System

**Customer Complaint/ Technician Observation:** Customer may observe A Service Start/Stop message/Start Stop INOP or Service Shifter message and a no start condition. The condition may have appeared after a recent jump starting of the vehicle contributed from a condition of limited drive cycles not charging the Main and AUX batteries.

Technician observed: DTC P00FD BATTERY -B- STATE OF CHARGE PERFORMANCE

**Auxiliary Battery Disconnected:** During an initial key start, the Power Control Relay is commanded on (**open**) and the Auxiliary Battery SOC is evaluated. If the Fused B+ voltage to the Powertrain Control Module (PCM) is so low approx 8.0 volts that the PCM experiences a reset during the initial key-on or engine crank event, the **PCM will set P00FD and ESS will be disabled.**

**The diagnostic for the P00FD fault** is basically designed to detect a **discharging, discharged or disconnected Auxiliary Battery** any time there is a disconnect between the two Batteries. It detects this if the Fused B+ voltage to the PCM drops low enough to cause a PCM reset when disconnected from the Main/Cranking Battery. This fault will detect a faulty Auxiliary Battery, or wiring issue between the Auxiliary Battery, PDC and Battery Supply circuit and the PCM.

### Repair Procedure:

#### Set Conditions:

The Powertrain Control Module (PCM) detects that the Auxiliary Battery is disconnected at initial key crank event.

The PCM detects that the Auxiliary Battery voltage is below 7.98 volts during an ESS Auto-Start event.

The PCM detects that the Auxiliary Battery voltage is below 10.30 volts during an ESS Auto-Start event and the counter has reached 10 counts.

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## Battery Testing:

When testing the auxiliary battery (if equipped), BOTH battery negative cables must be disconnected.

**NOTE: If the vehicle is equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.**

**Caution:** When testing multiple batteries disconnect the auxiliary battery ground cable before testing the main battery to avoid false battery test results. Main battery SOC can be viewed in the BCM data. Verify the static battery SOC (State Of Charge) readings for the **Primary battery**, document readings on repair order. Target BCM battery SOC for ESS should be greater than 65%.

Vehicles that have had **recent limited driving miles or had to be jumped started may set DTC - P00FD** and may require additional battery charging to properly clear the DTC. Refer to service diagnostics, battery charging tables to ensure properly charged batteries prior to further testing.

Vehicles that have DTC - P00FD reoccur, use the below DTC set list to further test and resolve.

## Possible cause list to review for DTC's that may return.

Possible Causes
OPEN FUSE IN BATTERY JUMP POST TERMINAL
PCR CONTROL RELAY OUTPUT CIRCUIT SHORTED TO VOLTAGE
POOR CONNECTION AT THE VEHICLE BATTERY POSITIVE OR NEGATIVE CABLE ENDS
HIGH RESISTANCE IN THE VEHICLE BATTERY POSITIVE CABLE
HIGH RESISTANCE IN THE VEHICLE BATTERY GROUND
HIGH RESISTANCE IN THE FUSED B+ CIRCUIT TO THE PCM
POWER CONTROL RELAY (PCR) STUCK ON (OPEN)
PCR CONTROL RELAY (ON PCB IN PDC) STUCK ON
FAULTY VEHICLE BATTERY

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