

The BCM uses the battery current sensor to keep track of the battery state of charge. During a drive cycle the Electrical Energy Management software adjusts the battery state of charge up during charging, and down during discharge.

During rest periods with the key off, and the vehicle enters sleep mode, the BCM automatically recalibrates the Battery State of Charge. It takes 8 hours in sleep mode, with the vehicle undisturbed, no doors opened or keyless entry buttons pressed, and the total vehicle current draw less than 300mA, to calibrate the battery state of charge to a high accuracy. If the system draw has not allowed the battery state of charge to calibrate over the previous 7 days, the state of charge quality factor changes to identify this and some Electrical Energy Management system functions may be temporarily turned off until a calibration takes place.

DESCRIPTION AND OPERATION > CHARGING SYSTEM - 3.5L DURATEC (209KW/284PS)/3.5L ECOBOOST (209KW/284PS)/5.0L 32V TI-VCT - SYSTEM OPERATION AND COMPONENT DESCRIPTION > ENGINE OFF LOAD SHED

When the engine is off, and the BCM determines the battery state of charge is below 40% or 10% of the charge has been drained or 45 minutes have elapsed, a load shed message is sent over the CAN. This message turns off the audio/navigation system to save the remaining battery charge. Under this condition, the FDIS displays SYS OFF TO SAVE BATT (without navigation) or BATTERY SAVER - SYSTEM OFF PLEASE START THE ENGINE (with navigation) to notify the driver that battery protection actions are active.

Engine off load shed occurs when the engine is not running, and the ignition is in the ACC or RUN position. To clear the load shed state, restart the engine.



NOTE: To maintain correct operation of the load shed system, any electrical devices or equipment must be grounded to the engine or chassis ground and not the negative battery terminal. A connection to the negative battery terminal may cause an inaccurate measurement of the battery state of charge and may cause incorrect load shed system operation.

When the ignition is in the RUN position and load shed occurs, the IPC message center displays either TURN POWER OFF TO SAVE BATT (base message center) or TURN POWER OFF TO SAVE BATTERY (optional message center). The audio/navigation system will shut down after the message center displays its warning.

If a fault occurs with the battery current sensor or circuit(s), the only engine off load shed strategy is a 45 minute timer. After 45 minutes have elapsed, the audio/navigation system turns off. To clear the load shed state, restart the engine.

DESCRIPTION AND OPERATION > CHARGING SYSTEM - 3.5L DURATEC (209KW/284PS)/3.5L ECOBOOST (209KW/284PS)/5.0L 32V TI-VCT - SYSTEM OPERATION AND COMPONENT DESCRIPTION > ENGINE RUNNING LOAD SHED

When the BCM and/or PSCM voltage is low, with the engine running, a message is sent by the BCM to either minimize or shut down the climate controlled seats, rear defrost, heated mirrors and DATC blower motor to improve system voltage. Under this condition, the IPC message center displays either LOW BATTERY LESS FEATURES (base message center) or LOW BATTERY FEATURES TEMPORARILY

TURNED OFF (optional message center) to notify the driver that battery protection actions are active.

For more information on message center messages, Refer to the Owner's Literature or Refer to: Message Center - System Operation and Component Description .

There are 3 states of engine running load shed:

Load Shed State	Entry Conditions	Impact to Features	Clear Conditions
Load shed 1	If vehicle speed is below 16 km/h (10 mph) , and voltage to the PSCM is less than 11.5-volts or the PSCM measures current draw greater than 0 amps. If vehicle speed is above 16 kp/h (10 mph) , and the voltage to the BCM is less than 11.6 volts.	These loads are incrementally reduced (if equipped): Heated steering wheel and climate controlled seats. These loads are turned off (if equipped): smart trailer tow battery charge, heated mirrors, heated backglass, and heated windshield.	Voltage to the BCM is greater than 12.7 volts or the generator field duty cycle is less than 88%.
Load shed 2 transient	PSCM indicating reduced voltage and increased current. System voltage less than 11 volts	If equipped, climate controlled seats are disabled, but the indicators remain illuminated. If equipped, rear defrost and heated mirrors are disabled, but the indicator remain illuminated.	Voltage to the BCM is greater than 12.4 volts.
Load shed 2 continuous	Load Shed 2 Transient condition in excess of 20 seconds	If equipped, climate controlled seats are disabled and the indicators are off. If equipped, rear defrost and heated mirrors are disabled and the indicator is off. If equipped with DATC, the blower motor is reduced to 50% speed. If equipped, DC/AC inverter (AC powerpoint) is disabled. The base IPC message center displays LOW BATTERY LESS FEATURES. The optional IPC message center displays LOW BATTERY FEATURES TEMPORARILY TURNED OFF.	Voltage to the BCM is greater than 12.4 volts for more than 60 seconds.