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Last Modified: 6/16/2017

Other Languages: NONE

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Coding Information

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Title: Body Controller Updates for 500k Baud**Applies To:** All vehicles with 500k baud data link

Change Log

Please refer to the change log text box below for recent changes to this article:

06/16/2017 - Added information for Non-Multiplexed 500k vehicles. Feature 0508096 (Figures 9-10)

03/13/2017 - Added additional information for the different wiring information at the BCM for both 500k feature codes. Features: 0508095 and 0508097 (Figures 5-8)

08/02/2016 - Added Body Controller Reference information for baud rates. Added RTC battery part number based on feedback.

07/13/2016 - Article Created.

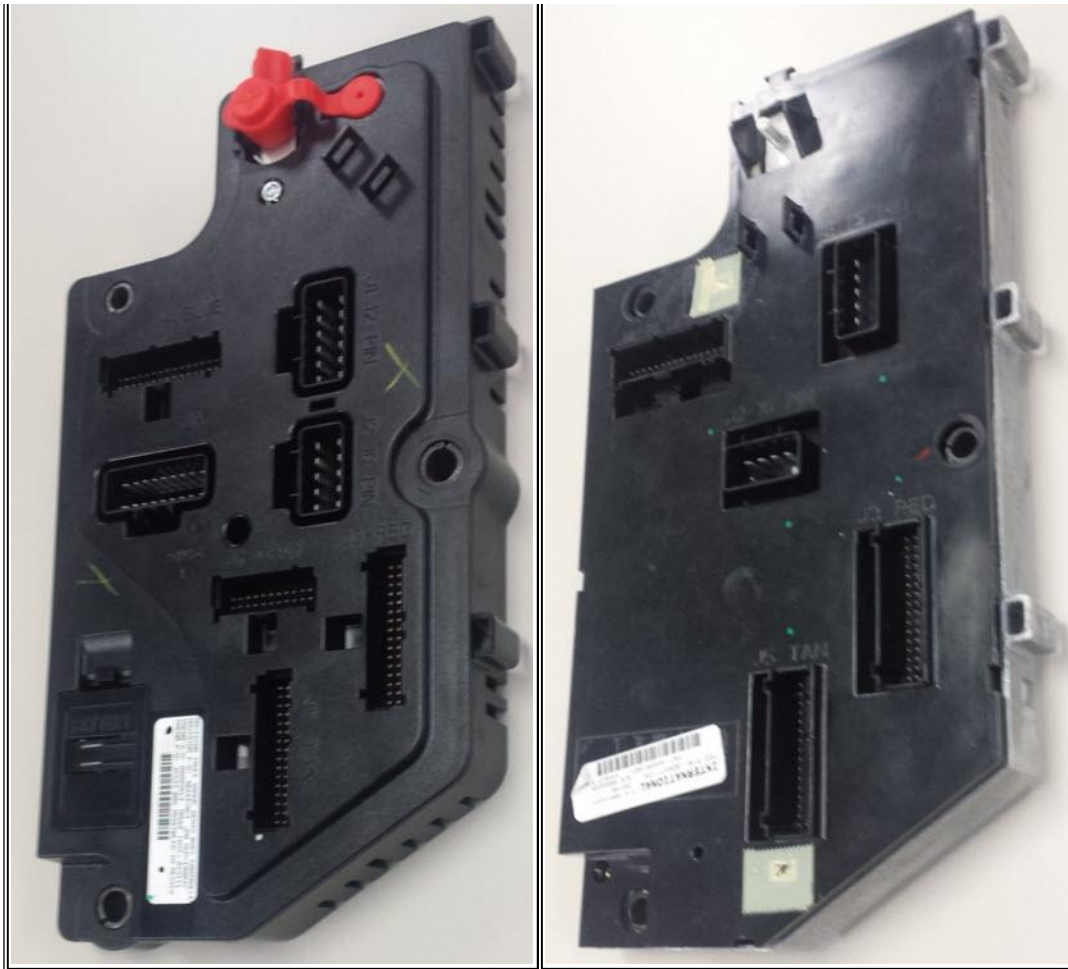
Description

Overview of the recent updates to the Body Controller (BCM) on 500k baud data link equipped vehicles.

- [Basic Overview](#)
- [Data Link Terminal Information](#)
- [Grid Control Information](#)
- [Real Time Clock \(RTC\) Battery](#)

Basic Overview

Figure 1 - Gen 4 BCM	Figure 2 - Gen II BCM

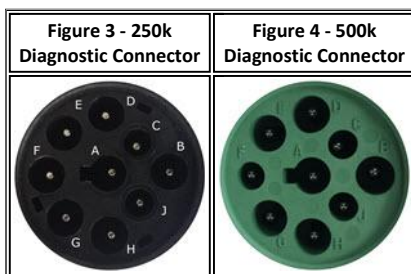


- The Gen 4 BCM is the correct service part for all vehicles equipped with a Body Controller. The Gen 4 BCM is backwards compatible with trucks that were built with Gen II BCMs
 - There is no Gen 3 BCM
- The same diagnostics are used on a Gen 4 BCM
- [IK2600008](#) - How to Diagnose Electrical Problems with Diamond Logic® Builder using a Session
- [IK0800092](#) - The First Check to Make When Troubleshooting Any Body Controller or ESC Issue

([Return to Top](#))

Data Link Information

500k Baud Vehicles will have a GREEN diagnostic connector. The green connector has 500k and 250k data link wiring present.



- There are identifying feature codes for 500k - Phase 1, 500k - Phase 2, and Non Multiplexed vehicles
- The wiring architecture is different on Phase 1, Phase 2, and Non Multiplexed vehicles
 - 500k Phase 1 - **Feature 0508095** - ELECTRICAL SYSTEM ENHANCED VCM FUNCTIONS for VCM Enhanced Functions
(Examples: ProStar, WorkStar, DuraStar with Green Diagnostic Connector)

- 500k Phase 2 - **Feature 0508097** - ELEC SYS MUX COMMON ARCHITECTURE for Electrical Common Architecture System
(Examples: LT, RH - All have Green Diagnostic Connector)
- 500k Non Multiplex - **Feature 0508096** - ELECTRICAL SYSTEM VCM FUNCTIONS NON-MUX for Vehicle Control Module Functions, for Non-Multiplexed Vehicles
(Example: HX, PayStar, 9900 with Green Diagnostic Connector)

500k Phase 1 Vehicles - Feature 0508095:

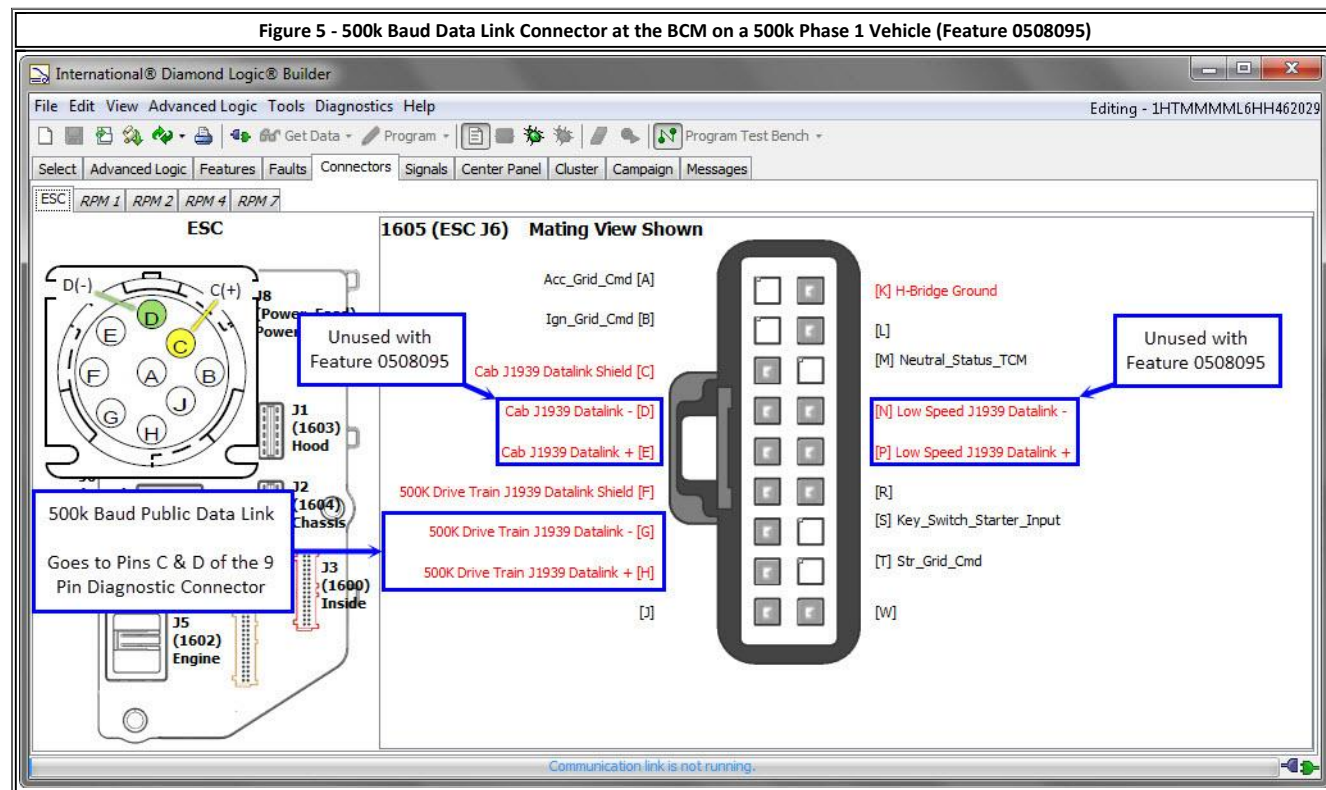
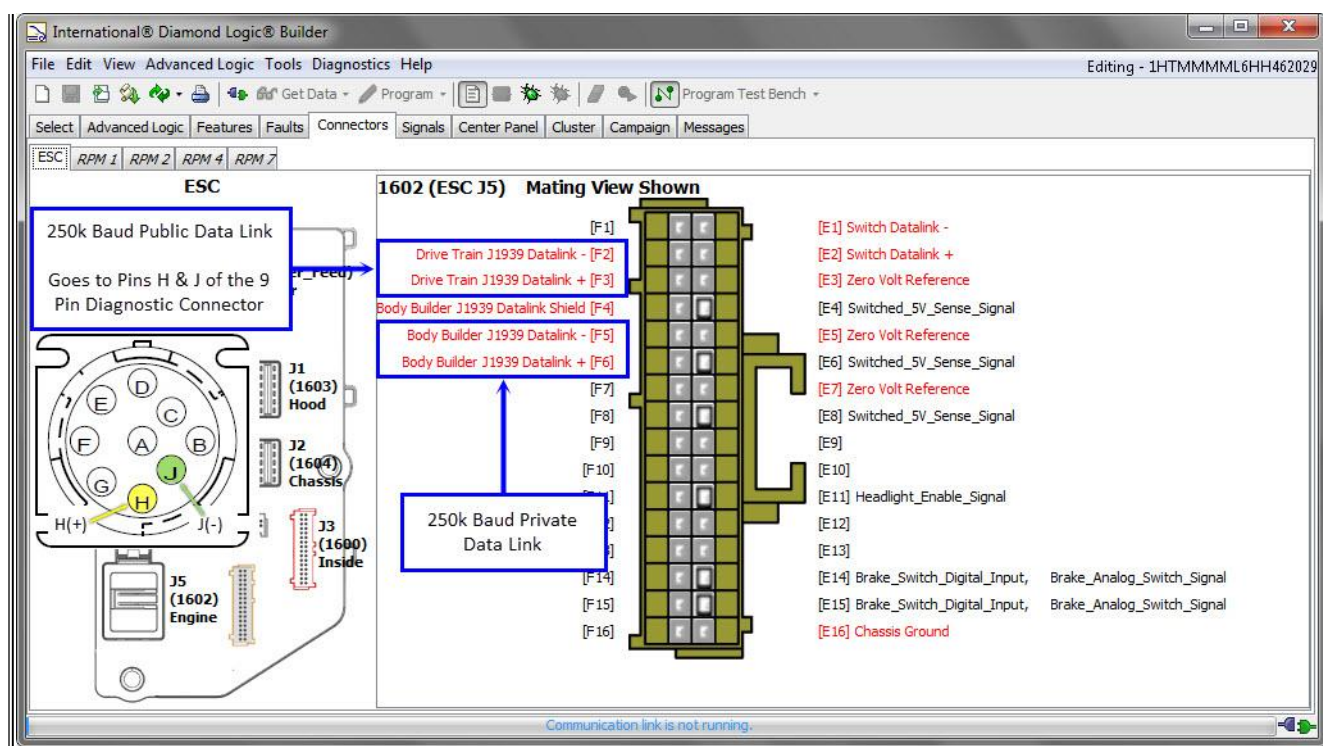


Figure 6 - 250k Baud Data Link Connector at the BCM on a 500k Phase 1 Vehicle (Feature 0508095)



500k Phase 2 Vehicles - Feature 0508097:

Figure 7 - 250k Baud Data Link Connector at the BCM on a 500k Phase 2 Vehicle (Feature 0508097)

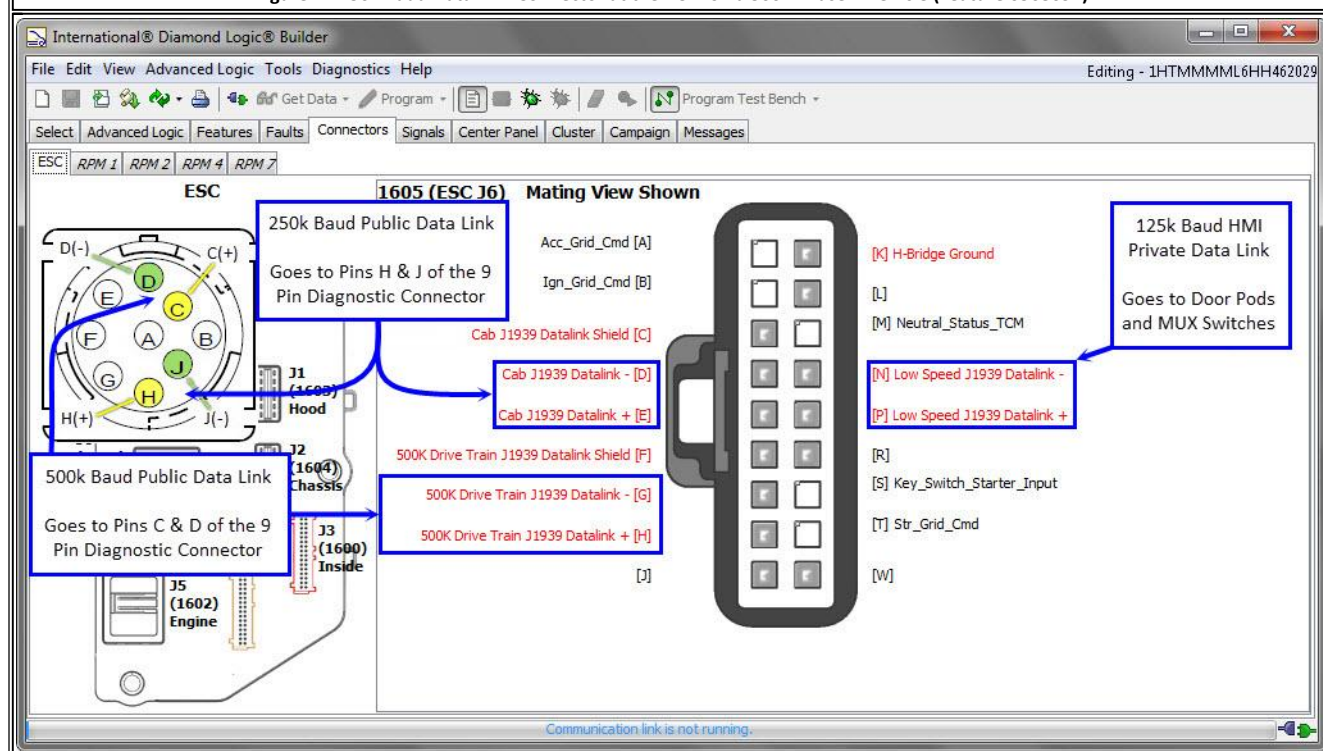
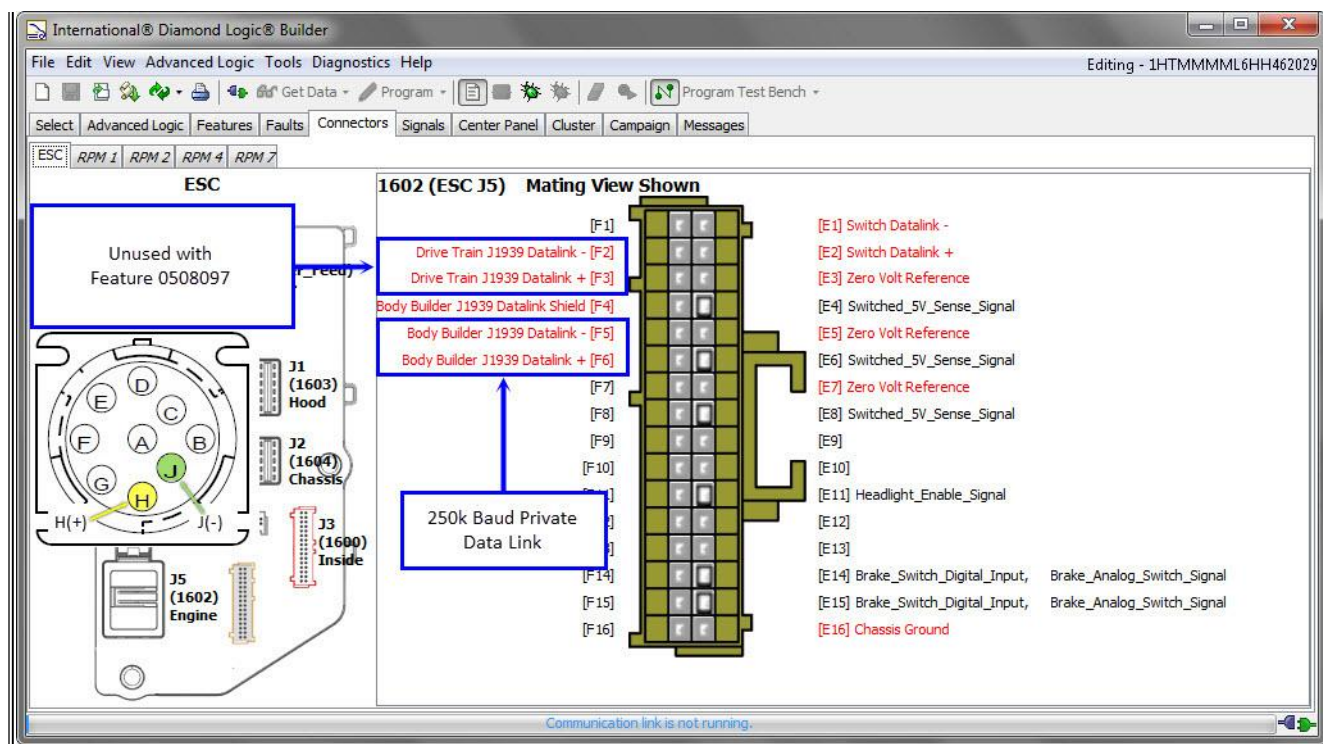


Figure 8 - 250k Baud Data Link Connector at the BCM on a 500k Phase 2 Vehicle (Feature 0508097)



500k Non Multiplex Vehicles - Feature 0508096:

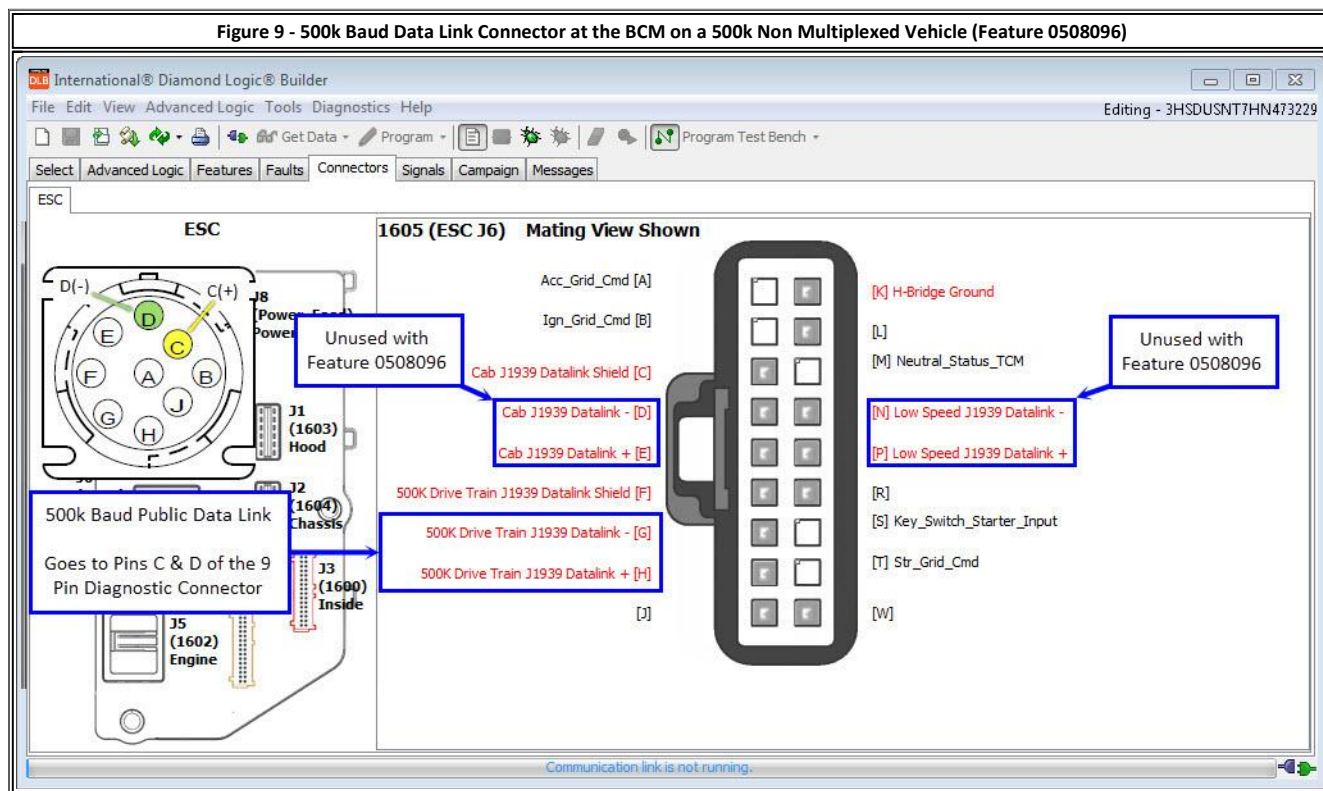
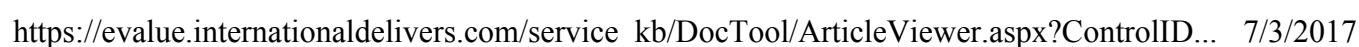


Figure 10 - 250k Baud Data Link Connector at the BCM on a 500k Non Multiplexed Vehicle (Feature 0508096)



- All Body Controllers are shipped blank and can be programmed to 500k or 250k.
- This issue would only occur if you are using a module that was already programmed.

([Return to Top](#))

Grid Control

The BCM controls the power circuits for Ignition, Accessory and Cranking.

Accessory Grid Control output:	1605-A	Maximum Current: 20 Amps
Ignition Grid Control output:	1605-B	Maximum Current: 10 Amps
Starter Grid Control output:	1605-T	Maximum Current: 10 Amps

Select	Advanced Logic	Features	Faults	Connectors	Signals	Center Panel	Cluster	Campaign	Messages
ESC Signals	Master List	J1939	Detected J1939	Watched	Graph	Session: 0595KAG			
Y	Signal	Pins	Unit	Signal Type	Description				
	Acc_Grid_Cmd	1605-A	On/Off	Digital Output	Accessory Grid Power Output Command signal. (Output of Virtual F...				
	Ign_Grid_Cmd	1605-B	On/Off	Digital Output	Ignition Grid Power Output Command signal. (Output of Virtual Fu...				
	Str_Grid_Cmd	1605-T	On/Off	Digital Output	Starter Grid Power Output Command signal. (Output of Virtual Fus...				

Below are the only conditions the Body Controller should observe for Key_Switch_State:

- Accessory Only
- Ignition and Accessory (Key on Engine Off or Key On Engine Running)
- Ignition and Starter input (Crank) - (Accessory signal is removed during cranking)

If any other combinations of key switch state are observed a fault will be set. If the Accessory circuits are undercurrent or overcurrent a fault will be set. The Body Controller will not supply power to the output when overcurrent or undercurrent faults are active. You must troubleshoot the output wiring.

NOTE:

Do not diagnose these faults when *INACTIVE* without a driver complaint

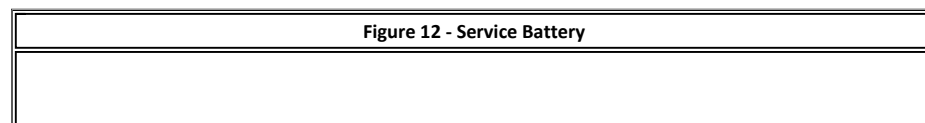
Faults apply to Gen 4 Body Controllers with 500k Baud Only			
SPN	FMI	Module and Source Address (SA)	Description
520981	14	Body Controller (33)	Only Ignition input is being detected (status of Key_Switch_State = 1)
520982	5	Body Controller (33)	Accessory Grid Undercurrent
520982	6	Body Controller (33)	Accessory Grid Overcurrent
520983	14	Body Controller (33)	Only Starter input is being detected (status of Key_Switch_State = 4)
520984	14	Body Controller (33)	Starter input and Accessory input are detected (status of Key_Switch_State = 6)
520985	14	Body Controller (33)	Starter input, Accessory input, and Ignition input are detected (status of Key_Switch_State = 7)

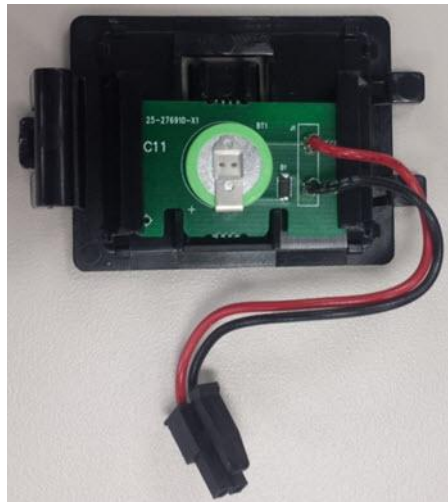
([Return to Top](#))

Real Time Clock (RTC) Battery

500k baud vehicles utilize the BCM for Real Time Clock (RTC) functionality.

- The RTC battery is integrated in the circuit board and cannot be removed
- If the RTC battery fails, it will set fault code 516824-1 and a service battery will need to be installed
- The service battery plugs into the circuit board
- The RTC battery part number is 2514328C91





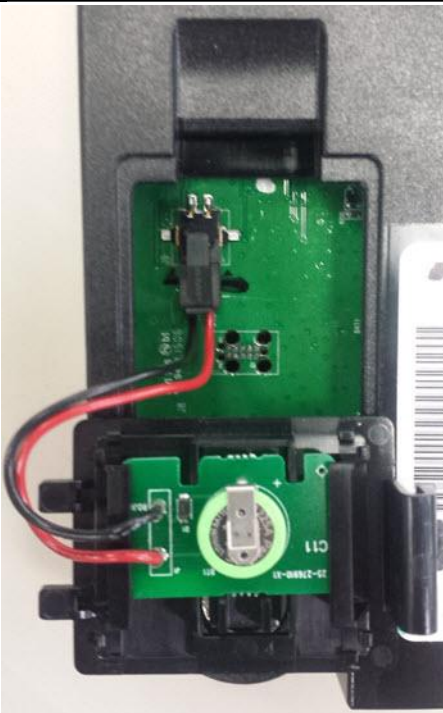
- RTC Service Battery

Figure 13 - Battery Cover Removed

Figure 14 - Service Battery Installed



- If the battery needs to be serviced, remove the battery cover to locate the connector the service battery plugs into.



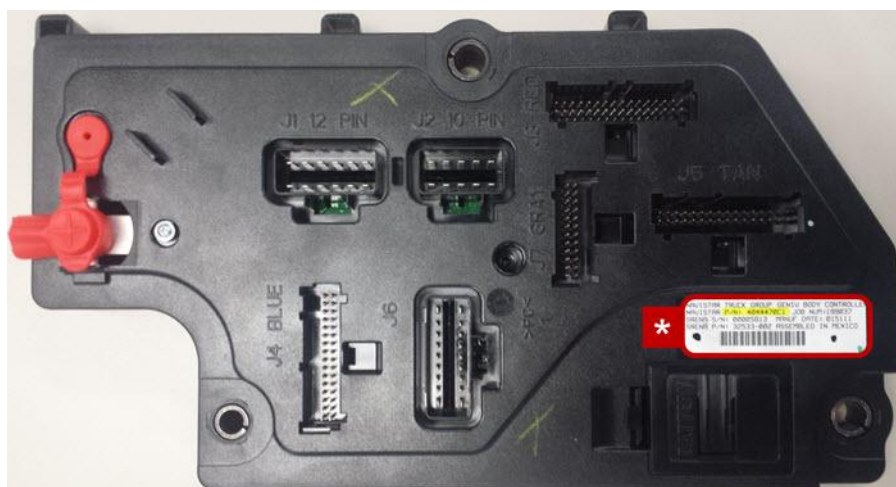
- The service battery plugs into the circuit board as shown.

BODY CONTROLLER REFERENCE

GENERATION

4

THERE ARE TWO VERSIONS OF THE GENERATION 4 BODY CONTROLLER. HERE'S HOW TO IDENTIFY THEM:



NAVISTAR TRUCK GROUP GENIV BODY
CONTROLLER
NAVISTAR P/N: 4044470C1 JOB NUM:
SRENA S/N: 00000000 MANUF DATE: 000000
SRENA P/N: 00000-0000 ASSEMBLED IN MEXICO
SERVICE PART *

4044470C1

- Early release, installed on early 2015 vehicles.
- Communicates at 250k baud
- Capable of communicating with 2015 model year vehicles and older.

COMMUNICATION BAUD RATE



250k

500k

NAVISTAR TRUCK GROUP GENIV BODY
CONTROLLER
NAVISTAR P/N: 4044470C4 JOB NUM:
SRENA S/N: 00000000 MANUF DATE: 000000
SRENA P/N: 00000-0000 ASSEMBLED IN MEXICO
SERVICE PART *

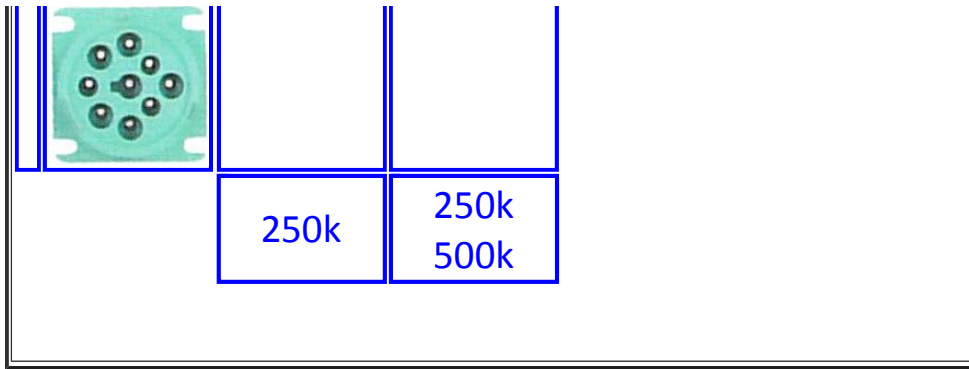
4044470C4

- Current version of Generation 4 Body Controller.
- Can communicate with 250k baud and 500k baud data links.
- Can be installed on current model year and older vehicles.

COMMUNICATION BAUD RATE



PLUG			
R E C E P T A C L E			
			A vehicle with a BLACK receptacle can communicate at 250k baud. A vehicle with a GREEN receptacle can communicate at both 250k / 500k baud (when properly programmed). When connecting an <i>Electronic Service Tool</i> (EST) to the vehicle: • A BLACK plug on an interface cable will only connect with a BLACK receptacle. • The GREEN plug on an interface cable will connect to both BLACK and GREEN receptacles.

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