SERVICE MANUAL SECTION

BODY CONTROLLER DIAGNOSTIC TROUBLE CODES

Model: 3200
Model: 4100
Model: 4300
Model: 4400
Model: 7300
Model: 7400
Model: 7500
Model: 7600
Model: 7700
Model: 8500
Model: 8600
Model: BE 200
Model: CE Bus
Model: CXT
Model: DuraStar
Model: LoneStar
Model: MXT
Model: ProStar

Model: RXT

Model: TranStar

Model: WorkStar

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1. DISPLAYING DIAGNOSTIC TROUBLE CODES

The ability to display diagnostic trouble codes (DTC) is an optional feature. Codes may be displayed on either the gauge cluster or an optional vehicle information display (VID). **The vehicle must be equipped with the option to display codes in both cases.** Codes will not be displayed on the gauge cluster if the vehicle is equipped with the VID.

1.1. VEHICLES EQUIPPED WITH OPTION TO DISPLAY CODES

1.1.1. Displaying Codes on the Gauge Cluster (Non-VID equipped vehicles)

To display codes on vehicles not equipped with a VID:

1. Set the parking brake.

2. Turn the key switch to the ACCESSORY position to view only previously active codes. Turn the key switch to the IGNITION position to view both active and previously active codes.

3. Momentarily press the Cruise "ON" switch and the Cruise "Resume" switch at the same time.

A gauge sweep will be performed on the gauges. The gauge cluster will then display the following information for 5 seconds:

- Software Rev: XXX
- Hardware Rev: XXX
- Active Faults: XXX
- Total Faults: XXX

NOTE – The gauge cluster will only display “Software Rev” and “Hardware Rev” for 5 seconds followed by the message “Diagnostic Trouble Codes are not available” if the vehicle is not equipped with the option to display codes.

If faults are present, the gauge cluster display will show each diagnostic trouble code for 10 seconds and then automatically scroll to the next entry and continue to cycle through the faults. Once all faults have been displayed the number of faults will be displayed again, then the cycle will repeat. To manually cycle through the fault list press and release the cluster display selector button. The following information will be displayed for each fault:

SPN: XXXX FMI: XX
Active
OC: XXX SA: XXX

SPN: XXXX FMI: XX
Previously Active
OC: XXX SA: XXX

NOTE – Turning the key switch off, turning the key switch to the CRANK position, or releasing the park brake will take the gauge cluster out of the diagnostic mode.

1.1.2. Displaying Codes on the VID (if equipped)

The VID can be used to display all diagnostic trouble codes (DTC) on the vehicle. Suspect parameter number (SPN), failure mode indicator (FMI) and occurrence count numbers are listed. Source addresses and DTC descriptions are presented in plain text.

NOTE – The VID will display “Not Available” if a DTC description is not available for a particular fault.

Displaying codes will only be allowed if all of the following conditions are true:

- The key switch is in the IGNITION position.
- AND displaying codes is allowed due to vehicle orderable options
- AND the programmable parameter “**Diagnostics**” is enabled using Diamond Logic® Builder (DLB).
- The vehicle is not moving (the Vehicle Speed is equal to zero).
- The feature is not password protected to prevent unauthorized access. Refer to the Vehicle Information Display Owner’s Manual for more information.

Perform the following steps if all of the above conditions are met:

1. Go to the main menu screen

NOTE – The following selections will not be available if the vehicle is not equipped with the option to display codes.

2. Select “DIAGNOSTIC CODES”

3. Select “ACTIVE” or “INACTIVE”. The VID may initiate a password prompt if the VID has been password protected. Refer to the Vehicle Information Display Owner’s Manual for more information.

The VID will indicate "NO FAULT DETECTED" if faults are not found. Scroll through the list of faults if faults are present.

The following information will be displayed for each fault:

SPN : FMI OC
SA
DTC Description

2. CLEARING DIAGNOSTIC TROUBLE CODES

Previously active diagnostic trouble codes can only be cleared by a service tool, such as Diamond Logic® Builder (DLB). Some previously active codes may not be cleared by this method.

3. DEFINITIONS

- “**SPN**” represents the Suspect Parameter Number. This number identifies the item for which diagnostics are being reported.
- “**FMI**” is the Failure Mode Indicator. This number represents the type of failure detected. Refer to Failure Mode Indicators (FMI) below for more information.

- "**Active**" or "**Previously Active**" will be displayed to identify whether a fault is currently active or if the fault was previously active.
- "**OC**" is the Occurrence Count. This number represents the number of times a fault has gone from previously active to active.
- "**SA**" is the Source Address. This number identifies the module reporting the fault. Refer to Source Addresses (SA) for more information.

3.1. FAILURE MODE INDICATORS (FMI)

- FMI=0 - Data Valid But Above Normal Operational Range - Most Severe Level
- FMI=1 - Data Valid But Below Normal Operational Range - Most Severe Level
- FMI=2 - Data Erratic, Intermittent Or Incorrect
- FMI=3 - Voltage Above Normal, Or Shorted To High Source
- FMI=4 - Voltage Below Normal, Or Shorted To Low Source
- FMI=5 - Current Below Normal Or Open Circuit
- FMI=6 - Current Above Normal Or Grounded Circuit
- FMI=7 - Mechanical System Not Responding Or Out Of Adjustment
- FMI=8 - Abnormal Frequency Or Pulse Width Or Period
- FMI=9 - Abnormal Update Rate
- FMI=10 - Abnormal Rate Of Change
- FMI=11 - Root Cause Not Known
- FMI=12 - Bad Intelligent Device Or Component
- FMI=13 - Out Of Calibration
- FMI=14 - Special Instructions
- FMI=15 - Data Valid But Above Normal Operating Range - Least Severe Level
- FMI=16 - Data Valid But Above Normal Operating Range - Moderately Severe Level
- FMI=17 - Data Valid But Below Normal Operating Range - Least Severe Level
- FMI=18 - Data Valid But Below Normal Operating Range - Moderately Severe Level
- FMI=19 - Received Network Data In Error
- FMI=20 - Data Drifted High
- FMI=21 - Data Drifted Low
- FMI=31 - Condition Exists

3.2. SOURCE ADDRESSES (SA)

NOTE – The available source addresses will vary depending on each vehicle configuration.

NOTE – Diagnostic Trouble Codes listed in this document are Body Controller, Auxiliary Gauge Switch Pack, Secondary Instrument Cluster, Instrument Cluster, Rear HVAC Module, and Compass Module.

Module Name	Source Address
Engine Control Module (ECM)	00
Transmission Control Module (TCM)	03
Shift Selector	05
Antilock Brake System (ABS)	11
Electronic Gauge Cluster (EGC)	23
Compass Module	28
Body Controller	33
Vehicle Sensor Module (VSM)	39
Vehicle Information Display (VID)	40
Tire Pressure Monitoring System (TPMS)	51
Rear HVAC	58
Aftertreatment Module	61
Telematics Module	74
Auxiliary Gauge Switch Pack (AGSP) 3	132
Secondary Instrument Cluster (SIC) 1	167
Hybrid Electric Vehicle (HEV) or Eaton Transmission Control Pad	239
Power Pack 3	247
Service Tool	249
Global	255

4. DIAGNOSTIC TROUBLE CODE (DTC) LIST

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
23	171	Ambient Air Temperature	3	Fault on Analog Input 3 above normal when used for outside temperature	Voltage above normal, or shorted to high source			
23	171	Ambient Air Temperature	4	Fault on Analog Input 3 below normal when used for outside temperature	Voltage below normal, or shorted to low source			
23	623	Red Stop Lamp	5	Red stop light malfunction	Current below normal or open circuit			
23	624	Amber Warning Lamp	5	Amber Warning light malfunction	Current below normal or open circuit			
23	928	Axle Location	3	Fault on Analog Input 1 when used for axle load	Voltage above normal, or shorted to high source			
23	928	Axle Location	4	Fault on Analog Input 1 when used for axle load	Voltage below normal, or shorted to low source			
23	987	Protect Lamp	5	Protect warning light malfunction	Current below normal or open circuit			
23	1213	Malfunction Indicator Lamp	5	MIL warning light malfunction	Current below normal or open circuit			

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
23	1438	ABS/EBS Amber Warning Lamp State (Powered Vehicle)	5	ABS warning light malfunction	Current below normal or open circuit			
23	1439	EBS Red Warning Lamp State	5	Brake Pressure warning lamp malfunction	Current below normal or open circuit			
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23), lost communication with ESC.	Loss of drive-train data link.	Loss of communication in excess of 10 seconds.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23), lost communication with engine controller.	Loss of drive-train data link.	Loss of communication in excess of 10 seconds.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23). ABS warning light malfunction.				
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23). Trailer ABS (Bus Lift Gate) warning light malfunction.				

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23). Datalink ignition signal does not match the hardwired ignition signal.				
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 1, data out of range high.		Data for this gauge is above the value that can be displayed.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 1, data out of range low.		Data for this gauge is below the value that can be displayed.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 1, sensor fault.		There is a problem with the sensor that provides data for this gauge.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 1, data unavailable.		The data for this gauge should be, but is not available.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 1, data missing.		The data for this gauge is not being transmitted.		

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 2, data out of range high.		Data for this gauge is above the value that can be displayed.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 2, data out of range low.		Data for this gauge is below the value that can be displayed.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 2, sensor fault.		There is a problem with the sensor that provides data for this gauge.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 2, data unavailable.		The data for this gauge should be, but is not available.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 2, data missing.		The data for this gauge is not being transmitted.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 3, data out of range high.		Data for this gauge is above the value that can be displayed.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 3, data out of range low.		Data for this gauge is below the value that can be displayed.		

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 3, sensor fault.		There is a problem with the sensor that provides data for this gauge.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 3, data unavailable.		The data for this gauge should be, but is not available.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 3, data missing.		The data for this gauge is not being transmitted.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 4, data out of range high.		Data for this gauge is above the value that can be displayed.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 4, data out of range low.		Data for this gauge is below the value that can be displayed.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 4, sensor fault.		There is a problem with the sensor that provides data for this gauge.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 4, data unavailable.		The data for this gauge should be, but is not available.		

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 4, data missing.		The data for this gauge is not being transmitted.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 5, data out of range high.		Data for this gauge is above the value that can be displayed.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 5, data out of range low.		Data for this gauge is below the value that can be displayed.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 5, sensor fault.		There is a problem with the sensor that provides data for this gauge.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 5, data unavailable.		The data for this gauge should be, but is not available.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 5, data missing.		The data for this gauge is not being transmitted.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 6, data out of range high.		Data for this gauge is above the value that can be displayed.		

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 6, data out of range low.		Data for this gauge is below the value that can be displayed.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 6, sensor fault.		There is a problem with the sensor that provides data for this gauge.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 6, data unavailable.		The data for this gauge should be, but is not available.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 6, data missing.		The data for this gauge is not being transmitted.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 7, data out of range high.		Data for this gauge is above the value that can be displayed.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 7, data out of range low.		Data for this gauge is below the value that can be displayed.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 7, sensor fault.		There is a problem with the sensor that provides data for this gauge.		

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 7, data unavailable.		The data for this gauge should be, but is not available.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 7, data missing.		The data for this gauge is not being transmitted.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 8, data out of range high.		Data for this gauge is above the value that can be displayed.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 8, data out of range low.		Data for this gauge is below the value that can be displayed.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 8, sensor fault.		There is a problem with the sensor that provides data for this gauge.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 8, data unavailable.		The data for this gauge should be, but is not available.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 8, data missing.		The data for this gauge is not being transmitted.		

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 9, data out of range high.		Data for this gauge is above the value that can be displayed.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 9, data out of range low.		Data for this gauge is below the value that can be displayed.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 9, sensor fault.		There is a problem with the sensor that provides data for this gauge.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 9, data unavailable.		The data for this gauge should be, but is not available.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 9, data missing.		The data for this gauge is not being transmitted.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 10, data out of range high.		Data for this gauge is above the value that can be displayed.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 10, data out of range low.		Data for this gauge is below the value that can be displayed.		

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 10, sensor fault.		There is a problem with the sensor that provides data for this gauge.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 10, data unavailable.		The data for this gauge should be, but is not available.		
23	1705	Gauge Cluster (v 8.7)	14	Gauge Cluster (address 23) gauge location 10, data missing.		The data for this gauge is not being transmitted.		
23	1725	Front Axle Above Pressure	3	Fault on Analog Input 2 above normal when used for axle load	Voltage above normal, or shorted to high source			
23	1725	Front Axle Below Pressure	4	Fault on Analog Input 2 below normal when used for axle load	Voltage below normal, or shorted to low source			
23	1727	Rear Axle Above Pressure	3	Fault on Analog Input 1 above normal when used for axle load	Voltage above normal, or shorted to high source			

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
23	1727	Rear Axle Below Pressure	4	Fault on Analog Input 1 below normal when used for axle load	Voltage below normal, or shorted to low source			
23	1792	Tractor-Mounted Trailer ABS Warning Signal	5	Trailer ABS warning light malfunction	Current below normal or open circuit			
23	1793	ATC/ASR Information Signal	5	Traction Control warning light malfunction	Current below normal or open circuit			
23	2000	Source Address 0	9	Loss of data link from Engine Controller	Abnormal update rate			
23	2003	Source Address 3	9	Loss of data link from the Transmission Controller	Abnormal update rate			
23	2011	Source Address 11	9	Loss of data link from ABS controller	Abnormal update rate			
23	2023	Gauge Cluster	14	Gauge Cluster (address 23), lost communication with ESC.	Loss of drive-train data link.	Loss of communication in excess of 10 seconds.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23), lost communication with engine controller.	Loss of drive-train data link.	Loss of communication in excess of 10 seconds.		

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
23	2023	Gauge Cluster	14	Gauge Cluster (address 23). ABS warning light malfunction.				
23	2023	Gauge Cluster	14	Gauge Cluster (address 23). Trailer ABS (Bus Lift Gate) warning light malfunction.				
23	2023	Gauge Cluster	14	Gauge Cluster (address 23). Datalink ignition signal does not match the hardwired ignition signal.				
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 1, data out of range high.		Data for this gauge is above the value that can be displayed.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 1, data out of range low.		Data for this gauge is below the value that can be displayed.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 1, sensor fault.		There is a problem with the sensor that provides data for this gauge.		

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 1, data unavailable.		The data for this gauge should be, but is not available.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 1, data missing.		The data for this gauge is not being transmitted.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 2, data out of range high.		Data for this gauge is above the value that can be displayed.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 2, data out of range low.		Data for this gauge is below the value that can be displayed.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 2, sensor fault.		There is a problem with the sensor that provides data for this gauge.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 2, data unavailable.		The data for this gauge should be, but is not available.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 2, data missing.		The data for this gauge is not being transmitted.		

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 3, data out of range high.		Data for this gauge is above the value that can be displayed.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 3, data out of range low.		Data for this gauge is below the value that can be displayed.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 3, sensor fault.		There is a problem with the sensor that provides data for this gauge.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 3, data unavailable.		The data for this gauge should be, but is not available.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 3, data missing.		The data for this gauge is not being transmitted.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 4, data out of range high.		Data for this gauge is above the value that can be displayed.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 4, data out of range low.		Data for this gauge is below the value that can be displayed.		

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 4, sensor fault.		There is a problem with the sensor that provides data for this gauge.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 4, data unavailable.		The data for this gauge should be, but is not available.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 4, data missing.		The data for this gauge is not being transmitted.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 5, data out of range high.		Data for this gauge is above the value that can be displayed.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 5, data out of range low.		Data for this gauge is below the value that can be displayed.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 5, sensor fault.		There is a problem with the sensor that provides data for this gauge.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 5, data unavailable.		The data for this gauge should be, but is not available.		

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 5, data missing.		The data for this gauge is not being transmitted.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 6, data out of range high.		Data for this gauge is above the value that can be displayed.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 6, data out of range low.		Data for this gauge is below the value that can be displayed.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 6, sensor fault.		There is a problem with the sensor that provides data for this gauge.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 6, data unavailable.		The data for this gauge should be, but is not available.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 6, data missing.		The data for this gauge is not being transmitted.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 7, data out of range high.		Data for this gauge is above the value that can be displayed.		

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 7, data out of range low.		Data for this gauge is below the value that can be displayed.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 7, sensor fault.		There is a problem with the sensor that provides data for this gauge.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 7, data unavailable.		The data for this gauge should be, but is not available.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 7, data missing.		The data for this gauge is not being transmitted.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 8, data out of range high.		Data for this gauge is above the value that can be displayed.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 8, data out of range low.		Data for this gauge is below the value that can be displayed.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 8, sensor fault.		There is a problem with the sensor that provides data for this gauge.		

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 8, data unavailable.		The data for this gauge should be, but is not available.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 8, data missing.		The data for this gauge is not being transmitted.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 9, data out of range high.		Data for this gauge is above the value that can be displayed.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 9, data out of range low.		Data for this gauge is below the value that can be displayed.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 9, sensor fault.		There is a problem with the sensor that provides data for this gauge.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 9, data unavailable.		The data for this gauge should be, but is not available.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 9, data missing.		The data for this gauge is not being transmitted.		

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 10, data out of range high.		Data for this gauge is above the value that can be displayed.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 10, data out of range low.		Data for this gauge is below the value that can be displayed.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 10, sensor fault.		There is a problem with the sensor that provides data for this gauge.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 10, data unavailable.		The data for this gauge should be, but is not available.		
23	2023	Gauge Cluster	14	Gauge Cluster (address 23) gauge location 10, data missing.		The data for this gauge is not being transmitted.		
23	2023	Gauge Cluster	3	Fault on Analog Input 4 above normal when used for ambient light	Voltage above normal, or shorted to high source			
23	2023	Gauge Cluster	4	Fault on Analog Input 4 below when used for ambient light	Voltage below normal, or shorted to low source			

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
23	2023	Gauge Cluster	11	Message ignition and switched ignition do not match.	Root cause not known			
23	2023	Gauge Cluster	12	Failure of non-volatile memory or checksum fault	Bad intelligent device or component			
23	2023	Gauge Cluster	6	Short detected in the panel dimmer	Current above normal or grounded circuit			
23	2033	Source Address 33	9	Loss of data link from ESC	Abnormal update rate			
23	2062	Source Address 62	9	Loss of data link from Meritor Wabco Brake Controller to EGC	Meritor Wabco Brake Controller data link failure to EGC			
28	165	Compass Bearing	12	Sensor Fault/ Compass Bearing	Faulty Compass module sensor			
28	630	Calibration Memory	13	Compass is out of Calibration	Compass is out of calibration, need to Calibrate			
28	639	Drivetrain Message Timeout	2	EEPROM data in the Microcontroller is corrupted or Error in Calibration (The Compass module is not calibrated.)	Data erratic, intermittent or incorrect			

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
28	639	Drivetrain Message Timeout	19	HMC6352 sensor is not responding or communication link with HMC6352 (I2C communication link) not working reliably.	Faulty Compass module or I2C communication link			
28	639	Drivetrain Message Timeout	9	J1939 Communication Link Fault	Faulty Compass or Drivetrain Datalink			
33	69	Two Speed Axle Switch	2	Two Speed Axle Switch Error	Data erratic, intermittent or incorrect			Two_Spd_Axle_Switch
33	70	Air Powered Park Brake	2	The Auto apply portion with the Air Powered Park Brake is not Operating	Data erratic, intermittent or incorrect	Occurs When the Park Brake Switch is not set within 5 seconds of the receipt of the Park as the requested gear. This failure would indicate a failure in the auto apply relay or in the air lines between the auto apply relay and the Park Brake switch.		
33	70	Air Powered Park Brake	7	Air Powered Park Brake is stuck	Mechanical system not responding or out of adjustment	Occurs when the park brake switch does not match the spring apply-air release (SAAR) chamber travel sensor. This indicates the park brake cannot be applied or cannot be released.		

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	70	Air Powered Park Brake	14	Air Powered Park Brake is stuck		Occurs when the park brake switch does not match the spring apply-air release (SAAR) chamber travel sensor. This indicates the park brake cannot be applied or cannot be released.		Park_Brake_SAAR_Travel_Signal, Park_Brake_Switch_Signal
33	70	Air Powered Park Brake	14	The Auto Apply portion with the Air Powered Park Brake is not operating		Occurs When the Park Brake Switch is not set within 5 seconds of the receipt of the Park as the requested gear. This failure would indicate a failure in the auto apply relay or in the air lines between the auto apply relay and the Park Brake switch.		Park_Brake_Switch_Signal
33	77	Forward Rear Drive Axle Temperature	0	Front Rear Axle Temperature Sensor reading above normal range	Front Axle Temperature Sensor Shorted High or Open Circuit or faulty sensor system		1600-B10	Frwd_RR_Axle_Oil_Temp_Raw_Signal
33	77	Forward Rear Drive Axle Temperature	1	Front Rear Axle Temperature Sensor reading below normal range	Front Axle Temperature Sensor Short to Ground or faulty sensor system		1600-B10	Frwd_RR_Axle_Oil_Temp_Raw_Signal
33	78	Rear Rear Drive Axle Temperature	0	Rear Rear Axle Temperature Sensor reading above normal range	Rear Rear Axle Temperature Sensor Shorted High or Open Circuit or faulty sensor system		1600-B11	Rear_RR_Axle_Oil_Temp_Raw_Signal
33	78	Rear Rear Drive Axle Temperature	1	Rear Rear Axle Temperature Sensor reading below normal range	Rear Rear Axle Temperature Sensor Short to Ground or faulty sensor system		1600-B11	Rear_RR_Axle_Oil_Temp_Raw_Signal

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	84	Wheel-Based Vehicle Speed	9	Missing Wheel Based Vehicle Speed Message	J1939 Drivetrain Data Link Lost			Vehicle_Speed
33	94	Fuel Inlet Restriction Lamp	4	Fuel Inlet Restriction Lamp	Output shorted to ground			
33	94	Fuel Inlet Restriction Lamp	6	Fuel Inlet Restriction Lamp	Output overheat			
33	97	Water In Fuel Indicator	4	Water In Fuel Indicator	Output shorted to ground			
33	97	Water In Fuel Indicator	6	Water In Fuel Indicator	Output overheat			
33	115	Alternator Current	2	Phase missing fault/alternator fault.	One or more of the three phase wire from the Dynamic Alternator to the Power Pack E module may be disconnected.	One or more of the three phase wires from the alternator is disconnected. The Power Pack system is shutdown and requires an ignition cycle.		
33	116	Brake Application Pressure	0	Brake Application Pressure Sensor reading above normal range	Brake Application Sensor Shorted High or faulty sensor system		1600-B14	Brake_App_Air_Sensor_Raw_Signal
33	116	Brake Application Pressure	1	Brake Application Pressure Sensor reading below normal range	Brake Application Sensor Short To Ground or Open Circuit or faulty sensor system		1600-B14	Brake_App_Air_Sensor_Raw_Signal
33	158	Battery Potential (Voltage), Switched	2	Key State Ignition Signal Error	Open in Ignition Signal Input Circuit To BC		1600-A16	
33	168	Electrical Potential (Voltage)	2	Comm. fault from ESC/BC to PP3.	Datalink interrupted between ESC and Powerpack.	The Power Pack E Module has stopped receiving heart beet message from the ESC/BC.		
33	168	Electrical Potential (Voltage)	3	DC Module Overvoltage condition on Vehicle DC Bus.	An Over Voltage Condition in the DC regulator (Vehicle Battery Bus).	A High Battery Cutout fault has occurred and the source of the fault is the DC regulator (Vehicle Battery Bus).		

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	168	Electrical Potential (Voltage)	3	AC Module Overvoltage condition on High Voltage DC Bus.	An Over Voltage Condition in the AC module (Inverter High Voltage Bus).	A high Battery Cutout fault has occurred and the source of the fault is the AC module (inverter high voltage bus).		
33	168	Electrical Potential (Voltage)	4	DC Module Undervoltage condition on Vehicle DC Bus.	An Under Voltage Condition in the DC regulator (Vehicle Battery Bus).	A Low Battery Cutout fault has occurred and the source of the fault is the DC regulator (Vehicle Battery Bus).		
33	168	Electrical Potential (Voltage)	4	AC Module Undervoltage condition on High Voltage DC Bus.	An Under Voltage Condition in the AC module (Inverter High Voltage Bus).	A low Battery Cutout fault has occurred and the source of the fault is the AC module (inverter high voltage bus).		
33	168	Electrical Potential (Voltage)	6	AC Module has shutdown due to overload condition.	A Surge may have occurred for a while in the Vehicle AC bus for a long time (The inverter supplies additional current to the load).	An Overload condition has been detected in the AC module and the Vehicle AC bus is shutdown.		
33	168	Electrical Potential (Voltage)	8	Phase missing fault/alternator fault.	One or more of the three phase wire from the Dynamic Alternator to the Power Pack E module may be disconnected.	One or more of the three phase wires from the alternator is disconnected. The Power Pack system is shutdown and requires an ignition cycle.		
33	168	Electrical Potential (Voltage)	16	DC module over temperature condition.	An overcurrent condition in the Vehicle DC Bus might have caused an over temperature.	An Over Temperature fault has occurred and the source of the fault is the DC regulator (Vehicle Battery Bus).		
33	168	Electrical Potential (Voltage)	16	AC module over temperature condition.	An overcurrent condition in the Vehicle AC Bus might have caused an over temperature.	An Over temperature fault has occurred and the source of the fault is the AC module (inverter high voltage bus).		

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	168	Electrical Potential (Voltage)	17	PPE3 Fuse Open.	Load exceeded rating.	PPE3 module Fuse is Open.		
33	175	Engine Oil Temperature 1	0	Engine Oil Temp Sensor reading above normal range	Engine Oil Temperature Sensor Shorted High or Open Circuit or faulty sensor system		1600-B6	Eng_Oil_Temp_Raw_Signal
33	175	Engine Oil Temperature 1	1	Engine Oil Temp Sensor reading below normal range	Engine Oil Temperature Sensor Short to Ground or faulty sensor system		1600-B6	Eng_Oil_Temp_Raw_Signal
33	177	Transmission Oil Temperature	0	Transmission Oil Temperature Sensor reading above normal range	Transmission Oil Temperature Sensor Shorted High or Open Circuit or faulty sensor system		1600-B7	Trans_Oil_Temp_Raw_Signal
33	177	Transmission Oil Temperature	1	Transmission Oil Temperature Sensor reading below normal range	Transmission Oil Temperature Sensor Short to Ground or faulty sensor system		1600-B7	Trans_Oil_Temp_Raw_Signal
33	247	Total Engine Hours	9	Engine Total Hours Not Received	The Engine Control Module did send the Total Engine Hours or possible Data Link failure			Engine_Hours_Byte_1
33	564	Differential Lock State - Central	5	Transfer Case Lock Under Current Or Open Circuit	Current below normal or open circuit	Not available	Not available	MATV_Xfer_Case_Lock_Sol_Cmd
33	564	Differential Lock State - Central	6	Transfer Case Lock Relay Over Current	Current above normal or grounded circuit	Not available	Not available	MATV_Xfer_Case_Lock_Sol_Cmd
33	566	Differential Lock State - Central Rear	5	Power Divider Lock Relay Under Current Or Open Circuit	Open Circuit in Power Divider Lock Circuit			PDL_Lock_Solenoid_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	566	Differential Lock State - Central Rear	6	Power Divider Lock Relay Over Current	Short To Ground in Power Divider Lock Circuit			PDL_Lock_Solenoid_Cmd
33	567	Differential Lock State - Front Axle 1	5	Forward Axle 1 Diff lock air solenoid output undercurrent or open circuit	Current below normal or open circuit	Not available	Not available	Diff_Lock_Fwd_Solenoid_Cmd, MATV_Diff_Lock_Front_Sol_Cmd
33	567	Differential Lock State - Front Axle 1	6	Forward Axle 1 Diff lock air solenoid output overcurrent	Current above normal or grounded circuit	Not available	Not available	Diff_Lock_Fwd_Solenoid_Cmd, MATV_Diff_Lock_Front_Sol_Cmd
33	569	Differential Lock State - Rear Axle 1	5	Forward Rear Diff Lock Relay Under Current Or Open Circuit	Open Circuit in Forward Rear Diff Lock Circuit			Diff_Lock_1_Solenoid_Cmd, Diff_Lock_Solenoid_Cmd, Diff_Lock_Rear_Solenoid_Cmd, MATV_Diff_Lock_Rear_Sol_Cmd
33	569	Differential Lock State - Rear Axle 1	6	Forward Rear Diff Lock Relay Over Current	Short To Ground in Forward Rear Diff Lock Circuit			Diff_Lock_1_Solenoid_Cmd, Diff_Lock_Solenoid_Cmd, Diff_Lock_Rear_Solenoid_Cmd, MATV_Diff_Lock_Rear_Sol_Cmd
33	570	Differential Lock State - Rear Axle 2	5	Rear Rear Diff Lock Relay Under Current Or Open Circuit	Open Circuit in Rear Rear Diff Lock Circuit			Diff_Lock_2_Solenoid_Cmd
33	570	Differential Lock State - Rear Axle 2	6	Rear Rear Diff Lock Relay Over Current	Short To Ground in Rear Rear Diff Lock Circuit			Diff_Lock_2_Solenoid_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	571	Retarder Enable - Brake Assist Switch	2	Retarder Enable - Brake Assist On/Off switch failure	Data erratic, intermittent or incorrect			Comp_Brake_Switch, Eng_Retarder_Switch
33	576	ASR Off-road Switch	2	Traction Disable panel mounted switch is in an invalid position	Data erratic, intermittent or incorrect			Traction_Disable_SW
33	577	ASR "Hill Holder" Switch	2	HSA Disable Switch error	Fault in HSA Disable Switch	Not available	Not available	HSA_Disable_Switch
33	596	Cruise Control Enable Switch	0	Cruise Control Switch reading above normal range	Shorted High or Open in Cruise Control Switches Circuit		1600-B16	Cruise_Switch_Raw_Signal
33	596	Cruise Control Enable Switch	1	Cruise Control Switch reading below normal range	Short To Ground in Cruise Control Switches Circuit		1600-B16	Cruise_Switch_Raw_Signal
33	596	Cruise Control Enable Switch	2	Cruise Control Enable Switch error	Data erratic, intermittent or incorrect			BUS_Cruise_On_Switch, Cruise_Switch_Raw_Signal
33	597	Brake Switch	0	Brake Switch reading above normal range	Brake Switch Shorted High or Open Circuit or faulty sensor system		1602-E14 & E15	Brake_Analog_Switch_Raw_Signal
33	597	Brake Switch	1	Brake Switch reading below normal range	Brake Switch Short To Ground or faulty sensor system		1602-E14 & E15	Brake_Analog_Switch_Raw_Signal
33	597	Brake Switch	2	Brake Switch Inputs Do Not Match	High resistance in the wire harness, defective brake switch, or a defective Body Controller or defective ABS controller or Datalink		1602-E14 & E15	Brake_Switch_Signal

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	597	Brake Switch	7	Brake Switch Stuck Open Or Closed	Defective Brake Switch		1602-E14 & E15	Brake_Switch_Signal
33	597	Brake Switch	14	Brake switch is stuck in the open or closed position	Defective brake switch	Occurs if the wheel based vehicle speed increases from 0kph to 72kph two times without the brake switch opening or decreases from 72kph to 0kph two times without the brake switch closing.		Brake_Switch_Signal
33	597	Brake Switch	14	Brake switch inputs do not match	Occurs if there is a high resistance in the wire harness, defective brake switch or a defective Electronic Systems Controller (ESC).	Occurs if the comparison of the inputs indicates a mismatch in the analog and digital signals.		Brake_Switch_Signal
33	598	Clutch Switch	0	Clutch Switch reading above normal range	Upper Clutch Switch Shorted High or Open Circuit or faulty sensor system		1600-B4	Clutch_Switch_Raw_Signal
33	598	Clutch Switch	1	Clutch Switch reading below normal range	Upper Clutch Switch Short To Ground or faulty sensor system		1600-B4	Clutch_Switch_Raw_Signal
33	598	Clutch Switch	7	Clutch Switch Stuck	Defective Upper Clutch Switch		1600-B4	Clutch_Switch_Raw_Signal
33	598	Clutch Switch	14	Upper Clutch Switch stuck in the open or closed position	Defective upper clutch switch	Occurs if the vehicle speed increases from 0kph to 72kph without a change in state of the clutch switch.		Clutch_Switch_Raw_Signal
33	599	Cruise Control Set Switch	2	Cruise SET /Resume Panel mounted switch error	Data erratic, intermittent or incorrect			BUS_Cruise_Set_Switch

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	604	Transmission Neutral Switch	2	Transmission Auto Neutral Enable Switch Error	Data erratic, intermittent or incorrect			Auto_Neutl_Switch
33	608	J1587/1708 Datalink	9	J1708 (J1587) Switch Data Link Lost	Faulty BC or Switch Data Link			
33	611	Virtual Fuse	3	Unexpected Connection	A connection has been made to an output that has no functionality assigned.			
33	614	Gauge Cluster Checksum	14	Global Broadcast Messages, J1939, proprietary, public bus (drivetrain) (address 255) has an unknown checksum fault.				
33	623	Red Stop Lamp	4	Red Stop Lamp	Output shorted to ground			
33	623	Red Stop Lamp	5	Red Stop Lamp	Output open circuit			
33	623	Red Stop Lamp	6	Red Stop Lamp	Output overheat			
33	624	Amber Warning Lamp	4	Amber Warning Lamp	Output shorted to ground			
33	624	Amber Warning Lamp	5	Amber Warning Lamp	Output open circuit			
33	624	Amber Warning Lamp	6	Amber Warning Lamp	Output overheat			
33	625	Switch and Door Pod	14	Global Broadcast Messages, J1708, proprietary messages (escape PID) (address 255) has an unknown fault.			1600-29, 1600-30	
33	626	Engine Start Enable Device 1	5	Fuel Heater Relay Under Current Or Open Circuit	Open Circuit in Fuel Heater Circuit			Fuel_Heater_Req

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	626	Engine Start Enable Device 1	6	Fuel Heater Relay Over Current	Short To Ground in Fuel Heater Circuit			Fuel_Heater_Req
33	639	Drivetrain Message Timeout	9	J1939 Drivetrain Data Link Lost	Faulty BC or Drivetrain Data Link			J1939DT_Root_Comm_Fail
33	639	Drivetrain Message Timeout	14	Failed to receive PGN 65535.				
33	639	Drivetrain Message Timeout	14	Communication fault (from PP3 to ESC)	Datalink interrupted between ESC and Powerpack.	Check for open circuit or short in J1939 datalink.		
33	685	Disengage Differential Lock Request - Front Axle 1	2	Forward axle 1 diff lock switch error	Data erratic, intermittent or incorrect	Not available	Not available	Diff_Lock_1_Switch
33	687	Disengage Differential Lock Request - Rear Axle 1	2	Forward Rear Diff Lock Switch Error	Faulty Switch Actuator or Microswitch for Forward Rear Diff Lock Switch			Diff_Lock_Switch, Diff_Lock_1_Switch
33	688	Disengage Differential Lock Request - Rear Axle 2	2	Rear Rear Diff Lock Switch Error	Faulty Switch Actuator or Microswitch for Rear Rear Diff Lock Switch			Diff_Lock_2_Switch
33	691	Disengage Differential Lock Request - Central Rear	2	Power Divider Lock Switch Error	Faulty Switch Actuator or Microswitch for Power Divider Lock Switch			PDL_Lock_Switch
33	829	Left Fuel Level Sensor	0	Fuel Tank 1 Sensor reading above normal range	Fuel Tank 1 Sensor Shorted High or Open Circuit or faulty sensor system	Not available	1600-B8	Fuel_Sensor1_Raw_Signal
33	829	Left Fuel Level Sensor	1	Fuel Tank 1 Sensor reading below normal range	Fuel Tank 1 Sensor Short To Ground or faulty sensor system	Not available	1600-B8	Fuel_Sensor1_Raw_Signal
33	830	Right Fuel Level Sensor	0	Fuel Tank 2 Sensor reading above normal range	Fuel Tank 2 Sensor Shorted High or Open Circuit or faulty sensor system		1600-B9	Fuel_Sensor2_Raw_Signal

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	830	Right Fuel Level Sensor	1	Fuel Tank 2 Sensor reading below normal range	Fuel Tank 2 Sensor Short To Ground or faulty sensor system		1600-B9	Fuel_Sensor2_Raw_Signal
33	871	Refrigerant Charge	1	AC - Service now Very low charge	Data valid but below normal operational range - most severe level			BC_RCD_Temp_In_Raw_Signal, BC_RCD_Temp_Out_Raw_Signal
33	871	Refrigerant Charge	18	AC - Service now low charge	Data valid but below normal operating range - moderately severe level			BC_RCD_Temp_In_Raw_Signal, BC_RCD_Temp_Out_Raw_Signal
33	876	Compressor Clutch Circuit	5	HVAC Compressor Clutch Engagement Undercurrent	Open in HVAC AC Compressor Clutch Circuit		1603-C	BC_RCD_AC_Comp_Clutch_Cmd
33	876	Compressor Clutch Circuit	6	HVAC Compressor Clutch Engagement Overcurrent	Short to Ground or Overload in HVAC AC Compressor Clutch Circuit		1603-C	BC_RCD_AC_Comp_Clutch_Cmd
33	878	Clearance, Side Marker, Identification Lamp Circuit (Black)	5	Trailer Marker Lamp Relay Under Current Or Open Circuit	Open Circuit in Trailer Marker Lamp Circuit		1601-F14	Trailer_Marker_Light
33	878	Clearance, Side Marker, Identification Lamp Circuit (Black)	6	Trailer Marker Lamp Relay Over Current	Short To Ground in Trailer Marker Lamp Circuit		1601-F14	Trailer_Marker_Light
33	879	Left Turn Lamp Circuit (Yellow)	5	Trailer Left Turn Lamp Relay Under Current Or Open Circuit	Open Circuit in Trailer Left Turn Lamp Circuit		1601-F13	Trailer_Left_Light

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	879	Left Turn Lamp Circuit (Yellow)	6	Trailer Left Turn Lamp Relay Over Current	Short To Ground in Trailer Left Turn Lamp Circuit		1601-F13	Trailer_Left_Light
33	880	Stop Lamp Circuit (Red)	5	Stop Lights Relay Under Current Or Open Circuit	Current below normal or open circuit		1601-E5	Stop_Relay_Cmd
33	880	Stop Lamp Circuit (Red)	6	Stop Lights Relay Overcurrent	Current above normal or grounded circuit		1601-E5	Stop_Relay_Cmd
33	881	Right Turn Lamp Circuit (Green)	5	Trailer Right Turn Lamp Relay Under Current Or Open Circuit	Open Circuit in Trailer Right Turn Lamp Circuit		1601-E15	Trailer_Right_Light
33	881	Right Turn Lamp Circuit (Green)	6	Trailer Right Turn Lamp Relay Over Current	Short To Ground in Trailer Right Turn Lamp Circuit		1601-E15	Trailer_Right_Light
33	882	Tail Lamp/License Plate Lamp Circuit (Brown)	5	Trailer License Plate Lamp Relay Under Current Or Open Circuit	Open Circuit in Trailer License Plate Lamp Circuit		1601-E10	Trailer_Plate_Light
33	882	Tail Lamp/License Plate Lamp Circuit (Brown)	6	Trailer License Plate Lamp Relay Over Current	Short To Ground in Trailer License Plate Lamp Circuit		1601-E10	Trailer_Plate_Light
33	972	Accelerator Interlock Switch	2	Accelerator Interlock Switch Error	Faulty Switch Actuator or Microswitch for Accelerator Interlock	Not available	Not available	Accelerator_Interlock_On_Switch
33	972	Accelerator Interlock Switch	6	Over current for Accelerator Interlock Switch Indicator	Over current or Short to Battery for the Accelerator Interlock Switch Indicator.	MSM Switch Indicator overcurrent fault		
33	973	Engine Retarder Selection	2	Engine Retarder Level Selection Switch Error	Faulty Switch Actuator or Microswitch for Engine Retarder Level Select Switch			Comp_Brake_3_Switch
33	980	PTO Enable Switch	2	Engine PTO Switch Error	Data erratic, intermittent or incorrect			PTO_Enable_Switch

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	986	Requested Percent Fan Speed	2	Engine Fan Switch Error	Faulty Switch Actuator or Microswitch for Engine Fan Switch			Fan_Ovrd_Switch
33	1043	Internal Sensor Voltage Supply	0	Bias Voltage reading above normal range	Bias Voltage Circuit Shorted High			Bias_Voltage_Raw_Signal
33	1043	Internal Sensor Voltage Supply	1	Bias Voltage reading below normal range	Short To Ground in Bias Voltage Circuit			Bias_Voltage_Raw_Signal
33	1044	Hydraulic Pump Motor	5	Current below Normal or Open Circuited	Current below Normal or Open Circuited			Motor_Input_Raw_Signal
33	1044	Hydraulic Pump Motor	4	Voltage below Normal or Shorted to Low Source	Voltage below Normal or Shorted to Low Source			Motor_Input_Raw_Signal
33	1044	Hydraulic Pump Motor	3	Voltage above Normal or Shorted to High Source	Voltage above Normal or Shorted to High Source			Motor_Input_Raw_Signal
33	1079	Vref Sensor Supply Voltage	0	5V Sensor Supply Above Normal Range	Data valid but above normal operational range - most severe level			Switched_5V_Sense_Raw_Signal
33	1079	Vref Sensor Supply Voltage	1	5V Sensor Supply Below Normal Range	Data valid but below normal operational range - most severe level			Switched_5V_Sense_Raw_Signal
33	1081	Wait to Start Lamp	4	Wait to Start Lamp	Output shorted to ground			
33	1081	Wait to Start Lamp	6	Wait to Start Lamp	Output overheat			
33	1087	Service Brake Air Pressure Circuit #1	0	Primary Air Tank Sensor reading above normal range	Primary Air Tank Sensor Shorted High or faulty sensor system		1600-B2	Primary_Air_Sensor_Raw_Signal

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	1087	Service Brake Air Pressure Circuit #1	1	Primary Air Tank Sensor reading below normal range	Primary Air Tank Sensor Short To Ground or Open Circuit or faulty sensor system		1600-B2	Primary_Air_Sensor_Raw_Signal
33	1088	Service Brake Air Pressure Circuit #2	0	Secondary Air Tank Sensor reading above normal range	Secondary Air Tank Sensor Shorted High or faulty sensor system		1600-B3	Secondary_Air_Sensor_Raw_Signal
33	1088	Service Brake Air Pressure Circuit #2	1	Secondary Air Tank Sensor reading below normal range	Secondary Air Tank Sensor Short To Ground or Open Circuit or faulty sensor system		1600-B3	Secondary_Air_Sensor_Raw_Signal
33	1089	Auxiliary Equipment Supply Pressure	0	Auxiliary Air Tank Sensor Reading Above Normal	Short to High in Air Pressure Auxiliary Sensor Circuit		1600-B2	Auxiliary_Air_Sensor_Raw_Signal
33	1089	Auxiliary Equipment Supply Pressure	1	Auxiliary Air Tank Sensor Reading Below Normal	Short to Ground or Open in Air Pressure Auxiliary Sensor Circuit		1600-B2	Auxiliary_Air_Sensor_Raw_Signal
33	1231	Body Address Claim/Message Timeout	9	J1939 Body Builder Data Link Lost	Faulty BC or Bodybuilder Data Link			J1939DT_Rcv_61441_xxx_011_Timer
33	1231	Body Address Claim/Message Timeout	14	Global Broadcast Messages, J1939, proprietary, private bus (body builder) (address 255) has an unknown fault.				
33	1238	Traction Control Override Switch	2	ATC OFF-ROAD Switch Error	Faulty Switch Actuator or Micro switch for ATC OFF-ROAD Switch	Not available	Not available	ATC_Off_Road_Enable
33	1378	Change Oil Lamp	4	Change Oil Lamp	Output shorted to ground			
33	1378	Change Oil Lamp	6	Change Oil Lamp	Output overheat			

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	1382	Fuel Filter (suction side) Differential Pressure	14	The filter between the fuel pump and the fuel tank is plugged.	Heavy build up of particulate matter in the fuel filter preventing fuel flow.	The detection has indicated a value of 51 on the fuel filter signal which indicates a severely restricted or plugged condition.		Fuel_Filter_Plugged_Ind_Cmd
33	1547	A/C Evaporator Temperature	0	HVAC Inlet Temp Sensor reading above normal range	HVAC Refrigerant Inlet Temperature Sensor Shorted High or Open Circuit or faulty sensor system		1600-B5	BC_RCD_Temp_In_Raw_Signal
33	1547	A/C Evaporator Temperature	1	HVAC Inlet Temp Sensor reading below normal range	HVAC Refrigerant Inlet Temperature Sensor Short To Ground or faulty sensor system		1600-B5	BC_RCD_Temp_In_Raw_Signal
33	1548	HVAC Duct Temperature	0	HVAC Outlet Temp Sensor reading above normal range	HVAC Refrigerant Outlet Temperature Sensor Shorted High or Open Circuit or faulty sensor system		1600-B13	BC_RCD_Temp_Out_Raw_Signal
33	1548	HVAC Duct Temperature	1	HVAC Outlet Temp Sensor reading below normal range	HVAC Refrigerant Outlet Temperature Sensor Short To Ground or faulty sensor system		1600-B13	BC_RCD_Temp_Out_Raw_Signal
33	1552	Operator Input device for Cab Climate Control	2	HVAC Control Head Temperature Mix DM1	HVAC Motor in Wrong Position or Jammed			RCD_HVAC_Ctrl_Head_Diag_Signal
33	1553	HVAC Blower Motor Speed Adjustment	0	HVAC Blower Speed Analog Input reading above normal range	HVAC Blower Speed Control Shorted High or Open Circuit or faulty sensor system		1600-B15	Front_AC_Blower_Speed_Raw
33	1553	HVAC Blower Motor Speed Adjustment	1	HVAC Blower Speed Analog Input reading below normal range	HVAC Blower Speed Control Short To Ground or faulty sensor system		1600-B15	Front_AC_Blower_Speed_Raw

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	1653	Vehicle Limiting Speed Governor Enable Switch	2	Vehicle Limiting Speed Governor Enable Switch Error	Faulty Switch Actuator or Microswitch for AVSL Switch	Not available	Not available	AVSL_On_Switch
33	1653	Vehicle Limiting Speed Governor Enable Switch	6	Over current for Vehicle Limiting Speed Governor Enable Switch Indicator	Over current or Short to Battery for the Vehicle Limiting Speed Governor Enable Switch Indicator.	MSM Switch Indicator overcurrent fault		
33	1660	Engine Automatic Start Alarm	5	Remote Start Alarm Buzzer Relay Under Current Or Open Circuit	Open Circuit in Remote Start Alarm Buzzer Circuit			Remote_Start_Alarm_Buzzer_Relay
33	1660	Engine Automatic Start Alarm	6	Remote Start Alarm Buzzer Relay Over Current	Short To Ground in Remote Start Alarm Buzzer Circuit			Remote_Start_Alarm_Buzzer_Relay
33	1709	Transmission Controller Power Relay	5	PRNDL Pseudo ignition relay driver output Under Current Or Open Circuit	Current below normal or open circuit		1601-E3	PRNDL_Trans_Pseudo_Ignition_Cmd
33	1709	Transmission Controller Power Relay	6	PRNDL Pseudo ignition relay driver output overcurrent	Current above normal or grounded circuit		1601-E3	PRNDL_Trans_Pseudo_Ignition_Cmd
33	1716	Retarder Selection, non-engine	2	Transmission Retarder Level Selection Switch Failure	Data erratic, intermittent or incorrect			Retarder_High_Switch
33	1741	Level Control Mode	0	Mode Selection Switch Damaged or Not Connected	Data Valid but Above Normal Range, Most Severe	Not available	Not available	SHCS_Switch_High_Position
33	1741	Level Control Mode	1	Possible ECU Malfunction	Data Valid, but Below Normal Range, Most Severe	Not available	Not available	SHCS_Switch_High_Position

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	1747	Kneeling Control Mode Request	2	Suspension Dump Switch Error	Faulty Switch Actuator or Microswitch for Suspension Dump Switch			Susp_Dump_Dump_Switch
33	1755	Lowering Control Mode Rear Axle	5	Suspension Dump Solenoid B Relay Under Current Or Open Circuit	Open Circuit in Suspension Dump Solenoid B Circuit			Susp_Dump_Solenoid_B_Cmd
33	1755	Lowering Control Mode Rear Axle	6	Suspension Dump Solenoid B Relay Over Current	Short To Ground in Suspension Dump Solenoid B Circuit			Susp_Dump_Solenoid_B_Cmd
33	1756	Lifting Control Mode Rear Axle	5	Suspension Dump Solenoid A Relay Under Current Or Open Circuit	Open Circuit in Suspension Dump Solenoid A Circuit			Susp_Dump_Solenoid_A_Cmd
33	1756	Lifting Control Mode Rear Axle	6	Suspension Dump Solenoid A Relay Over Current	Short To Ground in Suspension Dump Solenoid A Circuit			Susp_Dump_Solenoid_A_Cmd
33	1820	Ramp / Wheel Chair Lift Position	5	Wheelchair Lift Solenoid Relay Under Current Or Open Circuit	Current below normal or open circuit		1601-E1	BUS_WheelChair_Lift_Solenoid_Cmd
33	1820	Ramp / Wheel Chair Lift Position	6	Wheelchair Lift Solenoid Relay Short To Ground	Current above normal or grounded circuit		1601-E1	BUS_WheelChair_Lift_Solenoid_Cmd
33	1837	Convoy Driving Lamp Select	6	BO Drive Overcurrent	Current above normal or grounded circuit	Not available	1603-K	BO_Drive_Cmd
33	1840	Rear Black Out Marker Select	6	BO Marker Overcurrent	Current above normal or grounded circuit	Not available	1603-F	BO_Marker_Cmd
33	1841	Black Out Brake/Stop Lamp Select	6	BO Stop Overcurrent	Current above normal or grounded circuit	Not available	1603-J	BO_Stop_Cmd
33	2000	Source Address 0	9	ECM Data Link Comm. Failure	Faulty ECM or Drivetrain Data Link			J1939DT_Rcv_65265_xxx_000_Timer

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	2000	Source Address 0	19	PTC1 (PGN 64892) not Received from Engine	ECM not Programmed for Aftertreatment, Faulty ECM, or Faulty Drivetrain Data Link			
33	2003	Source Address 3	9	TCM Data Link Comm. Failure	Faulty TCM or Drivetrain Data Link			J1939DT_Rcv_61442_xxx_003_Timer
33	2011	Source Address 11	9	ABS Data Link Comm. Failure	Faulty ABS Module or Drivetrain Data Link			J1939DT_Rcv_61441_xxx_011_Timer
33	2023	Gauge Cluster	9	EGC Data Link Comm. Failure	Faulty EGC or Drivetrain Data Link			J1939DT_Rcv_61184_033_023_Timer
33	2040	Auxiliary Switch Pack #1	9	AGSP #1 Data Link Comm. Failure	Abnormal update rate			J1939DT_Rcv_61184_033_040_Timer
33	2058	Source Address 58	9	Rear HVAC Data Link Communication Failure	Faulty Rear HVAC or Body Builder Data Link			J1939BB_Rcv_61217_058_033_Timer
33	2058	Source Address 58	14	Rear HVAC Data Link Communication Failure	Faulty Rear HVAC or Body Builder Data Link			J1939BB_Rcv_61217_058_033_Timer
33	2062	Source Address 62	9	Meritor Wabco Brake Controller Data Link Comm. Failure to BC	Faulty Meritor Wabco Brake Controller Module Data Link	Not available	Not available	J1939DT_Rcv_65103_xxx_062_Timer
33	2225	Remote Power Module #1 Fuse	9	RPM #1 Data Link Comm. Failure	Abnormal update rate			J1939BB_Rcv_65313_xxx_225_Timer
33	2225	Remote Power Module #1 Fuse	14	Remote Power Module #1 (address 225) has an address problem.	Drivetrain J1939 data link, an improperly addressed RPM module, or a missing RPM module that the BC is expecting			J1939BB_Rcv_65313_xxx_225_Timer
33	2226	Remote Power Module #2 Fuse	9	RPM #2 Data Link Comm. Failure	Abnormal update rate			J1939BB_Rcv_65313_xxx_226_Timer

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	2226	Remote Power Module #2 Fuse	14	Remote Power Module #2 (address 226) has an address problem.	Drivetrain J1939 data link, an improperly addressed RPM module, or a missing RPM module that the BC is expecting			J1939BB_Rcv_65313_xxx_226_Timer
33	2227	Source Address 227	9	RPM #3 Data Link Comm. Failure	Abnormal update rate			J1939BB_Rcv_65313_xxx_227_Timer
33	2227	Source Address 227	14	Remote Power Module #3 (address 227) has an address problem.	Drivetrain J1939 data link, an improperly addressed RPM module, or a missing RPM module that the BC is expecting			J1939BB_Rcv_65313_xxx_227_Timer
33	2228	Remote Power Module #4 Fuse	9	RPM #4 Data Link Comm. Failure	Abnormal update rate			J1939BB_Rcv_65313_xxx_228_Timer
33	2228	Remote Power Module #4 Fuse	14	Remote Power Module #4 (address 228) has an address problem.	Drivetrain J1939 data link, an improperly addressed RPM module, or a missing RPM module that the BC is expecting			J1939BB_Rcv_65313_xxx_228_Timer
33	2229	Source Address 229	9	RPM #5 Data Link Comm. Failure	Abnormal update rate			J1939BB_Rcv_65313_xxx_229_Timer
33	2229	Source Address 229	14	Remote Power Module #5 (address 229) has an address problem.	Drivetrain J1939 data link, an improperly addressed RPM module, or a missing RPM module that the BC is expecting			J1939BB_Rcv_65313_xxx_229_Timer
33	2230	Source Address 230	9	RPM #6 Data Link Comm. Failure	Abnormal update rate			J1939BB_Rcv_65313_xxx_230_Timer
33	2230	Source Address 230	14	Remote Power Module #6 (address 230) has an address problem.	Drivetrain J1939 data link, an improperly addressed RPM module, or a missing RPM module that the BC is expecting			J1939BB_Rcv_65313_xxx_230_Timer

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	2231	Remote Power Module #7 Fuse	9	RPM #7 Data Link Comm. Failure	Abnormal update rate			J1939BB_Rcv_65313_xxx_231_Timer
33	2231	Remote Power Module #7 Fuse	14	Remote Power Module #7 (address 231) has an address problem.	Drivetrain J1939 data link, an improperly addressed RPM module, or a missing RPM module that the BC is expecting			J1939BB_Rcv_65313_xxx_231_Timer
33	2233	Source Address 233	9	Rear Driver Door Pod Data Link Comm. Failure	Faulty Rear Driver Door Pod Module or Switch Data Link			Door_Pod_Rear1_Status_Msg_Timer
33	2234	Remote Air Solenoid #2 Fuse	9	Rear Passenger Door Pod Data Link Comm. Failure	Faulty Rear Passenger Door Pod Module or Switch Data Link			Door_Pod_Rear2_Status_Msg_Timer
33	2236	Source Address 236	9	Driver Door Pod Data Link Comm. Failure	Faulty Driver Door Pod Module or Switch Data Link			Door_Pod_Master_Status_Msg_Timer
33	2237	Source Address 237	9	Passenger Door Pod Data Link Comm. Failure	Faulty Passenger Door Pod Module or Switch Data Link			Door_Pod_Front_Status_Msg_Timer
33	2239	Source Address 239	9	HCM Data Link Comm. Failure	Faulty HCM or Drivetrain Data Link			J1939DT_Rcv_65241_xxx_003_Timer
33	2239	Source Address 239	14	HCM Address Conflict	Drivetrain J1939 data link, an improperly addressed HCM, or a missing HCM that the BC is expecting			J1939DT_Rcv_65241_xxx_003_Timer
33	2247	Source Address 247	9	Communication fault from PP3 to BC.	Private J1939 datalink problem (exceeded bandwidth).	BC has failed to receive heartbeat message from PowerPack E module.		
33	2361	Tractor Rear High Mounted Work Lights Command	2	Work Light Switch Error	Faulty Switch Actuator or Microswitch for Work Light Switch			Work_Light_On_Switch
33	2362	Tractor Rear High Mounted Work Lights	5	Work Light Undercurrent	Open in Work Light Circuit		1603-G	Work_Light_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	2362	Tractor Rear High Mounted Work Lights	6	Work Light Overcurrent	Short To Ground or Overload in Work Light Circuit		1603-G	Work_Light_Cmd
33	2368	Left Turn Signal Lights	5	Left Front Turn Lamp Undercurrent	Open in Left Front Turn Signal Circuit		1603-B	LT_FT_Turn_Cmd
33	2368	Left Turn Signal Lights	6	Left Front Turn Lamp Overcurrent	Short To Ground or Overload in Left Front Turn Signal Circuit		1603-B	LT_FT_Turn_Cmd
33	2370	Right Turn Signal Lights	5	Right Front Turn Lamp Undercurrent	Open in Right Front Turn Signal Circuit		1603-A	RT_FT_Turn_Cmd
33	2370	Right Turn Signal Lights	6	Right Front Turn Lamp Overcurrent	Short To Ground or Overload in Right Front Turn Signal Circuit		1603-A	RT_FT_Turn_Cmd
33	2372	Left Stop Light	5	Left Rear Turn Lamp Undercurrent	Open in Left Rear Turn Signal Circuit	Not available	1603-D	LT_RR_Turn_Cmd, Stop_Lights_Cmd
33	2372	Left Stop Light	6	Left Rear Turn Lamp Overcurrent	Short To Ground or Overload in Left Rear Turn Signal Circuit	Not available	1603-D	LT_RR_Turn_Cmd, Stop_Lights_Cmd
33	2374	Right Stop Light	5	Right Rear Turn Lamp Undercurrent	Open in Right Rear Turn Signal Circuit		1603-M	RT_RR_Turn_Cmd
33	2374	Right Stop Light	6	Right Rear Turn Lamp Overcurrent	Short To Ground or Overload in Right Rear Turn Signal Circuit		1603-M	RT_RR_Turn_Cmd
33	2378	Tractor Marker Light	5	Park Lights Undercurrent	Open in Park Lights Circuit		1604-G	Park_Light_Cmd
33	2378	Tractor Marker Light	6	Park Lights Overcurrent	Short To Ground or Overload in Park Lights Circuit		1604-G	Park_Light_Cmd
33	2387	Tractor Front Fog Lights Command	2	Fog Light Switch Error	Faulty Switch Actuator or Microswitch for Fog Lights Switch			Fog_Light_Switch, Front_Fog_Light_Switch

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	2388	Fog Light 1 command	5	Fog Lights Relay Under Current Or Open Circuit	Current below normal or open circuit		1603-F	Fog_Light_Cmd
33	2388	Fog Light 1 command	6	Fog Lights Relay Overcurrent	Current above normal or grounded circuit		1603-F	Fog_Light_Cmd
33	2389	Rear Fog Light Command	2	Rear Fog Light Switch error	Faulty Switch Actuator or Microswitch for Rear Fog Lights Switch	Not available	Not available	Rear_Fog_Light_Switch_On
33	2390	Rear Fog Lights	5	Rear Fog Light Relay Under Current Or Open Circuit	Under Current Or Open Circuit in Rear Fog Light Relay Driver	Not available	Not available	Rear_Fog_Light_Cmd
33	2390	Rear Fog Lights	6	Rear Fog Lights Relay Overcurrent	Short circuit in Rear Fog Light Relay Driver	Not available	Not available	Rear_Fog_Light_Cmd
33	2392	Back Up Light and Alarm Horn	5	Reverse Lights Relay Under Current Or Open Circuit	Current below normal or open circuit		1601-E4	Ext_Lamp_Test_Reverse_Lamp
33	2392	Back Up Light and Alarm Horn	6	Reverse Lights Relay Overcurrent	Current above normal or grounded circuit		1601-E4	Ext_Lamp_Test_Reverse_Lamp
33	2404	Running Light	5	Running Light Control relay Under Current Or Open Circuit	Open Circuit in Running Lights Circuit		1601-F16	Skirt_Light_Req
33	2404	Running Light	6	Running Light Control relay Over Current	Short To Ground in Running Lights Circuit		1601-F16	Skirt_Light_Req
33	2584	Hydraulic Brake Pressure Warning State Circuit 1	5	Current Below Normal or Open Circuited	Current Below Normal or Open Circuited			Pressure_Flow_Switch_Raw_Input
33	2584	Hydraulic Brake Pressure Warning State Circuit 1	4	Voltage Below Normal or Shorted to Low Source	Voltage Below Normal or Shorted to Low Source			Pressure_Flow_Switch_Raw_Input
33	2584	Hydraulic Brake Pressure Warning State Circuit 1	3	Voltage Above Normal or Shorted to High Source	Voltage Above Normal or Shorted to High Source			Pressure_Flow_Switch_Raw_Input

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	2609	Cab A/C Refrigerant Compressor Outlet Pressure	0	HVAC Pressure Sensor reading above normal range	HVAC Pressure Sensor Shorted High or faulty sensor system		1600-B12	BC_RCD_Pressure_Raw_Signal
33	2609	Cab A/C Refrigerant Compressor Outlet Pressure	1	HVAC Pressure Sensor reading below normal range	HVAC Pressure Short To Ground or Open Circuit or faulty sensor system		1600-B12	BC_RCD_Pressure_Raw_Signal
33	2609	Cab A/C Refrigerant Compressor Outlet Pressure	7	AC - Service Now. Fan Problem/Clogged Pipe	At the current operating ambient temperature the engine fan isn't working, one of the AC lines has become plugged or the system is over-charged. The compressor is shut off to prevent damage.			BC_RCD_Pressure_Raw_Signal
33	2609	Cab A/C Refrigerant Compressor Outlet Pressure	16	HVAC High Pressure Protection	HVAC Head Pressure exceeded 480 psi. Compressor shut off until next key cycle for system protection			
33	2636	Windshield Wiper Motor ON/OFF	5	Wiper On/Off Relay Under Current Or Open Circuit	Open Circuit in Wiper On/Off Circuit		1601-E7	Wiper_Low_Speed_Relay_Cmd
33	2636	Windshield Wiper Motor ON/OFF	6	Wiper On/Off Relay Over Current	Short To Ground in Wiper On/Off Circuit		1601-E7	Wiper_Low_Speed_Relay_Cmd
33	2637	Windshield Wiper Motor Speed	5	Wiper High/Low Relay Under Current Or Open Circuit	Open Circuit in Wiper High/Low Circuit		1601-E6	Wiper_High_Speed_Relay_Cmd
33	2637	Windshield Wiper Motor Speed	6	Wiper High/Low Relay Over Current	Short To Ground in Wiper High/Low Circuit		1601-E6	Wiper_High_Speed_Relay_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	2641	Horn	5	Electric Horn Undercurrent	Open in Electric Horn Circuit		1603-E	Elec_City_Horn_Cmd
33	2641	Horn	6	Electric Horn Overcurrent	Short To Ground or Overload in City Horn Circuit		1603-E	Elec_City_Horn_Cmd
33	2642	Mirror Heat 1	5	Left Mirror Heat Undercurrent	Open in Left Mirror Heat Circuit		1603-H	Left_Mirror_Heat_Cmd
33	2642	Mirror Heat 1	6	Left Mirror Heat Overcurrent	Short to Ground or Overload in Left Mirror Heat Circuit		1603-H	Left_Mirror_Heat_Cmd
33	2653	Headlamp Low Beam Left #1	5	Left Low Beam Under Current	Open in Left Low Beam Circuit		1604-B	Left_Lowbeam_Cmd
33	2653	Headlamp Low Beam Left #1	6	Left Low Beam Short To Ground	Short To Ground or Overload in Left Low Beam Circuit		1604-B	Left_Lowbeam_Cmd
33	2655	Headlamp Low Beam Right #1	5	Right Low Beam Open Circuit	Open in Right Low Beam Circuit		1604-H	Right_Lowbeam_Cmd
33	2655	Headlamp Low Beam Right #1	6	Right Low Beam Short To Ground	Short to Ground or Overload in Right Low Beam Circuit		1604-H	Right_Lowbeam_Cmd
33	2796	Transfer Case Selector Switch	2	Front Axle Switch Error	Data erratic, intermittent or incorrect			Xfer_Case_Fwd_Axle_Eng_Switch
33	2819	Park Interlock Error	5	Park Position Interlock Solenoid Output is Under Current Or Open Circuit.	Current below normal or open circuit		1601-E8	Park_Pos_Unlock_Solenoid_Cmd
33	2819	Park Interlock Error	6	Park Position Interlock Solenoid Output is overcurrent.	Current above normal or grounded circuit		1601-E8	Park_Pos_Unlock_Solenoid_Cmd
33	3313	Fifth Wheel Lock Couple Status Indicator	5	Fifth Wheel Jaw Unlock Solenoid 1 output is Under Current Or Open Circuit	Open Circuit or Defective Solenoid			Fifth_Wheel_Jaw_Unlock_Solenoid_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	3313	Fifth Wheel Lock Couple Status Indicator	6	Fifth Wheel Jaw Unlock Solenoid 1 output is Overcurrent	Short To Ground or Defective Solenoid			Fifth_Wheel_Jaw_Unlock_Solenoid_Cmd
33	3314	Fifth Wheel Release Control	2	Fifth Wheel Jaw Unlock Switch state is invalid	Data erratic, intermittent or incorrect			Fifth_Wheel_Jaw_Unlock_Switch
33	3316	Fifth Wheel Slider Lock Indicator	5	Fifth Wheel Slide Under Current Or Open Circuit	Open Circuit in Fifth Wheel Slide Circuit			Fifth_Wheel_Slide_Cmd
33	3316	Fifth Wheel Slider Lock Indicator	6	Fifth Wheel Slide Over Current	Short To Ground in Fifth Wheel Slide Circuit			Fifth_Wheel_Slide_Cmd
33	3412	Lock Status of Door 1	7	Driver Door Lock Motor Failure	Driver Door Pod Module Has Shorted, Opened, or Jammed Solenoid			
33	3415	Lock Status of Door 2	7	Passenger Door Lock Motor Failure	Passenger Door Pod Module Has Shorted, Opened, or Jammed Solenoid			
33	3418	Lock Status of Door 3	7	Rear Driver Door Lock Motor failure	Rear Driver Door Pod Module Has Shorted, Opened, or Jammed Solenoid			
33	3421	Lock Status of Door 4	7	Rear Passenger Door Lock Motor failure	Rear Passenger Door Pod Module Has Shorted, Opened, or Jammed Solenoid			
33	3452	Enable Switch - Transmission input shaft PTO 1	2	Transmission PTO A Switch Error	Faulty Switch Actuator or Microswitch for Transmission PTO A Switch			PTOa_On_Switch

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	3452	Enable Switch - Transmission input shaft PTO 1	2	PTO Engagement Switch Error	Faulty Switch Actuator or Microswitch for Transmission PTO A Switch			TEM_PTO_Engagement_Switch_On
33	3453	Enable Switch - Transmission input shaft PTO 2	2	Transmission PTO B Switch Error	Faulty Switch Actuator or Microswitch for Transmission PTO B Switch			PTOb_On_Switch
33	3455	Enable Switch - Transfer case output shaft PTO	2	Transfer Case Switch Error	Data erratic, intermittent or incorrect			Transfer_Case_Blower_Switch
33	3455	Enable Switch - Transfer case output shaft PTO	2	Transfer Case PTO Switch Error	Data erratic, intermittent or incorrect			Xfer_Case_PTO_Eng_Switch
33	3456	Engagement Consent - Transmission input shaft PTO 1	5	Transmission PTO A Solenoid Relay Under Current Or Open Circuit	Open Circuit in Transmission PTO A Solenoid Circuit			PTO1_Air_Solenoid_Cmd,PTOa_Air_Solenoid_Cmd
33	3456	Engagement Consent - Transmission input shaft PTO 1	6	Transmission PTO A Solenoid Relay Over Current	Short To Ground in Transmission PTO A Solenoid Circuit			PTO1_Air_Solenoid_Cmd,PTOa_Air_Solenoid_Cmd
33	3457	Engagement Consent - Transmission input shaft PTO 2	5	Transmission PTO B Solenoid Relay Under Current Or Open Circuit	Open Circuit in Transmission PTO B Solenoid Circuit			PTOb_Air_Solenoid_Cmd
33	3457	Engagement Consent - Transmission input shaft PTO 2	6	Transmission PTO B Solenoid Relay Over Current	Short To Ground in Transmission PTO B Solenoid Circuit			PTOb_Air_Solenoid_Cmd
33	3461	Engagement Status - Transmission input shaft PTO 2	5	PTO Air Solenoid Under Current Or Open Circuit	Current below normal or open circuit			TEM_PTO_Air_Solenoid_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	3461	Engagement Status - Transmission input shaft PTO 2	6	PTO Air Solenoid Overcurrent	Current above normal or grounded circuit			TEM_PTO_Air_Solenoid_Cmd
33	3695	Diesel Particulate Filter Regeneration Inhibit Switch	2	Regen Inhibit Switch Error	Faulty Switch Actuator or Microswitch for Regen Inhibit Switch			
33	3696	Diesel Particulate Filter Regeneration Switch	5	Open Circuit in Regen Switch Indicator Circuit	Open Circuit in the Regen Switch Indicator Circuit.			Regen_Switch_Ind_Cmd
33	3696	Diesel Particulate Filter Regeneration Switch	6	Over current for Parked Regen Switch Indicator	Over current or Short to Battery for the Parked Regen Switch Indicator.			Regen_Switch_Ind_Cmd
33	3696	Diesel Particulate Filter Regeneration Switch	2	Parked Regen Switch Error	Faulty Switch Actuator or Microswitch for Parked Regen Switch			Regen_Switch_On
33	3697	Diesel Particulate Filter Lamp	5	Particulate Trap Lamp Relay Under Current Or Open Circuit	Open Circuit in Particulate Trap Lamp Circuit			Particulate_Trap_Ind_Cmd
33	3697	Diesel Particulate Filter Lamp	6	Particulate Trap Lamp Relay Over Current	Short to Ground in Particulate Trap Lamp Circuit			Particulate_Trap_Ind_Cmd
33	3698	Exhaust System High Temperature Lamp Command	5	Exhaust System High Temperature Lamp Command Under Current Or Open Circuit	Open Circuit in Exhaust System High Temperature Circuit			Exhaust_High_Temp_Ind_Cmd
33	3698	Exhaust System High Temperature Lamp Command	6	Exhaust System High Temperature Lamp Command Over Current	Short to Ground in Exhaust System High Temperature Circuit			Exhaust_High_Temp_Ind_Cmd
33	3950	Air Horn	5	Air Horn Undercurrent	Open in Air Horn Circuit		1602-E12	Air_Horn_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	3950	Air Horn	6	Air Horn Overcurrent	Short To Ground or Overload in Air Horn Circuit		1602-E12	Air_Horn_Cmd
33	3952	Air Shield Light	6	Air Shield Lighting Overcurrent	Short To Ground or Overload in Air Shield Light Circuit		1604-F	Air_Shield_Lights_Cmd
33	3957	Auxiliary Transmission Constant Supply Actuator	5	Auxiliary Transmission Solenoid B (Constant Supply) output is Under Current Or Open Circuit.	Current below normal or open circuit			Aux_Xmsn_Solenoid_B_Cmd
33	3957	Auxiliary Transmission Constant Supply Actuator	6	Auxiliary Transmission Solenoid B (Constant Supply) output is overcurrent.	Current above normal or grounded circuit			Aux_Xmsn_Solenoid_B_Cmd
33	3958	Auxiliary Transmission High Range Actuator	5	Auxiliary Transmission Solenoid C (High) Output is Under Current Or Open Circuit.	Current below normal or open circuit			Aux_Xmsn_Solenoid_C_Cmd
33	3958	Auxiliary Transmission High Range Actuator	6	Auxiliary Transmission Solenoid C (High) output is overcurrent.	Current above normal or grounded circuit			Aux_Xmsn_Solenoid_C_Cmd
33	3959	Auxiliary Transmission Neutral Actuator	5	Auxiliary Transmission Solenoid A (Neutral) output is Under Current Or Open Circuit.	Current below normal or open circuit			Aux_Xmsn_Solenoid_A_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	3959	Auxiliary Transmission Neutral Actuator	6	Auxiliary Transmission Solenoid A (Neutral) output is overcurrent.	Current above normal or grounded circuit			Aux_Xmsn_Solenoid_A_Cmd
33	3960	Auxiliary Transmission Range Switch	2	Auxiliary Transmission High/Low Switch state is invalid.	Data erratic, intermittent or incorrect			Aux_Xmsn_Hi_Switch
33	3961	Body Equipment Hydraulic Power Auxiliary Pump Inhibit Command	5	TEM Epump Inhibit Relay Under Current Or Open Circuit	Current below normal or open circuit		1601-E1	TEM_EPump_Inhibit_Relay
33	3961	Body Equipment Hydraulic Power Auxiliary Pump Inhibit Command	6	TEM Epump Inhibit Relay Over Current	Current above normal or grounded circuit		1601-E1	TEM_EPump_Inhibit_Relay
33	3962	Bus Amber Signal Light 1	5	Left Front Amber PWL Undercurrent	Current below normal or open circuit		1603-C	BUS_LF_Amber_PWL_Cmd
33	3962	Bus Amber Signal Light 1	6	Left Front Amber PWL Overcurrent	Current above normal or grounded circuit		1603-C	BUS_LF_Amber_PWL_Cmd
33	3963	Bus Amber Signal Light 2	5	Right Front Amber PWL Undercurrent	Current below normal or open circuit		1604-J	BUS_RF_Amber_PWL_Cmd
33	3963	Bus Amber Signal Light 2	6	Right Front Amber PWL Overcurrent	Current above normal or grounded circuit		1604-J	BUS_RF_Amber_PWL_Cmd
33	3964	Bus Amber Signal Light 3	5	Left Rear Amber PWL Undercurrent	Current below normal or open circuit		1603-G	BUS_LR_Amber_PWL_Cmd
33	3964	Bus Amber Signal Light 3	6	Left Rear Amber PWL Overcurrent	Current above normal or grounded circuit		1603-G	BUS_LR_Amber_PWL_Cmd
33	3965	Bus Amber Signal Light 4	5	Right Rear Amber PWL Undercurrent	Current below normal or open circuit		1603-K	BUS_RR_Amber_PWL_Cmd
33	3965	Bus Amber Signal Light 4	6	Right Rear Amber PWL Overcurrent	Current above normal or grounded circuit		1603-K	BUS_RR_Amber_PWL_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	3966	Bus Crossing Gate	5	Crossing Gate output is undercurrent.	Current below normal or open circuit		1602-E12	BUS_Crossing_Gate_Cmd
33	3966	Bus Crossing Gate	6	Crossing Gate output is overcurrent.	Current above normal or grounded circuit		1602-E12	BUS_Crossing_Gate_Cmd
33	3967	Bus Passenger Door Close Relay	5	Bus Entrance Door Close Relay Driver Output is Under Current Or Open Circuit	Current below normal or open circuit		1601-E9	BUS_Door_Close_Cmd
33	3967	Bus Passenger Door Close Relay	6	Bus Entrance Door Close Relay Driver Output is overcurrent	Current above normal or grounded circuit		1601-E9	BUS_Door_Close_Cmd
33	3969	Bus Passenger Door Control Switch 2	0	Bus Entrance Door Steering Wheel Switch Input Above Normal Range	Bus Door Control Switches Circuit Open or Shorted High		1600-B16	BUS_PWL_And_Door_Switch_Raw_Signal
33	3969	Bus Passenger Door Control Switch 2	1	Bus Entrance Door Steering Wheel Switch Input Below Normal Range	Short To Ground in Bus Door Control Switches Circuit		1600-B16	BUS_PWL_And_Door_Switch_Raw_Signal
33	3970	Bus Passenger Door Open Relay	5	Bus Entrance Door Open Relay Driver Output is Under Current Or Open Circuit	Current below normal or open circuit		1601-E13	BUS_Door_Open_Cmd
33	3970	Bus Passenger Door Open Relay	6	Bus Entrance Door Open Relay Driver Output is overcurrent	Current above normal or grounded circuit		1601-E13	BUS_Door_Open_Cmd
33	3971	Bus Red Signal Light 1	5	Left Front Red PWL Undercurrent	Current below normal or open circuit		1603-H	BUS_LF_Red_PWL_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	3971	Bus Red Signal Light 1	6	Left Front Red PWL Overcurrent	Current above normal or grounded circuit		1603-H	BUS_LF_Red_PWL_Cmd
33	3972	Bus Red Signal Light 2	5	Right Front Red PWL Undercurrent	Current below normal or open circuit		1603-F	BUS_RF_Red_PWL_Cmd
33	3972	Bus Red Signal Light 2	6	Right Front Red PWL Overcurrent	Current above normal or grounded circuit		1603-F	BUS_RF_Red_PWL_Cmd
33	3973	Bus Red Signal Light 3	5	Left Rear Red PWL Undercurrent	Current below normal or open circuit		1603-J	BUS_LR_Red_PWL_Cmd
33	3973	Bus Red Signal Light 3	6	Left Rear Red PWL Overcurrent	Current above normal or grounded circuit		1603-J	BUS_LR_Red_PWL_Cmd
33	3974	Bus Red Signal Light 4	5	Right Rear Red PWL Undercurrent	Current below normal or open circuit		1603-L	BUS_RR_Red_PWL_Cmd
33	3974	Bus Red Signal Light 4	6	Right Rear Red PWL Overcurrent	Current above normal or grounded circuit		1603-L	BUS_RR_Red_PWL_Cmd
33	3975	Bus Stop Arm	5	Bus Stop Arm Output is Under Current Or Open Circuit	Current below normal or open circuit		1601-E2	BUS_Stop_Arm_Cmd
33	3975	Bus Stop Arm	6	Bus Stop Arm Output is over current	Current above normal or grounded circuit		1601-E2	BUS_Stop_Arm_Cmd
33	3976	Cab Dome Light 1	5	Cab Dome Light Open Circuit	Open in Cab Dome Light Circuit		1604-J	Dome_Light_Cmd
33	3976	Cab Dome Light 1	6	Cab Dome Light Short To Ground	Short To Ground or Overload in Cab Dome Light Circuit		1604-J	Dome_Light_Cmd
33	3977	Cab Dome Light 2	5	Sleeper Dome Light Relay Under Current Or Open Circuit	Open Circuit in Sleeper Dome Light Circuit		1601-F2	Sleeper_Cab_Dome_Light_Req
33	3977	Cab Dome Light 2	6	Sleeper Dome Light Over Current	Short To Ground in Sleeper Dome Light Circuit		1601-F2	Sleeper_Cab_Dome_Light_Req

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	3978	Cab Dome Light 2 Switch	2	Sleeper Dome / Floor Search Light Switch Error	Faulty Switch Actuator or Microswitch for Sleeper Dome / Floor Search Light Switch			Floor_Lights_Cab_Switch
33	3979	Cab Floor Light	5	Floor Lights Relay Under Current Or Open Circuit	Open Circuit in Floor Light Circuit		1601-E5	Floor_Search_Lights_Req
33	3979	Cab Floor Light	6	Floor Lights Relay Over Current	Short To Ground in Floor Light Circuit		1601-E5	Floor_Search_Lights_Req
33	3981	Cab HVAC Mode Control Actuator	2	HVAC Control Head Mode Fault DM1	HVAC Motor in Wrong Position or Jammed			
33	3982	Cab HVAC Rear Blower Speed Control Switch	2	HVAC Rear Blower Speed Control Switch Error	Faulty Switch Actuator or Microswitch for HVAC Rear Blower Speed Control Switch			Rear_HVAC_Blower_UP
33	3983	Cab HVAC Rear Temperature Control Switch	2	Rear HVAC Temperature Control Switch Error	Faulty Switch Actuator or Microswitch for Rear HVAC Temperature Control Switch			Rear_HVAC_Temp_UP
33	3984	Cab HVAC Recirculation Door Control Actuator	2	HVAC Control Head Air Inlet DM1	HVAC Motor in Wrong Position or Jammed			
33	3985	Cab HVAC System Controller	9	HVAC Control Head Circuit Failed To Communicate With the Body Controller	Abnormal update rate			RCD_HVAC_Ctrl_Head_Diag_Signal
33	3987	Compression Brake Enable Switch Indicator Lamp	5	Compression Brake Indicator output is Under Current Or Open Circuit	Current below normal or open circuit		1601-E4	Comp_Brake_LED_Ind_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	3987	Compression Brake Enable Switch Indicator Lamp	6	Compression Brake Indicator is over current	Current above normal or grounded circuit		1601-E4	Comp_Brake_LED_Ind_Cmd
33	3988	Door 1 Control Module	7	Driver Door Pod Module Failure	Defective Driver Door Pod Module			Door_Pod_Master_MF_Signal
33	3989	Door 1 Window Motor	7	Driver Window Motor Failure	Driver Door Pod Module Window Motor Has Short or Open or Window is Jammed			Door_Pod_Master_WMF_Signal
33	3990	Door 2 Control Module	7	Passenger Door Pod Module Failure	Defective Passenger Door Pod Module			Door_Pod_Front_MF_Signal
33	3991	Door 2 Window Motor	7	Passenger Window Motor Failure	Passenger Door Pod Module Window Motor Has Short or Open or Window is Jammed			Door_Pod_Front_WMF_Signal
33	3992	Door 3 Control module	7	Rear Driver Door Pod Module Failure	Defective Rear Driver Door Pod Module			Door_Pod_Rear_1_MF_Signal
33	3993	Door 3 Window Motor	7	Rear Driver Window Motor Failure	Rear Driver Door Pod Module Window Motor Has Short or Open or Window is Jammed			Door_Pod_Rear_1_WMF_Signal
33	3994	Door 4 Control Module	7	Rear Passenger Door Pod Module Failure	Defective Rear Passenger Door Pod Module			Door_Pod_Rear_2_MF_Signal
33	3995	Door 4 Window Motor	7	Rear Passenger Window Motor Failure	Rear Passenger Door Pod Module Window Motor Has Short or Open or Window is Jammed			Door_Pod_Rear_2_WMF_Signal
33	3997	Electrical Accessory Power Relay	5	Electrical Accessory Request Relay Under Current Or Open Circuit	Open Circuit in Electrical Accessory Request Circuit		1601-E11	Electrical_Accessory_Request

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	3997	Electrical Accessory Power Relay	6	Electrical Accessory Request Relay Over Current	Short To Ground in Electrical Accessory Request Circuit		1601-E11	Electrical_Accessory_Request
33	3998	Electrical Load Shed OFF	5	Load Shed OFF Relay Under Current Or Open Circuit	Open Circuit in Load Shed OFF Circuit		1601-F7	Load_Shed_Power_Off_RD_Cmd
33	3998	Electrical Load Shed OFF	6	Load Shed OFF Relay Over Current	Short To Ground in Load Shed OFF Circuit		1601-F7	Load_Shed_Power_Off_RD_Cmd
33	3999	Electrical Load Shed ON	5	Load Shed ON Relay Under Current Or Open Circuit	Open Circuit in Load Shed ON Circuit		1601-F6	Load_Shed_Power_On_RD_Cmd
33	3999	Electrical Load Shed ON	6	Load Shed ON Relay Over Current	Short To Ground in Load Shed ON Circuit		1601-F6	Load_Shed_Power_On_RD_Cmd
33	4000	Engine Exhaust Brake Enable Switch	2	Retarder Enable - Brake Assist On/Off switch failure	Data erratic, intermittent or incorrect			Exhaust_Brake_Switch
33	4002	Engine Remote Start	6	TEM Engine Crank Relay Over Current	Current above normal or grounded circuit			TEM_Engine_Crank_Cmd
33	4003	Engine Remote Stop	5	TEM Engine Stop Relay Under Current Or Open Circuit	Current below normal or open circuit		1601-E2	TEM_Engine_Stop_Relay_Cmd
33	4003	Engine Remote Stop	6	TEM Engine Stop Relay Over Current	Current above normal or grounded circuit		1601-E2	TEM_Engine_Stop_Relay_Cmd
33	4004	Exterior Lamp Check Switch	2	Exterior Lamp Check Switch Error	Data erratic, intermittent or incorrect			BUS_ELC_On_Switch

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	4007	Fifth Wheel Slide Lock Switch	2	Fifth Wheel Slide Switch Error	Faulty Switch Actuator or Microswitch for Fifth Wheel Slide Switch			Fifth_Wheel_Slide_Switch
33	4008	Fog Light 2	5	Right Fog Light Undercurrent	Open in Right Fog Light Circuit		1603-K	Right_Gen2_Fog_Light_Cmd
33	4008	Fog Light 2	6	Right Fog Light Overcurrent	Short To Ground or Overload in Right Fog Light Output Circuit		1603-K	Right_Gen2_Fog_Light_Cmd
33	4009	Fuel Filter Fuel Heater Relay	5	Fuel Heater Relay Under Current Or Open Circuit	Open Circuit in Fuel Heater Circuit		1601-F12	Fuel_Heater_Req
33	4009	Fuel Filter Fuel Heater Relay	6	Fuel Heater Relay Over Current	Short To Ground in Fuel Heater Circuit		1601-F12	Fuel_Heater_Req
33	4010	Fuel Tank Transfer Pump	5	Fuel Transfer Pump Relay Under Current Or Open Circuit	Open Circuit in Fuel Transfer Pump Circuit		1601-F11	Fuel_Transfer_Pump_Relay_Cmd
33	4010	Fuel Tank Transfer Pump	6	Fuel Transfer Pump Relay Short To Ground	Short To Ground in Fuel Transfer Pump Circuit		1601-F11	Fuel_Transfer_Pump_Relay_Cmd
33	4011	Headlamp 1 High Beam	5	Left High Beam Open Circuit	Open in Left High Beam Circuit		1604-C	Left_Highbeam_Cmd
33	4011	Headlamp 1 High Beam	6	Left High Beam Short To Ground	Short To Ground or Overload in Left High Beam Circuit		1604-C	Left_Highbeam_Cmd
33	4012	Headlamp 2 High Beam	5	Right High Beam Open Circuit	Open in Right High Beam Circuit		1604-K	Right_Highbeam_Cmd
33	4012	Headlamp 2 High Beam	6	Right High Beam Short To Ground	Short To Ground or Overload in Right High Beam Circuit		1604-K	Right_Highbeam_Cmd
33	4014	High Current Auxiliary Load Switch 1	2	High Current Load Switch Error	Data erratic, intermittent or incorrect			High_Current_Load_Switch
33	4016	High Current Auxiliary Power Relay 1	5	High Current Load Under Current Or Open Circuit	Current below normal or open circuit		1601-E16	High_Current_Load_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	4016	High Current Auxiliary Power Relay 1	6	High Current Load Overcurrent	Current above normal or grounded circuit		1601-E16	High_Current_Load_Cmd
33	4022	Lift Gate Power Control Enable	5	Lift Gate Enable Undercurrent	Current below normal or open circuit		1603-J	Lift_Gate_Enable_Cmd
33	4022	Lift Gate Power Control Enable	6	Lift Gate Enable Overcurrent	Current above normal or grounded circuit		1603-J	Lift_Gate_Enable_Cmd
33	4023	Lift Gate Power Control Switch	2	Lift Gate Switch Error	Data erratic, intermittent or incorrect			Lift_Gate_Enable_Switch
33	4024	Marker Light Interrupt Switch	2	Marker Light Interrupt Switch Failure	Data erratic, intermittent or incorrect			Marker_Interrupt_Switch
33	4026	Mirror Heat 2	5	Right Mirror Heat Undercurrent	Open in Right Mirror Heat Circuit		1603-L	Right_Mirror_Heat_Cmd
33	4026	Mirror Heat 2	6	Right Mirror Heat Overcurrent	Short To Ground or Overload in Right Mirror Heat Circuit		1603-L	Right_Mirror_Heat_Cmd
33	4028	Service Brake Circuit 1 Air Tank Drain Valve	5	Service Brake Circuit 1 Air Tank Drain Valve Solenoid Under Current Or Open Circuit	Current below normal or open circuit			Hmphry_Vlve_Prim_Tk_Sol_Cmd
33	4028	Service Brake Circuit 1 Air Tank Drain Valve	6	Service Brake Circuit 1 Air Tank Drain Valve Solenoid Short To Ground	Current above normal or grounded circuit			Hmphry_Vlve_Prim_Tk_Sol_Cmd
33	4029	Service Brake Circuit 1 Air Tank Drain Valve Switch	2	Service Brake Circuit 1 Air Tank Drain Switch Error	Data erratic, intermittent or incorrect			Hmphry_Vlve_Prim_Tk_Open

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	4030	Service Brake Circuit 2 Air Tank Drain Valve	5	Service Brake Circuit 2 Air Tank Drain Valve Solenoid Under Current Or Open Circuit	Current below normal or open circuit			Hmphry_Vlve_Sec_Tk_Sol_Cmd
33	4030	Service Brake Circuit 2 Air Tank Drain Valve	6	Service Brake Circuit 2 Air Tank Drain Valve Solenoid Short To Ground	Current above normal or grounded circuit			Hmphry_Vlve_Sec_Tk_Sol_Cmd
33	4031	Service Brake Supply Air Tank Drain Valve	5	Service Brake Supply Air Tank Drain Valve Solenoid Under Current Or Open Circuit	Current below normal or open circuit			Hmphry_Vlve_Wet_Tk_Sol_Cmd
33	4031	Service Brake Supply Air Tank Drain Valve	6	Service Brake Supply Air Tank Drain Valve Solenoid Short To Ground	Current above normal or grounded circuit			Hmphry_Vlve_Wet_Tk_Sol_Cmd
33	4032	Service Brake Supply Air Tank Drain Valve Switch	2	Service Brake Supply Air Tank Drain Valve Switch Error	Data erratic, intermittent or incorrect			Hmphry_Vlve_Wet_Tk_Open
33	4033	Sleeper Remote - Start/Stop Enable Command	5	Sleeper Control Enable Relay Under Current or Open Circuit	Current below normal or open circuit			
33	4033	Sleeper Remote - Start/Stop Enable Command	6	Sleeper Control Enable Relay Over Current	Short To Ground in Sleeper Control Enable Circuit			
33	4038	Snow Plow Forward Lighting Relay 2	5	Right Plow Light Relay Under Current Or Open Circuit	Current below normal or open circuit		1601-F16	Right_Plow_Lights_Relay_Req

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	4038	Snow Plow Forward Lighting Relay 2	6	Right Plow Light Relay Circuit Short To Ground	Current above normal or grounded circuit		1601-F16	Right_Plow_Lights_Relay_Req
33	4039	Snow Plow Forward Lighting Relay 1	5	Left Plow Light Relay Circuit Under Current Or Open Circuit	Current below normal or open circuit		1601-F12	Left_Plow_Lights_Relay_Req
33	4039	Snow Plow Forward Lighting Relay 1	6	Left Plow Light Relay Circuit Short To Ground	Current above normal or grounded circuit		1601-F12	Left_Plow_Lights_Relay_Req
33	4040	Snow Plow Lighting Mode Switch	2	Snow Plow Switch Error	Data erratic, intermittent or incorrect			Plow_Lights_Switch
33	4041	Software Loop Time Exceeded	14	Software Loop Time Exceeded in the Body Controller, Internal Fault	Software Configuration Too Big			LoopTime_OK
33	4042	Trailer Auxiliary Power Switch	2	Trailer Auxiliary Power Switch Error	Faulty Switch Actuator or Microswitch for Auxiliary Trailer Switch			EGC_Digital_Input_1
33	4043	Transfer Case Front Driveline Actuator	5	Transfer Case Front Driveline Solenoid Under Current Or Open Circuit	Current below normal or open circuit			Xfer_Case_Sol_D_Cmd
33	4043	Transfer Case Front Driveline Actuator	6	Transfer Case Front Driveline Solenoid Short To Ground	Current above normal or grounded circuit			Xfer_Case_Sol_D_Cmd
33	4044	Transfer Case High Range Actuator	5	Transfer Case High Range Solenoid Under Current Or Open Circuit	Current below normal or open circuit			Xfer_Case_Sol_C_Cmd, MATV_Xfer_Case_High_Sol_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	4044	Transfer Case High Range Actuator	6	Transfer Case High Range Solenoid Short To Ground	Current above normal or grounded circuit			Xfer_Case_Sol_C_Cmd, MATV_Xfer_Case_High_Sol_Cmd
33	4045	Transfer Case Low Range Actuator	5	Transfer Case Low Range Solenoid Under Current Or Open Circuit	Current below normal or open circuit			Xfer_Case_Sol_A_Cmd, MATV_Xfer_Case_Low_Sol_Cmd
33	4045	Transfer Case Low Range Actuator	6	Transfer Case Low Range Solenoid Short To Ground	Current above normal or grounded circuit			Xfer_Case_Sol_A_Cmd, MATV_Xfer_Case_Low_Sol_Cmd
33	4046	Transfer Case Neutral Actuator	5	Transfer Case Neutral Solenoid Under Current Or Open Circuit	Current below normal or open circuit			Xfer_Case_Sol_B_Cmd, MATV_Xfer_Case_Neutral_Sol_Cmd
33	4046	Transfer Case Neutral Actuator	6	Transfer Case Neutral Solenoid Short To Ground	Current above normal or grounded circuit			Xfer_Case_Sol_B_Cmd, MATV_Xfer_Case_Neutral_Sol_Cmd
33	4047	Transfer Case Output Shaft PTO Actuator	5	Transfer Case Output Shaft PTO Actuator Under Current Or Open Circuit	Current below normal or open circuit			SSpd_Xfer_Case_NC_Sol_Cmd
33	4047	Transfer Case Output Shaft PTO Actuator	6	Transfer Case Output Shaft PTO Actuator Over Current	Current above normal or grounded circuit			SSpd_Xfer_Case_NC_Sol_Cmd
33	4048	Transfer Case Range Switch	2	Transfer Case Range Switch Error	Data erratic, intermittent or incorrect			Xfer_Case_High_Switch
33	4049	Transfer Case Rear Driveline Actuator	5	Transfer Case Rear Driveline Relay Under Current Or Open Circuit	Current below normal or open circuit			SSpd_Xfer_Case_NO_Sol_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	4049	Transfer Case Rear Driveline Actuator	6	Transfer Case Rear Driveline Relay Over Current	Current above normal or grounded circuit			SSpd_Xfer_Case_NO_Sol_Cmd
33	4053	Transmission Input Shaft PTO 2 Actuator	5	Transmission Input Shaft PTO Engagement Actuator Circuit Under Current Or Open Circuit	Current below normal or open circuit	Not available	Not available	TEM_PTO_Engagement_Relay_Cmd, TEM_PTO_Relay_Driver_Cmd
33	4053	Transmission Input Shaft PTO 2 Actuator	6	Transmission Input Shaft PTO Engagement Actuator Circuit Overcurrent	Current above normal or grounded circuit	Not available	Not available	TEM_PTO_Engagement_Relay_Cmd, TEM_PTO_Relay_Driver_Cmd
33	4055	Transmission Retarder Enable Switch	2	Transmission Retarder On/Off switch Failure	Data erratic, intermittent or incorrect			Retarder_Switch
33	4056	Two Speed Axle Actuator	5	Two Speed Axle Solenoid Relay Under Current Or Open Circuit	Current below normal or open circuit			Two_Spd_Axle_Solenoid_Cmd
33	4056	Two Speed Axle Actuator	6	Two Speed Axle Solenoid Relay Short To Ground	Current above normal or grounded circuit			Two_Spd_Axle_Solenoid_Cmd
33	4057	Wiper Motor	5	Wiper Motor Undercurrent	Open in Wiper Motor Circuit		1604-A	Wipers_Cmd
33	4057	Wiper Motor	6	Wiper Motor Overcurrent	Short To Ground or Overload in Wiper Motor Circuit		1604-A	Wipers_Cmd
33	4058	Cab Dome Light 1 Switch	2	Cab Dome Light Switch is reporting an error.	Faulty Switch Actuator or Microswitch for Cab Dome Light Switch			Dome_Light_ON_Switch
33	520461	Switch 6-Pack #1 Data Link	9	Switch 6-Pack #1 Data Link Comm. Failure	Faulty Switch Pack #1 or Switch Data Link			SwitchPack_1_IN_Timer

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520462	Switch 6-Pack #2 Data Link	9	Switch 6-Pack #2 Data Link Comm. Failure	Faulty Switch Pack #2 or Switch Data Link			SwitchPack_2_IN_Timer
33	520463	Switch 6-Pack #3 Data Link	9	Switch 6-Pack #3 Data Link Comm. Failure	Faulty Switch Pack #3 or Switch Data Link			SwitchPack_5_IN_Timer
33	520464	Electrical Accessory Request	5	Electrical Accessory Request Relay Under Current Or Open Circuit	Open Circuit in Electrical Accessory Request Circuit			Electrical_Accessory_Request
33	520464	Electrical Accessory Request	6	Electrical Accessory Request Relay Over Current	Short To Ground in Electrical Accessory Request Circuit			Electrical_Accessory_Request
33	520465	HVAC Control Head Multiple Motor Faults	2	HVAC control Head Multiple Motor Faults DM1	HVAC Motor in Wrong Position or Jammed			RCD_HVAC_Ctrl_Head_Diag_Signal
33	520467	Comm. Loss from BC to Power Pack	9	Comm. fault from BC to PP3.	Private J1939 datalink problem (exceeded bandwidth).	The Power Pack E Module has stopped receiving heart beat message from the BC.		
33	520468	RPM 1 Channel 1 Cab Switch	2	RPM 1 Channel 1 Switch Error	Data erratic, intermittent or incorrect			PwrMod1_Swch1_ON_Switch
33	520469	RPM 1 Channel 1 Overcurrent	6	RPM 1 Channel 1 Overcurrent	Current above normal or grounded circuit			PwrMod1_Output1_Current_Signal
33	520469	RPM 1 Channel 1 Overcurrent	14	RPM 1 Channel 1 Analog Input Data Unavailable	RPM 1 Channel 1 Analog Input Data (PGN 65313 , Byte 3) indicates a value of FFh			PwrMod1_Output1_Current_Signal

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520469	RPM 1 Channel 1 Overcurrent	19	RPM 1 Channel 1 Analog Input Invalid Data	RPM 1 Channel 1 Analog Input Data (PGN 65313 , Byte 3) indicates a value in the range of FCh to FEh			PwrMod1_Output1_Current_Signal
33	520470	RPM 1 Channel 2 Cab Switch	2	RPM 1 Channel 2 Switch Error	Data erratic, intermittent or incorrect			PwrMod1_Swch2_ON_Switch
33	520471	RPM 1 Channel 2 Overcurrent	6	RPM 1 Channel 2 Overcurrent	Current above normal or grounded circuit			N/A - Handled by translator. PwrMod1_Output2_Current_Signal
33	520471	RPM 1 Channel 2 Overcurrent	14	RPM 1 Channel 2 Analog Input Data Unavailable	RPM 1 Channel 2 Analog Input Data (PGN 65313 , Byte 4) indicates a value of FFh			N/A - Handled by translator. PwrMod1_Output2_Current_Signal
33	520471	RPM 1 Channel 2 Overcurrent	19	RPM 1 Channel 2 Analog Input Invalid Data	RPM 1 Channel 2 Analog Input Data (PGN 65313 , Byte 4) indicates a value in the range of FCh to FEh			N/A - Handled by translator. PwrMod1_Output2_Current_Signal
33	520472	RPM 1 Channel 3 Cab Switch	2	RPM 1 Channel 3 Switch Error	Data erratic, intermittent or incorrect			PwrMod1_Swch3_ON_Switch
33	520473	RPM 1 Channel 3 Overcurrent	6	RPM 1 Channel 3 Overcurrent	Current above normal or grounded circuit			PwrMod1_Output3_Current_Signal
33	520473	RPM 1 Channel 3 Overcurrent	14	RPM 1 Channel 3 Analog Input Data Unavailable	RPM 1 Channel 3 Analog Input Data (PGN 65313 , Byte 5) indicates a value of FFh			PwrMod1_Output3_Current_Signal

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520473	RPM 1 Channel 3 Overcurrent	19	RPM 1 Channel 3 Analog Input Invalid Data	RPM 1 Channel 3 Analog Input Data (PGN 65313 , Byte 5) indicates a value in the range of FCh to FEh			PwrMod1_Output3_Current_Signal
33	520474	RPM 1 Channel 4 Cab Switch	2	RPM 1 Channel 4 Switch Error	Data erratic, intermittent or incorrect			PwrMod1_Swch4_ON_Switch
33	520475	RPM 1 Channel 4 Overcurrent	6	RPM 1 Channel 4 Overcurrent	Current above normal or grounded circuit			PwrMod1_Output4_Current_Signal
33	520475	RPM 1 Channel 4 Overcurrent	14	RPM 1 Channel 4 Analog Input Data Unavailable	RPM 1 Channel 4 Analog Input Data (PGN 65313 , Byte 6) indicates a value of FFh			PwrMod1_Output4_Current_Signal
33	520475	RPM 1 Channel 4 Overcurrent	19	RPM 1 Channel 4 Analog Input Invalid Data	RPM 1 Channel 4 Analog Input Data (PGN 65313 , Byte 6) indicates a value in the range of FCh to FEh			PwrMod1_Output4_Current_Signal
33	520476	RPM 1 Channel 5 Cab Switch	2	RPM 1 Channel 5 Switch Error	Data erratic, intermittent or incorrect			PwrMod1_Swch5_ON_Switch
33	520477	RPM 1 Channel 5 Overcurrent	6	RPM 1 Channel 5 Overcurrent	Current above normal or grounded circuit			PwrMod1_Output5_Current_Signal
33	520477	RPM 1 Channel 5 Overcurrent	14	RPM 1 Channel 5 Analog Input Data Unavailable	RPM 1 Channel 5 Analog Input Data (PGN 65313 , Byte 7) indicates a value of FFh			PwrMod1_Output5_Current_Signal
33	520477	RPM 1 Channel 5 Overcurrent	19	RPM 1 Channel 5 Analog Input Invalid Data	RPM 1 Channel 5 Analog Input Data (PGN 65313 , Byte 7) indicates a value in the range of FCh to FEh			PwrMod1_Output5_Current_Signal

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520478	RPM 1 Channel 6 Cab Switch	2	RPM 1 Channel 6 Switch Error	Data erratic, intermittent or incorrect			PwrMod1_Swch6_ON_ Switch
33	520479	RPM 1 Channel 6 Overcurrent	6	RPM 1 Channel 6 Overcurrent	Current above normal or grounded circuit			N/A - Handled by translator. PwrMod1_Output6_Cur rent_Signal
33	520479	RPM 1 Channel 6 Overcurrent	14	RPM 1 Channel 6 Analog Input Data Unavailable	RPM 1 Channel 6 Analog Input Data (PGN 65313 , Byte 8) indicates a value of FFh			N/A - Handled by translator. PwrMod1_Output6_Cur rent_Signal
33	520479	RPM 1 Channel 6 Overcurrent	19	RPM 1 Channel 6 Analog Input Invalid Data	RPM 1 Channel 6 Analog Input Data (PGN 65313 , Byte 8) indicates a value in the range of FCh to FEh			N/A - Handled by translator. PwrMod1_Output6_Cur rent_Signal
33	520480	RPM 2 Channel 1 Cab Switch	2	RPM 2 Channel 1 Switch Error	Data erratic, intermittent or incorrect			PwrMod2_Swch1_ON_ Switch
33	520481	RPM 2 Channel 1 Overcurrent	6	RPM 2 Channel 1 Overcurrent	Current above normal or grounded circuit			PwrMod2_Output1_Cur rent_Signal
33	520481	RPM 2 Channel 1 Overcurrent	14	RPM 2 Channel 1 Analog Input Data Unavailable	RPM 2 Channel 1 Analog Input Data (PGN 65313 , Byte 3) indicates a value of FFh			PwrMod2_Output1_Cur rent_Signal
33	520481	RPM 2 Channel 1 Overcurrent	19	RPM 2 Channel 1 Analog Input Invalid Data	RPM 2 Channel 1 Analog Input Data (PGN 65313 , Byte 3) indicates a value in the range of FCh to FEh			PwrMod2_Output1_Cur rent_Signal
33	520482	RPM 2 Channel 2 Cab Switch	2	RPM 2 Channel 2 Switch Error	Data erratic, intermittent or incorrect			PwrMod2_Swch2_ON_ Switch

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520483	RPM 2 Channel 2 Overcurrent	6	RPM 2 Channel 2 Overcurrent	Current above normal or grounded circuit			N/A - Handled by translator. PwrMod2_Output2_Current_Signal
33	520483	RPM 2 Channel 2 Overcurrent	14	RPM 2 Channel 2 Analog Input Data Unavailable	RPM 2 Channel 2 Analog Input Data (PGN 65313 , Byte 4) indicates a value of FFh			N/A - Handled by translator. PwrMod2_Output2_Current_Signal
33	520483	RPM 2 Channel 2 Overcurrent	19	RPM 2 Channel 2 Analog Input Invalid Data	RPM 2 Channel 2 Analog Input Data (PGN 65313 , Byte 4) indicates a value in the range of FCh to FEh			N/A - Handled by translator. PwrMod2_Output2_Current_Signal
33	520484	RPM 2 Channel 3 Cab Switch	2	RPM 2 Channel 3 Switch Error	Data erratic, intermittent or incorrect			PwrMod2_Swch3_ON_Switch
33	520485	RPM 2 Channel 3 Overcurrent	6	RPM 2 Channel 3 Overcurrent	Current above normal or grounded circuit			N/A - Handled by translator. PwrMod2_Output3_Current_Signal
33	520485	RPM 2 Channel 3 Overcurrent	14	RPM 2 Channel 3 Analog Input Data Unavailable	RPM 2 Channel 3 Analog Input Data (PGN 65313 , Byte 5) indicates a value of FFh			N/A - Handled by translator. PwrMod2_Output3_Current_Signal
33	520485	RPM 2 Channel 3 Overcurrent	19	RPM 2 Channel 3 Analog Input Invalid Data	RPM 2 Channel 3 Analog Input Data (PGN 65313 , Byte 5) indicates a value in the range of FCh to FEh			N/A - Handled by translator. PwrMod2_Output3_Current_Signal
33	520486	RPM 2 Channel 4 Cab Switch	2	RPM 2 Channel 4 Switch Error	Data erratic, intermittent or incorrect			PwrMod2_Swch4_ON_Switch

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520487	RPM 2 Channel 4 Overcurrent	6	RPM 2 Channel 4 Overcurrent	Current above normal or grounded circuit			N/A - Handled by translator. PwrMod2_Output4_Current_Signal
33	520487	RPM 2 Channel 4 Overcurrent	14	RPM 2 Channel 4 Analog Input Data Unavailable	RPM 2 Channel 4 Analog Input Data (PGN 65313 , Byte 6) indicates a value of FFh			N/A - Handled by translator. PwrMod2_Output4_Current_Signal
33	520487	RPM 2 Channel 4 Overcurrent	19	RPM 2 Channel 4 Analog Input Invalid Data	RPM 2 Channel 4 Analog Input Data (PGN 65313 , Byte 6) indicates a value in the range of FCh to FEh			N/A - Handled by translator. PwrMod2_Output4_Current_Signal
33	520488	RPM 2 Channel 5 Cab Switch	2	RPM 2 Channel 5 Switch Error	Data erratic, intermittent or incorrect			PwrMod2_Swch5_ON_Switch
33	520489	RPM 2 Channel 5 Overcurrent	6	RPM 2 Channel 5 Overcurrent	Current above normal or grounded circuit			N/A - Handled by translator. PwrMod2_Output5_Current_Signal
33	520489	RPM 2 Channel 5 Overcurrent	14	RPM 2 Channel 5 Analog Input Data Unavailable	RPM 2 Channel 5 Analog Input Data (PGN 65313 , Byte 7) indicates a value of FFh			N/A - Handled by translator. PwrMod2_Output5_Current_Signal
33	520489	RPM 2 Channel 5 Overcurrent	19	RPM 2 Channel 5 Analog Input Invalid Data	RPM 2 Channel 5 Analog Input Data (PGN 65313 , Byte 7) indicates a value in the range of FCh to FEh			N/A - Handled by translator. PwrMod2_Output5_Current_Signal
33	520490	RPM 2 Channel 6 Cab Switch	2	RPM 2 Channel 6 Switch Error	Data erratic, intermittent or incorrect			PwrMod2_Swch6_ON_Switch
33	520491	RPM 2 Channel 6 Overcurrent	6	RPM 2 Channel 6 Overcurrent	Current above normal or grounded circuit			PwrMod2_Output6_Current_Signal

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520491	RPM 2 Channel 6 Overcurrent	14	RPM 2 Channel 6 Analog Input Data Unavailable	RPM 2 Channel 6 Analog Input Data (PGN 65313 , Byte 8) indicates a value of FFh			PwrMod2_Output6_Current_Signal
33	520491	RPM 2 Channel 6 Overcurrent	19	RPM 2 Channel 6 Analog Input Invalid Data	RPM 2 Channel 6 Analog Input Data (PGN 65313 , Byte 8) indicates a value in the range of FCh to FEh			PwrMod2_Output6_Current_Signal
33	520504	RPM 4 Channel 1 Cab Switch	2	RPM 4 Channel 1 Switch Error	Data erratic, intermittent or incorrect			PwrMod4_Swch1_ON_Switch
33	520505	RPM 4 Channel 1 Overcurrent	6	RPM 4 Channel 1 Overcurrent	Current above normal or grounded circuit			PwrMod4_Output1_Current_Signal
33	520505	RPM 4 Channel 1 Overcurrent	14	RPM 4 Channel 1 Analog Input Data Unavailable	RPM 4 Channel 1 Analog Input Data (PGN 65313 , Byte 3) indicates a value of FFh			PwrMod4_Output1_Current_Signal
33	520505	RPM 4 Channel 1 Overcurrent	19	RPM 4 Channel 1 Analog Input Invalid Data	RPM 4 Channel 1 Analog Input Data (PGN 65313 , Byte 3) indicates a value in the range of FCh to FEh			PwrMod4_Output1_Current_Signal
33	520506	RPM 4 Channel 2 Cab Switch	2	RPM 4 Channel 2 Switch Error	Data erratic, intermittent or incorrect			PwrMod4_Swch2_ON_Switch
33	520507	RPM 4 Channel 2 Overcurrent	6	RPM 4 Channel 2 Overcurrent	Current above normal or grounded circuit			PwrMod4_Output2_Current_Signal
33	520507	RPM 4 Channel 2 Overcurrent	14	RPM 4 Channel 2 Analog Input Data Unavailable	RPM 4 Channel 2 Analog Input Data (PGN 65313 , Byte 4) indicates a value of FFh			PwrMod4_Output2_Current_Signal

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520507	RPM 4 Channel 2 Overcurrent	19	RPM 4 Channel 2 Analog Input Invalid Data	RPM 4 Channel 2 Analog Input Data (PGN 65313 , Byte 4) indicates a value in the range of FCh to FEh			PwrMod4_Output2_Current_Signal
33	520508	RPM 4 Channel 3 Cab Switch	2	RPM 4 Channel 3 Switch Error	Data erratic, intermittent or incorrect			PwrMod4_Swch3_ON_Switch
33	520509	RPM 4 Channel 3 Overcurrent	6	RPM 4 Channel 3 Overcurrent	Current above normal or grounded circuit			PwrMod4_Output3_Current_Signal
33	520509	RPM 4 Channel 3 Overcurrent	14	RPM 4 Channel 3 Analog Input Data Unavailable	RPM 4 Channel 3 Analog Input Data (PGN 65313 , Byte 5) indicates a value of FFh			PwrMod4_Output3_Current_Signal
33	520509	RPM 4 Channel 3 Overcurrent	19	RPM 4 Channel 3 Analog Input Invalid Data	RPM1 Channel1 Analog Input Data (PGN 65313 , Byte 5) indicates a value in the range of FCh to FEh			PwrMod4_Output3_Current_Signal
33	520510	RPM 4 Channel 4 Cab Switch	2	RPM 4 Channel 4 Switch Error	Data erratic, intermittent or incorrect			PwrMod4_Swch4_ON_Switch
33	520511	RPM 4 Channel 4 Overcurrent	6	RPM 4 Channel 4 Overcurrent	Current above normal or grounded circuit			PwrMod4_Output4_Current_Signal
33	520511	RPM 4 Channel 4 Overcurrent	14	RPM 4 Channel 4 Analog Input Data Unavailable	RPM 4 Channel 4 Analog Input Data (PGN 65313 , Byte 6) indicates a value of FFh			PwrMod4_Output4_Current_Signal

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520511	RPM 4 Channel 4 Overcurrent	19	RPM 4 Channel 4 Analog Input Invalid Data	RPM 4 Channel 4 Analog Input Data (PGN 65313 , Byte 6) indicates a value in the range of FCh to FEh			PwrMod4_Output4_Current_Signal
33	520512	RPM 4 Channel 5 Cab Switch	2	RPM 4 Channel 5 Switch Error	Data erratic, intermittent or incorrect			PwrMod4_Swch5_ON_Switch
33	520513	RPM 4 Channel 5 Overcurrent	6	RPM 4 Channel 5 Overcurrent	Current above normal or grounded circuit			PwrMod4_Output5_Current_Signal
33	520513	RPM 4 Channel 5 Overcurrent	14	RPM 4 Channel 5 Analog Input Data Unavailable	RPM 4 Channel 5 Analog Input Data (PGN 65313 , Byte 7) indicates a value of FFh			PwrMod4_Output5_Current_Signal
33	520513	RPM 4 Channel 5 Overcurrent	19	RPM 4 Channel 5 Analog Input Invalid Data	RPM 4 Channel 5 Analog Input Data (PGN 65313 , Byte 7) indicates a value in the range of FCh to FEh			PwrMod4_Output5_Current_Signal
33	520514	RPM 4 Channel 6 Cab Switch	2	RPM 4 Channel 6 Switch Error	Data erratic, intermittent or incorrect			PwrMod4_Swch6_ON_Switch
33	520515	RPM 4 Channel 6 Overcurrent	6	RPM 4 Channel 6 Overcurrent	Current above normal or grounded circuit			N/A - Handled by translator. PwrMod4_Output6_Current_Signal
33	520515	RPM 4 Channel 6 Overcurrent	14	RPM 4 Channel 6 Analog Input Data Unavailable	RPM 4 Channel 6 Analog Input Data (PGN 65313 , Byte 8) indicates a value of FFh			N/A - Handled by translator. PwrMod4_Output6_Current_Signal

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520515	RPM 4 Channel 6 Overcurrent	19	RPM 4 Channel 6 Analog Input Invalid Data	RPM 4 Channel 6 Analog Input Data (PGN 65313 , Byte 8) indicates a value in the range of FCh to FEh			N/A - Handled by translator. PwrMod4_Output6_Current_Signal
33	520540	RPM 7 Channel 1 Cab Switch	2	RPM 7 Channel 1 Switch Error	Data erratic, intermittent or incorrect			PwrMod7_Swch1_ON_Switch
33	520541	RPM 7 Channel 1 Overcurrent	6	RPM 7 Channel 1 Overcurrent	Current above normal or grounded circuit			N/A - Handled by translator. PwrMod7_Output1_Current_Signal
33	520541	RPM 7 Channel 1 Overcurrent	14	RPM 7 Channel 1 Analog Input Data Unavailable	RPM 7 Channel 1 Analog Input Data (PGN 65313 , Byte 3) indicates a value of FFh			N/A - Handled by translator. PwrMod7_Output1_Current_Signal
33	520541	RPM 7 Channel 1 Overcurrent	19	RPM 7 Channel 1 Analog Input Invalid Data	RPM 7 Channel 1 Analog Input Data (PGN 65313 , Byte 3) indicates a value in the range of FCh to FEh			N/A - Handled by translator. PwrMod7_Output1_Current_Signal
33	520542	RPM 7 Channel 2 Cab Switch	2	RPM 7 Channel 2 Switch Error	Data erratic, intermittent or incorrect			PwrMod7_Swch2_ON_Switch
33	520543	RPM 7 Channel 2 Overcurrent	6	RPM 7 Channel 2 Overcurrent	Current above normal or grounded circuit			N/A - Handled by translator. PwrMod7_Output2_Current_Signal
33	520543	RPM 7 Channel 2 Overcurrent	14	RPM 7 Channel 2 Analog Input Data Unavailable	RPM 7 Channel 2 Analog Input Data (PGN 65313 , Byte 4) indicates a value of FFh			N/A - Handled by translator. PwrMod7_Output2_Current_Signal

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520543	RPM 7 Channel 2 Overcurrent	19	RPM 7 Channel 2 Analog Input Invalid Data	RPM 7 Channel 2 Analog Input Data (PGN 65313 , Byte 4) indicates a value in the range of FCh to FEh			N/A - Handled by translator. PwrMod7_Output2_Current_Signal
33	520544	RPM 7 Channel 3 Cab Switch	2	RPM 7 Channel 3 Switch Error	Data erratic, intermittent or incorrect			PwrMod7_Swch3_ON_Switch
33	520545	RPM 7 Channel 3 Overcurrent	6	RPM 7 Channel 3 Overcurrent	Current above normal or grounded circuit			N/A - Handled by translator. PwrMod7_Output3_Current_Signal
33	520545	RPM 7 Channel 3 Overcurrent	14	RPM 7 Channel 3 Analog Input Data Unavailable	RPM 7 Channel 3 Analog Input Data (PGN 65313 , Byte 5) indicates a value of FFh			N/A - Handled by translator. PwrMod7_Output3_Current_Signal
33	520545	RPM 7 Channel 3 Overcurrent	19	RPM 7 Channel 3 Analog Input Invalid Data	RPM 7 Channel 3 Analog Input Data (PGN 65313 , Byte 5) indicates a value in the range of FCh to FEh			N/A - Handled by translator. PwrMod7_Output3_Current_Signal
33	520546	RPM 7 Channel 4 Cab Switch	2	RPM 7 Channel 4 Switch Error	Data erratic, intermittent or incorrect			PwrMod7_Swch4_ON_Switch
33	520547	RPM 7 Channel 4 Overcurrent	6	RPM 7 Channel 4 Overcurrent	Current above normal or grounded circuit			PwrMod7_Output4_Current_Signal
33	520547	RPM 7 Channel 4 Overcurrent	14	RPM 7 Channel 4 Analog Input Data Unavailable	RPM 7 Channel 4 Analog Input Data (PGN 65313 , Byte 6) indicates a value of FFh			PwrMod7_Output4_Current_Signal

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520547	RPM 7 Channel 4 Overcurrent	19	RPM 7 Channel 4 Analog Input Invalid Data	RPM 7 Channel 4 Analog Input Data (PGN 65313 , Byte 6) indicates a value in the range of FCh to FEh			PwrMod7_Output4_Current_Signal
33	520548	RPM 7 Channel 5 Cab Switch	2	RPM 7 Channel 5 Switch Error	Data erratic, intermittent or incorrect			PwrMod7_Swch5_ON_Switch
33	520549	RPM 7 Channel 5 Overcurrent	6	RPM 7 Channel 5 Overcurrent	Current above normal or grounded circuit			PwrMod7_Output5_Current_Signal
33	520549	RPM 7 Channel 5 Overcurrent	14	RPM 7 Channel 5 Analog Input Data Unavailable	RPM 7 Channel 5 Analog Input Data (PGN 65313 , Byte 7) indicates a value of FFh			PwrMod7_Output5_Current_Signal
33	520549	RPM 7 Channel 5 Overcurrent	19	RPM 7 Channel 5 Analog Input Invalid Data	RPM 7 Channel 5 Analog Input Data (PGN 65313 , Byte 7) indicates a value in the range of FCh to FEh			PwrMod7_Output5_Current_Signal
33	520550	RPM 7 Channel 6 Cab Switch	2	RPM 7 Channel 6 Switch Error	Data erratic, intermittent or incorrect			PwrMod7_Swch6_ON_Switch
33	520551	RPM 7 Channel 6 Overcurrent	6	RPM 7 Channel 6 Overcurrent	Current above normal or grounded circuit			PwrMod7_Output6_Current_Signal
33	520551	RPM 7 Channel 6 Overcurrent	14	RPM 7 Channel 6 Analog Input Data Unavailable	RPM 7 Channel 6 Analog Input Data (PGN 65313 , Byte 8) indicates a value of FFh			PwrMod7_Output6_Current_Signal

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520551	RPM 7 Channel 6 Overcurrent	19	RPM 7 Channel 6 Analog Input Invalid Data	RPM 7 Channel 6 Analog Input Data (PGN 65313 , Byte 8) indicates a value in the range of FCh to FEh			PwrMod7_Output6_Current_Signal
33	520552	TEM Aux 1 Int Switch	2	TEM Aux 1 Int Switch Error	Data erratic, intermittent or incorrect			TEM_Aux1_Int_Switch_On
33	520553	TEM Aux 1 Switch	2	TEM Aux 1 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux1_Switch
33	520554	TEM Aux 1 With Interlocks Switch	2	TEM Aux 1 With Interlocks Switch Error	Data erratic, intermittent or incorrect			TEM_Aux1_w_Interlocks_Switch
33	520555	TEM Aux 10 Switch	2	TEM Aux 10 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux10_Switch
33	520556	TEM Aux 11 Switch	2	TEM Aux 11 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux11_Switch
33	520557	TEM Aux 12 Switch	2	TEM Aux 12 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux12_Switch
33	520558	TEM Aux 13 Switch	2	TEM Aux 13 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux13_Switch
33	520559	TEM Aux 14 Switch	2	TEM Aux 14 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux14_Switch
33	520560	TEM Aux 15 Switch	2	TEM Aux 16 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux15_Switch
33	520561	TEM Aux 16 Switch	2	TEM Aux 16 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux16_Switch

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520562	TEM Aux 17 Switch	2	TEM Aux 17 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux17_Switch
33	520563	TEM Aux 18 Switch	2	TEM Aux 18 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux18_Switch
33	520564	TEM Aux 2 Int Switch	2	TEM Aux 2 Int Switch Error	Data erratic, intermittent or incorrect			TEM_Aux2_Int_Switch_On
33	520565	TEM Aux 2 Switch	2	TEM Aux 2 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux2_Switch
33	520566	TEM Aux 2 With Interlocks Switch	2	TEM Aux 2 With Interlocks Switch Error	Data erratic, intermittent or incorrect			TEM_Aux2_w_Interlocks_Switch
33	520567	TEM Aux 3 Int Switch	2	TEM Aux 3 Int Switch Error	Data erratic, intermittent or incorrect			TEM_Aux3_Int_Switch_On
33	520568	TEM Aux 3 Switch	2	TEM Aux 3 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux3_Switch
33	520569	TEM Aux 3 With Interlocks Switch	2	TEM Aux 3 With Interlocks Switch Error	Data erratic, intermittent or incorrect			TEM_Aux3_w_Interlocks_Switch
33	520570	TEM Aux 4 Switch	2	TEM Aux 4 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux4_Switch
33	520571	TEM Aux 4 With Interlocks Switch	2	TEM Aux 4 With Interlocks Switch Error	Data erratic, intermittent or incorrect			TEM_Aux4_w_Interlocks_Switch
33	520572	TEM Aux 5 Switch	2	TEM Aux 5 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux5_Switch
33	520573	TEM Aux 6 Switch	2	TEM Aux 6 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux6_Switch

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520574	TEM Aux 7 Switch	2	TEM Aux 7 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux7_Switch
33	520575	TEM Aux 8 Switch	2	TEM Aux 8 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux8_Switch
33	520576	TEM Aux 9 Switch	2	TEM Aux 9 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux9_Switch
33	520577	TEM Aux Solenoid 1	5	TEM Aux Solenoid 1 Under Current Or Open Circuit	Current below normal or open circuit			TEM_Aux_Open_Solenoid_1_Cmd, TEM_Aux_Solenoid_1_Cmd
33	520577	TEM Aux Solenoid 1	6	TEM Aux Solenoid 1 Overcurrent	Current above normal or grounded circuit			TEM_Aux_Open_Solenoid_1_Cmd, TEM_Aux_Solenoid_1_Cmd
33	520578	TEM Aux Solenoid 1 Switch	2	TEM Aux Solenoid 1 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux_Solenoid_1_Switch_On
33	520579	TEM Aux Solenoid 2	5	TEM Aux Solenoid 2 Under Current Or Open Circuit	Current below normal or open circuit			TEM_Aux_Open_Solenoid_2_Cmd, TEM_Aux_Solenoid_2_Cmd
33	520579	TEM Aux Solenoid 2	6	TEM Aux Solenoid 2 Overcurrent	Current above normal or grounded circuit			TEM_Aux_Open_Solenoid_2_Cmd, TEM_Aux_Solenoid_2_Cmd
33	520580	TEM Aux Solenoid 2 Switch	2	TEM Aux Solenoid 2 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux_Solenoid_2_Switch_On
33	520581	TEM Aux Solenoid 3	5	TEM Aux Solenoid 3 Under Current Or Open Circuit	Current below normal or open circuit			TEM_Aux_Open_Solenoid_3_Cmd, TEM_Aux_Solenoid_3_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520581	TEM Aux Solenoid 3	6	TEM Aux Solenoid 3 Overcurrent	Current above normal or grounded circuit			TEM_Aux_Open_Solenoid_3_Cmd, TEM_Aux_Solenoid_3_Cmd
33	520582	TEM Aux Solenoid 3 Switch	2	TEM Aux Solenoid 3 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux_Solenoid_3_Switch_On
33	520583	TEM Aux Solenoid 4	5	TEM Aux Solenoid 4 Under Current Or Open Circuit	Current below normal or open circuit			TEM_Aux_Open_Solenoid_4_Cmd, TEM_Aux_Solenoid_4_Cmd
33	520583	TEM Aux Solenoid 4	6	TEM Aux Solenoid 4 Overcurrent	Current above normal or grounded circuit			TEM_Aux_Open_Solenoid_4_Cmd, TEM_Aux_Solenoid_4_Cmd
33	520584	TEM Aux Solenoid 4 Switch	2	TEM Aux Solenoid 4 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux_Solenoid_4_Switch_On
33	520585	TEM Aux Solenoid 5	5	TEM Aux Solenoid 5 Under Current Or Open Circuit	Current below normal or open circuit			TEM_Aux_Open_Solenoid_5_Cmd
33	520585	TEM Aux Solenoid 5	6	TEM Aux Solenoid 5 Overcurrent	Current above normal or grounded circuit			TEM_Aux_Open_Solenoid_5_Cmd
33	520586	TEM Aux Solenoid 5 Switch	2	TEM Aux Solenoid 5 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux_Solenoid_5_Switch_On
33	520587	TEM Aux Solenoid 6	5	TEM Aux Solenoid 6 Under Current Or Open Circuit	Current below normal or open circuit			TEM_Aux_Open_Solenoid_6_Cmd
33	520587	TEM Aux Solenoid 6	6	TEM Aux Solenoid 6 Overcurrent	Current above normal or grounded circuit			TEM_Aux_Open_Solenoid_6_Cmd
33	520588	TEM Aux Solenoid 6 Switch	2	TEM Aux Solenoid 6 Switch Error	Data erratic, intermittent or incorrect			TEM_Aux_Solenoid_6_Switch_On

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520589	TEM Dual 1 Switch	2	TEM Dual 1 Switch Error	Data erratic, intermittent or incorrect			TEM_Dual1_Switch
33	520590	Data Link - Switch 12 Pack top	9	Switch 12-Pack Top Data Link Comm. Failure	Abnormal update rate			SwitchPack_3_IN_Timer
33	520591	Data Link - Switch 12 Pack bottom	9	Switch 12-Pack Bottom Data Link Comm. Failure	Abnormal update rate			SwitchPack_4_IN_Timer
33	520604	5V Sensor Supply	0	5V Sensor Supply Above Normal Range	Data valid but above normal operational range - most severe level			Switched_5V_Sense_Raw_Signal
33	520604	5V Sensor Supply	1	5V Sensor Supply Below Normal Range	Data valid but below normal operational range - most severe level			Switched_5V_Sense_Raw_Signal
33	520605	EGC Gauge Calibration	13	Electronic Gauge Cluster checksum error.	Defective EGC			Cluster_cal_status
33	520606	AGSP Gauge Calibration	13	AGSP checksum error.	Defective AGSP			AGSP_cal_status
33	520607	SIC Gauge Calibration	13	SIC checksum error.	Defective SIC			SIC1_Calibration_Status
33	520644	PPE3 AC Module Input Voltage	3	AC Module Overvoltage condition on High Voltage DC Bus.	An Over Voltage Condition in the AC module (Inverter High Voltage Bus).	A high Battery Cutout fault has occurred and the source of the fault is the AC module (inverter high voltage bus).		
33	520644	PPE3 AC Module Input Voltage	4	AC Module Undervoltage condition on High Voltage DC Bus.	An Under Voltage Condition in the AC module (Inverter High Voltage Bus).	A low Battery Cutout fault has occurred and the source of the fault is the AC module (inverter high voltage bus).		
33	520649	Air Horn Solenoid Command	5	Air Horn Undercurrent	Open in Air Horn Circuit			

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520649	Air Horn Solenoid Command	6	Air Horn Overcurrent	Short To Ground or Overload in Air Horn Circuit			
33	520650	Air Horn Switch / Headlight Interrupt Switch	0	Headlight Interrupt, Marker Interrupt and Air Horn Switch reading above normal range	AMH Request Circuit Open or Shorted High		1600-B1	Steering_Wheel_Switches_Raw_Signal
33	520650	Air Horn Switch / Headlight Interrupt Switch	1	Headlight Interrupt, Marker Interrupt and Air Horn Switch reading below normal range	Short To Ground in AMH Request Circuit		1600-B1	Steering_Wheel_Switches_Raw_Signal
33	520651	Air Shield Lights Command	6	Air Shield Lighting Overcurrent	Short To Ground or Overload in Air Shield Light Circuit			Air_Shield_Lights_Cmd
33	520652	Auxiliary High Current Load Relay Command	5	High Current Load Under Current Or Open Circuit	Current below normal or open circuit			High_Current_Load_Cmd
33	520652	Auxiliary High Current Load Relay Command	6	High Current Load Overcurrent	Current above normal or grounded circuit			High_Current_Load_Cmd
33	520653	Auxiliary High Current Load Switch	2	High Current Load Switch Error	Data erratic, intermittent or incorrect			High_Current_Load_Switch
33	520654	Auxiliary Transmission Constant Supply Air Solenoid Command	5	Auxiliary Transmission Solenoid B (Constant Supply) output is Under Current Or Open Circuit.	Current below normal or open circuit			Aux_Xmsn_Solenoid_B_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520654	Auxiliary Transmission Constant Supply Air Solenoid Command	6	Auxiliary Transmission Solenoid B (Constant Supply) output is overcurrent.	Current above normal or grounded circuit			Aux_Xmsn_Solenoid_B_Cmd
33	520655	Auxiliary Transmission High Range Air Solenoid Command	5	Auxiliary Transmission Solenoid C (High) output is Under Current Or Open Circuit.	Current below normal or open circuit			Aux_Xmsn_Solenoid_C_Cmd
33	520655	Auxiliary Transmission High Range Air Solenoid Command	6	Auxiliary Transmission Solenoid C (High) output is overcurrent.	Current above normal or grounded circuit			Aux_Xmsn_Solenoid_C_Cmd
33	520656	Auxiliary Transmission Neutral Air Solenoid Command	5	Auxiliary Transmission Solenoid A (Neutral) output is Under Current Or Open Circuit.	Current below normal or open circuit			Aux_Xmsn_Solenoid_A_Cmd
33	520656	Auxiliary Transmission Neutral Air Solenoid Command	6	Auxiliary Transmission Solenoid A (Neutral) output is overcurrent.	Current above normal or grounded circuit			Aux_Xmsn_Solenoid_A_Cmd
33	520657	Auxiliary Transmission Range Switch	2	Auxiliary Transmission High/Low Switch state is invalid.	Data erratic, intermittent or incorrect			Aux_Xmsn_Hi_Switch
33	520658	Body Equipment Hydraulic Power Auxiliary Pump Inhibit Command	5	TEM Epump Inhibit Relay Under Current Or Open Circuit	Current below normal or open circuit			TEM_EPump_Inhibit_Relay

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520658	Body Equipment Hydraulic Power Auxiliary Pump Inhibit Command	6	TEM Epump Inhibit Relay Over Current	Current above normal or grounded circuit			TEM_EPump_Inhibit_Relay
33	520659	Bus Amber Signal Light 1 Command	5	Left Front Amber PWL Undercurrent	Current below normal or open circuit			BUS_LF_Amber_PWL_Cmd
33	520659	Bus Amber Signal Light 1 Command	6	Left Front Amber PWL Overcurrent	Current above normal or grounded circuit			BUS_LF_Amber_PWL_Cmd
33	520660	Bus Amber Signal Light 2 Command	5	Right Front Amber PWL Undercurrent	Current below normal or open circuit			BUS_RF_Amber_PWL_Cmd
33	520660	Bus Amber Signal Light 2 Command	6	Right Front Amber PWL Overcurrent	Current above normal or grounded circuit			BUS_RF_Amber_PWL_Cmd
33	520661	Bus Amber Signal Light 3 Command	5	Left Rear Amber PWL Undercurrent	Current below normal or open circuit			BUS_LR_Amber_PWL_Cmd
33	520661	Bus Amber Signal Light 3 Command	6	Left Rear Amber PWL Overcurrent	Current above normal or grounded circuit			BUS_LR_Amber_PWL_Cmd
33	520662	Bus Amber Signal Light 4 Command	5	Right Rear Amber PWL Undercurrent	Current below normal or open circuit			BUS_RR_Amber_PWL_Cmd
33	520662	Bus Amber Signal Light 4 Command	6	Right Rear Amber PWL Overcurrent	Current above normal or grounded circuit			BUS_RR_Amber_PWL_Cmd
33	520663	Bus Red Signal Light 4 Command	5	Right Rear Red PWL Undercurrent	Current below normal or open circuit			BUS_RR_Red_PWL_Cmd
33	520663	Bus Red Signal Light 4 Command	6	Right Rear Red PWL Overcurrent	Current above normal or grounded circuit			BUS_RR_Red_PWL_Cmd
33	520664	Bus Crossing Gate Command	5	Crossing Gate output is undercurrent.	Current below normal or open circuit			BUS_Crossing_Gate_Cmd
33	520664	Bus Crossing Gate Command	6	Crossing Gate output is overcurrent.	Current above normal or grounded circuit			BUS_Crossing_Gate_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520665	Bus Passenger Door Close Relay Command	5	Bus Entrance Door Close Relay Driver Output is Under Current Or Open Circuit	Current below normal or open circuit			BUS_Door_Close_Cmd
33	520665	Bus Passenger Door Close Relay Command	6	Bus Entrance Door Close Relay Driver Output is overcurrent	Current above normal or grounded circuit			BUS_Door_Close_Cmd
33	520667	Bus Passenger Door Control Switch 2	0	Bus Entrance Door Steering Wheel Switch Input Above Normal Range	Bus Door Control Switches Circuit Open or Shorted High			BUS_PWL_And_Door_Switch_Raw_Signal
33	520667	Bus Passenger Door Control Switch 2	1	Bus Entrance Door Steering Wheel Switch Input Below Normal Range	Short To Ground in Bus Door Control Switches Circuit			BUS_PWL_And_Door_Switch_Raw_Signal
33	520668	Bus Passenger Door Open Relay Command	5	Bus Entrance Door Open Relay Driver Output is Under Current Or Open Circuit	Current below normal or open circuit			BUS_Door_Open_Cmd
33	520668	Bus Passenger Door Open Relay Command	6	Bus Entrance Door Open Relay Driver Output is overcurrent	Current above normal or grounded circuit			BUS_Door_Open_Cmd
33	520669	Bus Red Signal Light 1 Command	5	Left Front Red PWL Undercurrent	Current below normal or open circuit			BUS_LF_Red_PWL_Cmd
33	520669	Bus Red Signal Light 1 Command	6	Left Front Red PWL Overcurrent	Current above normal or grounded circuit			BUS_LF_Red_PWL_Cmd
33	520670	Bus Red Signal Light 2 Command	5	Right Front Red PWL Undercurrent	Current below normal or open circuit			BUS_RF_Red_PWL_Cmd
33	520670	Bus Red Signal Light 2 Command	6	Right Front Red PWL Overcurrent	Current above normal or grounded circuit			BUS_RF_Red_PWL_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520671	Bus Red Signal Light 3 Command	5	Left Rear Red PWL Undercurrent	Current below normal or open circuit			BUS_LR_Red_PWL_Cmd
33	520671	Bus Red Signal Light 3 Command	6	Left Rear Red PWL Overcurrent	Current above normal or grounded circuit			BUS_LR_Red_PWL_Cmd
33	520672	Bus Stop Arm Command	5	Bus Stop Arm Output is Under Current Or Open Circuit	Current below normal or open circuit			BUS_Stop_Arm_Cmd
33	520672	Bus Stop Arm Command	6	Bus Stop Arm Output is over current	Current above normal or grounded circuit			BUS_Stop_Arm_Cmd
33	520673	Cab Dome Light 1 Command	5	Cab Dome Light Open Circuit	Open in Cab Dome Light Circuit			Dome_Light_Cmd
33	520673	Cab Dome Light 1 Command	6	Cab Dome Light Short To Ground	Short To Ground or Overload in Cab Dome Light Circuit			Dome_Light_Cmd
33	520674	Cab Dome Light 1 Switch	2	Cab Dome Light Switch is reporting an error.	Faulty Switch Actuator or Microswitch for Cab Dome Light Switch			Dome_Light_ON_Switch
33	520675	Cab Dome Light 2 Command	5	Sleeper Dome Light Relay Under Current Or Open Circuit	Open Circuit in Sleeper Dome Light Circuit			Sleeper_Cab_Dome_Light_Req
33	520675	Cab Dome Light 2 Command	6	Sleeper Dome Light Over Current	Short To Ground in Sleeper Dome Light Circuit			Sleeper_Cab_Dome_Light_Req
33	520676	Cab Dome Light 2 Switch	2	Sleeper Dome / Floor Search Light Switch Error	Faulty Switch Actuator or Microswitch for Sleeper Dome / Floor Search Light Switch			Floor_Lights_Cab_Switch
33	520677	Cab Floor Light Command	5	Floor Lights Relay Under Current Or Open Circuit	Open Circuit in Floor Light Circuit			Floor_Search_Lights_Req
33	520677	Cab Floor Light Command	6	Floor Lights Relay Over Current	Short To Ground in Floor Light Circuit			Floor_Search_Lights_Req

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520678	Cab Window Motor 1 Status	7	Driver Window Motor Failure	Driver Door Pod Module Window Motor Has Short or Open or Window is Jammed			Door_Pod_Master_WMF_Signal
33	520679	Cab Window Motor 2 Status	7	Passenger Window Motor Failure	Passenger Door Pod Module Window Motor Has Short or Open or Window is Jammed			Door_Pod_Front_LMF_Signal
33	520680	Cab Window Motor 3 Status	7	Rear Driver Window Motor Failure	Rear Driver Door Pod Module Window Motor Has Short or Open or Window is Jammed			Door_Pod_Rear_1_WMF_Signal
33	520681	Cab Window Motor 4 Status	7	Rear Passenger Window Motor Failure	Rear Passenger Door Pod Module Window Motor Has Short or Open or Window is Jammed			Door_Pod_Rear_2_WMF_Signal
33	520682	Compression Brake Switch Indicator Lamp Command	5	Compression Brake Indicator output is Under Current Or Open Circuit	Current below normal or open circuit			Comp_Brake_LED_Ind_Cmd
33	520682	Compression Brake Switch Indicator Lamp Command	6	Compression Brake Indicator is over current	Current above normal or grounded circuit			Comp_Brake_LED_Ind_Cmd
33	520683	Door Control Module 1 Status	7	Driver Door Pod Module Failure	Defective Driver Door Pod Module			Door_Pod_Front_MF_Signal
33	520684	Door Control Module 2 Status	7	Passenger Door Pod Module Failure	Defective Passenger Door Pod Module			Door_Pod_Front_MF_Signal
33	520685	Door Control Module 3 Status	7	Rear Driver Door Pod Module Failure	Defective Rear Driver Door Pod Module			Door_Pod_Rear_1_MF_Signal
33	520686	Door Control Module 4 Status	7	Rear Passenger Door Pod Module Failure	Defective Rear Passenger Door Pod Module			Door_Pod_Rear_2_MF_Signal

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520687	Engine Remote Start Command	5	Remote Start Relay Under Current Or Open Circuit	Open Circuit in Remote Bunk Start Circuit			Remote_Start_Relay
33	520687	Engine Remote Start Command	6	Remote Start Relay Over Current	Short To Ground in Remote Bunk Start Circuit			Remote_Start_Relay
33	520688	Engine Remote Stop Command	5	Remote Stop Relay Under Current Or Open Circuit	Open Circuit in Remote Bunk Stop Circuit			Remote_Stop_Relay
33	520688	Engine Remote Stop Command	6	Remote Stop Relay Over Current	Short To Ground in Remote Bunk Stop Circuit			Remote_Stop_Relay
33	520689	Exterior Lamp Check Switch	2	Exterior Lamp Check Switch Error	Data erratic, intermittent or incorrect			BUS_ELC_On_Switch
33	520690	Fifth Wheel Slide Latch Solenoid Command	2	Fifth Wheel Slide Switch Error	Faulty Switch Actuator or Microswitch for Fifth Wheel Slide Switch			
33	520691	Fog Light 2 Command	5	Right Fog Light Undercurrent	Open in Right Fog Light Circuit			
33	520691	Fog Light 2 Command	6	Right Fog Light Overcurrent	Short To Ground or Overload in Right Fog Light Output Circuit			
33	520692	Fuel Transfer Pump Command	5	Fuel Transfer Pump Relay Under Current Or Open Circuit	Open Circuit in Fuel Transfer Pump Circuit			
33	520692	Fuel Transfer Pump Command	6	Fuel Transfer Pump Relay Short To Ground	Short To Ground or Overload in Fuel Transfer Pump Circuit			
33	520693	Headlamp High Beam Command 1	5	Left High Beam Open Circuit	Open in Left High Beam Circuit			

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520693	Headlamp High Beam Command 1	6	Left High Beam Short To Ground	Short To Ground or Overload in Left High Beam Circuit			
33	520694	Headlamp High Beam Command 2	5	Right High Beam Open Circuit	Open in Right High Beam Circuit			
33	520694	Headlamp High Beam Command 2	6	Right High Beam Short To Ground	Short To Ground or Overload in Right High Beam Circuit			
33	520695	HVAC Mode Control Actuator	2	HVAC Control Head Mode Fault DM1	HVAC Motor in Wrong Position or Jammed			
33	520696	HVAC Recirculation Door Control Actuator	2	HVAC Control Head Air Inlet DM1	HVAC Motor in Wrong Position or Jammed			
33	520697	HVAC System Controller	9	HVAC Control Head Circuit Failed To Communicate With The BC	Abnormal update rate			
33	520698	Ignition Signal	2	Key State Ignition Signal Error	Open in Ignition Signal Input Circuit To BC			
33	520703	Lift Gate Power Control Enable Command	5	Lift Gate Enable Undercurrent	Current below normal or open circuit			
33	520703	Lift Gate Power Control Enable Command	6	Lift Gate Enable Overcurrent	Current above normal or grounded circuit			
33	520704	Lift Gate Power Control Switch	2	Lift Gate Switch Error	Data erratic, intermittent or incorrect			
33	520705	Load Shed OFF Command	5	Load Shed OFF Relay Under Current Or Open Circuit	Open Circuit in Load Shed OFF Circuit			

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520705	Load Shed OFF Command	6	Load Shed OFF Relay Over Current	Short To Ground in Load Shed OFF Circuit			
33	520706	Load Shed ON Command	5	Load Shed ON Relay Under Current Or Open Circuit	Open Circuit in Load Shed ON Circuit			
33	520706	Load Shed ON Command	6	Load Shed ON Relay Over Current	Short To Ground in Load Shed ON Circuit			
33	520707	Loop Time Exceeded	14	BC Internal Fault, Main Loop Time Exceeded	Software Configuration Too Big			
33	520708	Marker Interrupt Switch	2	Marker Interrupt Switch Failure	Data erratic, intermittent or incorrect			Marker_Interrupt_Switch
33	520709	Mirror Heat 2 Command	5	Right Mirror Heat Undercurrent	Open in Right Mirror Heat Circuit			
33	520709	Mirror Heat 2 Command	6	Right Mirror Heat Overcurrent	Short To Ground or Overload in Right Mirror Heat Circuit			
33	520711	Primary Air Tank Drain Valve Actuator Command	5	Humphrey Valve Primary Tank Solenoid Under Current Or Open Circuit	Current below normal or open circuit			
33	520711	Primary Air Tank Drain Valve Actuator Command	6	Humphrey Valve Primary Tank Solenoid Short To Ground	Current above normal or grounded circuit			
33	520712	Primary Tank Drain Valve Switch	2	Humphrey Valve Primary Tank Switch Error	Data erratic, intermittent or incorrect			Hmphry_Vlve_Prim_Tk_Open
33	520713	Rear HVAC Blower Speed Control Switch	2	Rear HVAC Blower Speed Control Switch Error	Faulty Switch Actuator or Microswitch for Rear HVAC Blower Speed Control Switch			Rear_HVAC_Blower_UP

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520714	Rear HVAC Temperature Control Switch	2	Rear HVAC Temperature Control Switch Error	Faulty Switch Actuator or Microswitch for Rear HVAC Temperature Control Switch			Rear_HVAC_Temp_UP
33	520715	Secondary Tank Drain Valve Actuator Command	5	Humphrey Valve Secondary Tank Solenoid Under Current Or Open Circuit	Current below normal or open circuit			
33	520715	Secondary Tank Drain Valve Actuator Command	6	Humphrey Valve Secondary Tank Solenoid Short To Ground	Current above normal or grounded circuit			
33	520716	Secondary Tank Drain Valve Switch	2	Humphrey Valve Secondary Tank Switch Error	Data erratic, intermittent or incorrect			Hmphry_Vlve_Sec_Tk_Open
33	520720	Snow Plow Light Left Forward Lighting Relay Command	5	Left Plow Light Relay Under Current Or Open Circuit	Current below normal or open circuit			Left_Plow_Lights_Relay_Req
33	520720	Snow Plow Light Left Forward Lighting Relay Command	6	Left Plow Light Relay Circuit Short To Ground	Current above normal or grounded circuit			Left_Plow_Lights_Relay_Req
33	520721	Snow Plow Light Right Forward Lighting Relay Command	5	Right Plow Light Relay Under Current Or Open Circuit	Current below normal or open circuit			Right_Plow_Lights_Relay_Req
33	520721	Snow Plow Light Right Forward Lighting Relay Command	6	Right Plow Light Relay Circuit Short To Ground	Current above normal or grounded circuit			Right_Plow_Lights_Relay_Req
33	520722	Snow Plow Lighting Mode Switch	2	Snow Plow Switch Error	Data erratic, intermittent or incorrect			Plow_Lights_Switch

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520725	Supply Air Tank Drain Valve Actuator Command	5	Humphrey Valve Wet Tank Solenoid Under Current Or Open Circuit	Current below normal or open circuit			Hmphry_Vlve_Wet_Tk_Sol_Cmd
33	520725	Supply Air Tank Drain Valve Actuator Command	6	Humphrey Valve Wet Tank Solenoid Short To Ground	Current above normal or grounded circuit			Hmphry_Vlve_Wet_Tk_Sol_Cmd
33	520726	Supply Air Tank Drain Valve Switch	2	Humphrey Valve Wet Tank Switch Error	Data erratic, intermittent or incorrect			Hmphry_Vlve_Wet_Tk_Open
33	520727	Trailer Auxiliary Power Switch	2	Auxiliary Switch Error	Faulty Switch Actuator or Micro switch for Auxiliary Trailer Switch			EGC_Digital_Input_1
33	520728	Trailer Left Turn Light Relay Command	5	Trailer Left Turn Lamp Relay Under Current Or Open Circuit	Open Circuit in Trailer Left Turn Lamp Circuit			Trailer_Left_Light
33	520728	Trailer Left Turn Light Relay Command	6	Trailer Left Turn Lamp Relay Over Current	Short To Ground in Trailer Left Turn Lamp Circuit			Trailer_Left_Light
33	520729	Trailer License Plate Light Relay Command	5	Trailer License Plate Lamp Relay Under Current Or Open Circuit	Open Circuit in Trailer License Plate Lamp Circuit			Trailer_Plate_Light
33	520729	Trailer License Plate Light Relay Command	6	Trailer License Plate Lamp Relay Over Current	Short To Ground in Trailer License Plate Lamp Circuit			Trailer_Plate_Light
33	520730	Trailer Marker Light Relay Command	5	Trailer Marker Lamp Relay Under Current Or Open Circuit	Open Circuit in Trailer Marker Lamp Circuit			Trailer_Marker_Light
33	520730	Trailer Marker Light Relay Command	6	Trailer Marker Lamp Relay Over Current	Short To Ground in Trailer Marker Lamp Circuit			Trailer_Marker_Light

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520731	Trailer Right Turn Light Relay Command	5	Trailer Right Turn Lamp Relay Under Current Or Open Circuit	Open Circuit in Trailer Right Turn Lamp Circuit			Trailer_Right_Light
33	520731	Trailer Right Turn Light Relay Command	6	Trailer Right Turn Lamp Relay Over Current	Short To Ground in Trailer Right Turn Lamp Circuit			Trailer_Right_Light
33	520732	Trailer Stop Light Relay Command	5	Trailer Stop Lamp Relay Under Current Or Open Circuit	Open Circuit in Trailer Stop Lamp Circuit			Trailer_Stop_Light
33	520732	Trailer Stop Light Relay Command	6	Trailer Stop Lamp Relay Over Current	Short To Ground in Trailer Stop Lamp Circuit			Trailer_Stop_Light
33	520733	Transfer Case Blower Switch	2	Transfer Case Switch Error	Data erratic, intermittent or incorrect			Transfer_Case_Blower_Switch
33	520734	Transfer Case Front Driveline Solenoid Command	5	Transfer Case Solenoid D Under Current Or Open Circuit	Current below normal or open circuit			Xfer_Case_Sol_D_Cmd
33	520734	Transfer Case Front Driveline Solenoid Command	6	Transfer Case Solenoid D Short To Ground	Current above normal or grounded circuit			Xfer_Case_Sol_D_Cmd
33	520735	Transfer Case High Range Solenoid Command	5	Transfer Case Solenoid C Under Current Or Open Circuit	Current below normal or open circuit			Xfer_Case_Sol_C_Cmd
33	520735	Transfer Case High Range Solenoid Command	6	Transfer Case Solenoid C Short To Ground	Current above normal or grounded circuit			Xfer_Case_Sol_C_Cmd
33	520736	Transfer Case Low Range Solenoid Command	5	Transfer Case Solenoid A Under Current Or Open Circuit	Current below normal or open circuit			Xfer_Case_Sol_A_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520736	Transfer Case Low Range Solenoid Command	6	Transfer Case Solenoid A Short To Ground	Current above normal or grounded circuit			Xfer_Case_Sol_A_Cmd
33	520737	Transfer Case Neutral Solenoid Command	5	Transfer Case Solenoid B Under Current Or Open Circuit	Current below normal or open circuit			Xfer_Case_Sol_B_Cmd
33	520737	Transfer Case Neutral Solenoid Command	6	Transfer Case Solenoid B Short To Ground	Current above normal or grounded circuit			Xfer_Case_Sol_B_Cmd
33	520738	Transfer Case PTO Solenoid Command	5	Air Solenoid B Packs Relay Under Current Or Open Circuit	Current below normal or open circuit			SSpd_Xfer_Case_NO_Sol_Cmd
33	520738	Transfer Case PTO Solenoid Command	6	Air Solenoid B Packs Relay Over Current	Current above normal or grounded circuit			SSpd_Xfer_Case_NO_Sol_Cmd
33	520739	Transfer Case PTO Solenoid Relay Command	5	Transfer Case PTO Solenoid Under Current Or Open Circuit	Current below normal or open circuit			Xfer_Case_PTO_Solenoid_Cmd
33	520739	Transfer Case PTO Solenoid Relay Command	6	Transfer Case PTO Solenoid Short To Ground	Current above normal or grounded circuit			Xfer_Case_PTO_Solenoid_Cmd
33	520740	Transfer Case PTO Switch	2	Transfer Case PTO Switch Error	Data erratic, intermittent or incorrect			Xfer_Case_PTO_Eng_Switch
33	520741	Transfer Case Range Switch	2	Transfer Case Switch Error	Data erratic, intermittent or incorrect			Xfer_Case_High_Switch
33	520742	Transfer Case Rear Driveline Solenoid Command	5	Air Solenoid A Packs Relay Under Current Or Open Circuit	Current below normal or open circuit			SSpd_Xfer_Case_NC_Sol_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520742	Transfer Case Rear Driveline Solenoid Command	6	Air Solenoid A Packs Relay Over Current	Current above normal or grounded circuit			SSpd_Xfer_Case_NC_Sol_Cmd
33	520743	Transmission PTO Engagement Actuator Command	5	TEM PTO Engagement Relay Under Current Or Open Circuit	Current below normal or open circuit			TEM_PTO_Engagement_Relay_Cmd
33	520743	Transmission PTO Engagement Actuator Command	6	TEM PTO Engagement Relay Overcurrent	Current above normal or grounded circuit			TEM_PTO_Engagement_Relay_Cmd
33	520744	Transmission PTO Retention Actuator Command	5	TEM PTO Retaining Solenoid Undercurrent	Current below normal or open circuit			TEM_PTO_Retaining_Solenoid_Cmd
33	520744	Transmission PTO Retention Actuator Command	6	TEM PTO Retaining Solenoid Overcurrent	Current above normal or grounded circuit			TEM_PTO_Retaining_Solenoid_Cmd
33	520745	Transmission PTO Switch	2	TEM PTO Engagement Switch Error	Data erratic, intermittent or incorrect			TEM_PTO_Engagement_Switch_On
33	520746	Transmission Retarder Enable Switch	2	Transmission Retarder On/Off switch Failure	Data erratic, intermittent or incorrect			Retarder_Switch
33	520747	Two Speed Axle Actuator	5	Two Speed Axle Solenoid Relay Under Current Or Open Circuit	Current below normal or open circuit			Two_Spd_Axle_Solenoid_Cmd
33	520747	Two Speed Axle Actuator	6	Two Speed Axle Solenoid Relay Short To Ground	Current above normal or grounded circuit			Two_Spd_Axle_Solenoid_Cmd
33	520748	Wiper Motor Power	5	Wiper Motor Undercurrent	Open in Wiper Motor Circuit			Wipers_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520748	Wiper Motor Power	6	Wiper Motor Overcurrent	Short To Ground or Overload in Wiper Motor Circuit			Wipers_Cmd
33	520749	Mirror Heater	2	Mirror Heat Switch Error	Faulty Switch Actuator or Microswitch for Mirror Heat Switch			Mirror_Heat_On_Switch
33	520750	Fog Lights Left Command	5	Left Fog Light Undercurrent	Open in Left Fog Light Circuit			
33	520750	Fog Lights Left Command	6	Left Fog Light Overcurrent	Short To Ground or Overload in Left Fog Light Circuit			
33	520751	ICON Freedomline Gear Indicator	5	ICON Freedomline Gear Indicator Relay Under Current	Open Circuit in ICON Freedomline Gear Indicator Circuit		1601-F9	Freedomline_Gear_Indication_Relay_Cmd
33	520751	ICON Freedomline Gear Indicator	6	ICON Freedomline Gear Indicator Relay Over Current	Short To Ground in ICON Freedomline Gear Indicator Circuit		1601-F9	Freedomline_Gear_Indication_Relay_Cmd
33	520752	Electrical Accessory Power Switch	2	Electrical Accessory Power Switch Error	Faulty Switch Actuator or Microswitch for Electrical Accessory Power Switch			Sw_Acc_Load_On_Switch
33	520753	Transmission Economy Mode Switch	2	Transmission Economy Mode Switch Error	Faulty Switch Actuator or Microswitch for Transmission Economy Mode Switch			Bus_Econ_Mode_Switch
33	520754	Universal Air Solenoid Relay Driver 2	5	Universal Air Solenoid Relay Driver 2 Under Current Or Open Circuit	Open Circuit or Defective Solenoid			Univ_Air_Relay_Driver_2

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520754	Universal Air Solenoid Relay Driver 2	6	Universal Air Solenoid Relay Driver 2 Over Current	Short To Ground or Defective Solenoid			Univ_Air_Relay_Driver_2
33	520755	Universal Air Solenoid Relay Driver 3	5	Universal Air Solenoid Relay Driver 3 Under Current Or Open Circuit	Open Circuit or Defective Solenoid			Univ_Air_Relay_Driver_3
33	520755	Universal Air Solenoid Relay Driver 3	6	Universal Air Solenoid Relay Driver 3 Over Current	Short To Ground or Defective Solenoid			Univ_Air_Relay_Driver_3
33	520756	Universal Air Solenoid Relay Driver 4	5	Universal Air Solenoid Relay Driver 4 Under Current Or Open Circuit	Open Circuit or Defective Solenoid			Univ_Air_Relay_Driver_4
33	520756	Universal Air Solenoid Relay Driver 4	6	Universal Air Solenoid Relay Driver 4 Over Current	Short To Ground or Defective Solenoid			Univ_Air_Relay_Driver_4
33	520757	Universal Air Solenoid Relay Driver 5	5	Universal Air Solenoid Relay Driver 5 Under Current Or Open Circuit	Open Circuit or Defective Solenoid			Univ_Air_Relay_Driver_5
33	520757	Universal Air Solenoid Relay Driver 5	6	Universal Air Solenoid Relay Driver 5 Over Current	Short To Ground or Defective Solenoid			Univ_Air_Relay_Driver_5
33	520758	Universal Air Solenoid Relay Driver 6	5	Universal Air Solenoid Relay Driver 6 Under Current Or Open Circuit	Open Circuit or Defective Solenoid			

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520758	Universal Air Solenoid Relay Driver 6	6	Universal Air Solenoid Relay Driver 6 Over Current	Short To Ground or Defective Solenoid			
33	520759	Universal Air Solenoid Relay Driver 7	5	Universal Air Solenoid Relay Driver 7 Under Current Or Open Circuit	Open Circuit or Defective Solenoid			
33	520759	Universal Air Solenoid Relay Driver 7	6	Universal Air Solenoid Relay Driver 7 Over Current	Short To Ground or Defective Solenoid			
33	520760	Universal Air Solenoid Relay Driver 8	5	Universal Air Solenoid Relay Driver 8 Under Current Or Open Circuit	Open Circuit or Defective Solenoid			Univ_Air_Relay_Driver_8
33	520760	Universal Air Solenoid Relay Driver 8	6	Universal Air Solenoid Relay Driver 8 Over Current	Short To Ground or Defective Solenoid			Univ_Air_Relay_Driver_8
33	520761	Universal Air Solenoid Relay Driver 9	5	Universal Air Solenoid Relay Driver 9 Under Current Or Open Circuit	Open Circuit or Defective Solenoid			Univ_Air_Relay_Driver_9
33	520761	Universal Air Solenoid Relay Driver 9	6	Universal Air Solenoid Relay Driver 9 Over Current	Short To Ground or Defective Solenoid			Univ_Air_Relay_Driver_9
33	520762	Universal Air Solenoid Relay Driver 10	5	Universal Air Solenoid Relay Driver 10 Under Current Or Open Circuit	Open Circuit or Defective Solenoid			Univ_Air_Relay_Driver_10

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520762	Universal Air Solenoid Relay Driver 10	6	Universal Air Solenoid Relay Driver 10 Over Current	Short To Ground or Defective Solenoid			Univ_Air_Relay_Driver_10
33	520763	Universal Air Solenoid Relay Driver 11	5	Universal Air Solenoid Relay Driver 11 Under Current Or Open Circuit	Open Circuit or Defective Solenoid			Univ_Air_Relay_Driver_11
33	520763	Universal Air Solenoid Relay Driver 11	6	Universal Air Solenoid Relay Driver 11 Over Current	Short To Ground or Defective Solenoid			Univ_Air_Relay_Driver_11
33	520764	Universal Air Solenoid Relay Driver 12	5	Universal Air Solenoid Relay Driver 12 Under Current Or Open Circuit	Open Circuit or Defective Solenoid			Univ_Air_Relay_Driver_12
33	520764	Universal Air Solenoid Relay Driver 12	6	Universal Air Solenoid Relay Driver 12 Over Current	Short To Ground or Defective Solenoid			Univ_Air_Relay_Driver_12
33	520765	Universal Air Solenoid Relay Driver 13	5	Universal Air Solenoid Relay Driver 13 or Spare Relay Driver 4 Under Current Or Open Circuit	Open Circuit or Defective Solenoid			BUS_Spare_Relay_Driver_Four_Cmd, Univ_Air_Relay_Driver_13
33	520765	Universal Air Solenoid Relay Driver 13	6	Universal Air Solenoid Relay Driver 13 or Spare Relay Driver 4 Over Current	Short To Ground or Defective Solenoid			BUS_Spare_Relay_Driver_Four_Cmd, Univ_Air_Relay_Driver_13

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520766	Universal Air Solenoid Relay Driver 14	5	Universal Air Solenoid Relay Driver 14 or Spare Relay Driver 3 Under Current Or Open Circuit	Open Circuit or Defective Solenoid			BUS_Spare_Relay_Driver_Three_Cmd, Univ_Air_Relay_Driver_14
33	520766	Universal Air Solenoid Relay Driver 14	6	Universal Air Solenoid Relay Driver 14 or Spare Relay Driver 3 Over Current	Short To Ground or Defective Solenoid			BUS_Spare_Relay_Driver_Three_Cmd, Univ_Air_Relay_Driver_14
33	520767	Universal Air Solenoid Relay Driver 15	5	Universal Air Solenoid Relay Driver 15 Under Current Or Open Circuit	Open Circuit or Defective Solenoid			Univ_Air_Relay_Driver_15
33	520767	Universal Air Solenoid Relay Driver 15	6	Universal Air Solenoid Relay Driver 15 Over Current	Short To Ground or Defective Solenoid			Univ_Air_Relay_Driver_15
33	520768	Universal Air Solenoid Relay Driver 16	5	Universal Air Solenoid Relay Driver 16 Under Current Or Open Circuit	Open Circuit or Defective Solenoid			Univ_Air_Relay_Driver_16
33	520768	Universal Air Solenoid Relay Driver 16	6	Universal Air Solenoid Relay Driver 16 Over Current	Short To Ground or Defective Solenoid			Univ_Air_Relay_Driver_16
33	520769	BUS Spare Relay Driver One	5	Spare Relay Driver One Under Current Or Open Circuit	Open Circuit			BUS_Spare_Relay_Driver_One_Cmd
33	520769	BUS Spare Relay Driver One	6	Spare Relay Driver One Over Current	Short To Ground			BUS_Spare_Relay_Driver_One_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520770	BUS Spare Relay Driver Two	5	Spare Relay Driver Two Under Current Or Open Circuit	Open Circuit			BUS_Spare_Relay_Driver_Two_Cmd
33	520770	BUS Spare Relay Driver Two	6	Spare Relay Driver Two Over Current	Short To Ground			BUS_Spare_Relay_Driver_Two_Cmd
33	520771	PPE3 AC Module Output Current	6	AC Module has shutdown due to overload condition.	A Surge may have occurred for a while in the Vehicle AC bus for a long time (The inverter supplies additional current to the load).	An Overload condition has been detected in the AC module and the Vehicle AC bus is shutdown.		
33	520772	PPE3 Fuse Open	31	PPE3 Fuse Open.	Load exceeded rating.	PPE3 module Fuse is Open.		
33	520773	PPE3 AC Module Temperature	0	AC module over temperature condition.	An overcurrent condition in the Vehicle AC Bus might have caused an over temperature.	An Over temperature fault has occurred and the source of the fault is the AC module (inverter high voltage bus).		
33	520774	PPE3 DC Module Temperature	0	DC module over temperature condition.	An overcurrent condition in the Vehicle DC Bus might have caused an over temperature.	An Over Temperature fault has occurred and the source of the fault is the DC regulator (Vehicle Battery Bus).		
33	520775	Anti Theft Ignition Relay	5	Anti Theft Ignition Relay Under Current Or Open Circuit	Open circuit in Anti Theft Ignition Circuit		1601-E4	Anti_Theft_Ignition_Relay
33	520775	Anti Theft Ignition Relay	6	Anti Theft Ignition Relay over current	Short to Ground in Anti Theft Ignition Circuit		1601-E4	Anti_Theft_Ignition_Relay
33	520776	Anti Theft Engine Stop Switch	2	Anti Theft Engine Stop Switch Error	Faulty Switch Actuator or Microswitch for Anti Theft Engine Stop Switch			Anti_Theft_Engine_Stop_Switch

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520777	Anti Theft Switch 0	2	Anti Theft Switch 0 Error	Faulty Switch Actuator or Microswitch for Anti Theft Switch 0			Anti_Theft_Switch_0
33	520778	Anti Theft Switch 1	2	Anti Theft Switch 1 Error	Faulty Switch Actuator or Microswitch for Anti Theft Switch 1			Anti_Theft_Switch_1
33	520779	Anti Theft Switch 2	2	Anti Theft Switch 2 Error	Faulty Switch Actuator or Microswitch for Anti Theft Switch 2			Anti_Theft_Switch_2
33	520780	Anti Theft Switch 3	2	Anti Theft Switch 3 Error	Faulty Switch Actuator or Microswitch for Anti Theft Switch 3			Anti_Theft_Switch_3
33	520781	Anti Theft Switch 4	2	Anti Theft Switch 4 Error	Faulty Switch Actuator or Microswitch for Anti Theft Switch 4			Anti_Theft_Switch_4
33	520788	TEG Aux Relay Driver 1	5	TEG Aux Relay Driver Output 1 Under Current Or Open Circuit	Current below normal or open circuit		1601-E16	TEG_Aux_Relay_Driver_1_RD13_Cmd
33	520788	TEG Aux Relay Driver 1	6	TEG Aux Relay Driver Output 1 Overcurrent	Current above normal or grounded circuit		1601-E16	TEG_Aux_Relay_Driver_1_RD13_Cmd
33	520799	TEG Aux Relay Driver 2	5	TEG Aux Relay Driver Output 2 Under Current Or Open Circuit	Current below normal or open circuit		1601-E12	TEG_Aux_Relay_Driver_2_RD14_Cmd
33	520799	TEG Aux Relay Driver 2	6	TEG Aux Relay Driver Output 2 Overcurrent	Current above normal or grounded circuit		1601-E12	TEG_Aux_Relay_Driver_2_RD14_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520800	Transmission Economy Mode output	5	Transmission Economy Mode Relay Driver Output Under Current Or Open Circuit	Current below normal or open circuit		1601-F11	Econ_Mode_Enable_Cmd
33	520800	Transmission Economy Mode output	6	Transmission Economy Mode Relay Driver Output Overcurrent	Current above normal or grounded circuit		1601-F11	Econ_Mode_Enable_Cmd
33	520801	Transmission Auto Neutral Output	5	Transmission Auto Neutral Relay Driver Output Under Current Or Open Circuit	Current below normal or open circuit		1601-E3	Auto_Neutl_Relay_Cmd
33	520801	Transmission Auto Neutral Output	6	Transmission Auto Neutral Relay Driver Output Overcurrent	Current above normal or grounded circuit		1601-E3	Auto_Neutl_Relay_Cmd
33	520802	Aux Air Susp Solenoid Command	5	Aux Air Suspension Solenoid Under Current or Open Circuit	Open Circuit or Defective Solenoid		1602-E12	Aux_Air_Susp_Solenoid_Cmd
33	520802	Aux Air Susp Solenoid Command	6	Aux Air Suspension Solenoid output Over Current	Short To Ground or Defective Solenoid		1602-E12	Aux_Air_Susp_Solenoid_Cmd
33	520803	Park Brake Relay Command	5	Park Brake Relay Under Current or Open Circuit	Open Circuit or Defective Solenoid		1601-E7 1601-F1 (BUS)	Park_Brake_Relay_Cmd
33	520803	Park Brake Relay Command	6	Park Brake Relay Over Current	Short To Ground or Defective Solenoid		1601-E7 1601-F1 (BUS)	Park_Brake_Relay_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520804	RKE Option Door Pod Not Present	14	Missing Remote Keyless entry door pod	Expected RKE door pod is not present or in the wrong slot or bad door pod harness	Not available	Not available	RKE_Option_Front_Passenger_Byte6
33	520806	Fifth Wheel Jaw Unlock Sol2 Command	5	Fifth Wheel Jaw Unlock Solenoid2 output Under Current or Open Circuit	Open Circuit or Defective Solenoid			Fifth_Wheel_Jaw_Unlock_Sol2_Cmd
33	520806	Fifth Wheel Jaw Unlock Sol2 Command	6	Fifth Wheel Jaw Unlock Solenoid2 output Overcurrent	Short To Ground or Defective Solenoid			Fifth_Wheel_Jaw_Unlock_Sol2_Cmd
33	520807	Engine RPM Interrupt Output	5	Engine RPM Interrupt Relay Driver Output Under Current Or Open Circuit	Current below normal or open circuit		1601-F3	Engine_RPM_Interrupt
33	520807	Engine RPM Interrupt Output	6	Engine RPM Interrupt Relay Driver Output Overcurrent	Current above normal or grounded circuit		1601-F3	Engine_RPM_Interrupt
33	520813	Aux_Relay_Driver_3	5	Relay Driver 3 Undercurrent	Open in Relay Driver 3 Circuit		1601-E3	Aux_Relay_Driver_3
33	520813	Aux_Relay_Driver_3	6	Relay Driver 3 Overcurrent	Short To Ground or Overload in Relay Driver 3 Output Circuit		1601-E3	Aux_Relay_Driver_3
33	520814	Aux_Relay_Driver_4	5	Relay Driver 4 Undercurrent	Open in Relay Driver 4 Circuit		1601-E4	Aux_Relay_Driver_4
33	520814	Aux_Relay_Driver_4	6	Relay Driver 4 Overcurrent	Short To Ground or Overload in Relay Driver 4 Output Circuit		1601-E4	Aux_Relay_Driver_4
33	520815	Sixth Gear Disable Relay	5	Sixth Speed Disable Relay is Undercurrent or Open Circuit	Open Circuit on the Sixth Gear Disable Relay		1601-E4	
33	520815	Sixth Gear Disable Relay	6	Sixth Speed Disable Relay is Overcurrent	Short to Battery on the Sixth Speed Disable Relay			

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520816	Sixth Gear Disable LED	5	Sixth Gear Disable LED Relay Driver Output is Under Current or Open Circuit	Open Circuit on the Sixth Gear Disable LED Relay Driver			
33	520816	Sixth Gear Disable LED	6	Sixth Gear Disable LED Relay Driver Output is Over Current	Short to Battery on the Sixth Speed Disable LED Relay			
33	520817	Sixth Gear Disable Switch	2	Sixth Speed Disable Switch status is invalid	Fault Switch Actuator or Micro switch for Sixth Gear Disable Switch			
33	520818	HEV ePTO Pressure Feedback	0	HEV ePTO Pressure Feedback Sensor reading above normal range	HEV ePTO Pressure Feedback Shorted High or faulty sensor system			HEV_ePTO_Pressure_Feedback_Raw
33	520818	HEV ePTO Pressure Feedback	1	HEV ePTO Pressure Feedback Sensor reading below normal range	HEV ePTO Pressure Feedback Shorted to Ground or Open Circuit or faulty sensor system			HEV_ePTO_Pressure_Feedback_Raw
33	520819	Universal Air Solenoid Relay Driver 1	5	Universal Air Solenoid Relay Driver 1 Under Current Or Open Circuit	Open Circuit or Defective Solenoid			Univ_Air_Relay_Driver_1
33	520819	Universal Air Solenoid Relay Driver 1	6	Universal Air Solenoid Relay Driver 1 Over Current	Short To Ground or Defective Solenoid			Univ_Air_Relay_Driver_1
33	520820	Wig-Wag Switch	2	Wig-Wag Switch Error	Faulty Switch Actuator or Microswitch for Wig-Wag Switch			Wig_Wag_Enable_Switch

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520822	Remote Condenser Electric Fan Control A	5	Electric Fan A output Under Current or Open Circuit	Open Circuit in Electric Fan A output	Not available	Not available	RMC_Fan_Control_A_Cmd
33	520822	Remote Condenser Electric Fan Control A	6	Electric Fan A output Short-Circuit	Short circuit detected in Electric Fan A output	Electric Fan A can be configured for two different outputs: Low Side Driver RD4 - Fault is reported when Short to Battery condition is detected High Side Driver RD31 - Fault is reported when Short to Ground condition is Detected	Not available	RMC_Fan_Control_A_Cmd
33	520823	Remote Condenser Electric Fan Control B	5	Electric Fan B output Under Current or Open Circuit	Open Circuit in Electric Fan B output	Not available	Not available	RMC_Fan_Control_B_Cmd
33	520823	Remote Condenser Electric Fan Control B	6	Electric Fan B output Short-Circuit	Short circuit detected in Electric Fan B output	Electric Fan B can be configured for two different outputs: Low Side Driver RD7 - Fault is reported when Short to Battery condition is detected High Side Driver RD32 - Fault is reported when Short to Ground condition is Detected	Not available	RMC_Fan_Control_B_Cmd
33	520839	Transfer Case Output Shaft Odometer Shutoff Relay	5	Transfer Case Output Shaft Odometer Shutoff Relay Undercurrent	Open in Odometer Shutoff Relay Circuit			SSpd_Xfer_Case_Odo_Shutoff_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520839	Transfer Case Output Shaft Odometer Shutoff Relay	6	Transfer Case Output Shaft Odometer Shutoff Relay Overcurrent	Short or Overload in odometer Shutoff Relay Circuit		1601-E4	SSpd_Xfer_Case_Odo_Shutoff_Cmd
33	520864	Rear Axle Load Distribution Switch	2	Rear Axle Load Distribution Switch Error	Faulty Switch Actuator or Microswitch for Rear Axle Load Distribution Switch	Not available	Not available	Rear_Axle_Load_Distribution_Switch
33	520865	Rear Axle Load Distribution Solenoid A	5	Rear Axle Load Distribution A Relay Under Current Or Open Circuit	Open Circuit or Defective Solenoid	Not available	Not available	Axle_Load_Distribution_Solenoid_A_Cmd
33	520865	Rear Axle Load Distribution Solenoid A	6	Rear Axle Load Distribution A Relay Short To Ground	Short To Ground or Defective Solenoid	Not available	Not available	Axle_Load_Distribution_Solenoid_A_Cmd
33	520866	Rear Axle Load Distribution Solenoid B	5	Rear Axle Load Distribution B Relay Under Current Or Open Circuit	Open Circuit or Defective Solenoid	Not available	Not available	Axle_Load_Distribution_Solenoid_B_Cmd
33	520866	Rear Axle Load Distribution Solenoid B	6	Rear Axle Load Distribution B Relay Short To Ground	Short To Ground or Defective Solenoid	Not available	Not available	Axle_Load_Distribution_Solenoid_B_Cmd
33	520867	Snow Valve Motor Relays	6	Snow Valve Motor Relays Output Over Current	Short to Ground or Defective Relay(s)	Not available	Not available	Snow_Valve_Motor_Cmd
33	520868	HVAC Condenser Pusher Fan Relay	5	HVAC Condenser Pusher Fan Output Under Current or Open Circuit	Open Circuit on HVAC Condenser Pusher Fan circuit	Not available	Not available	HVAC_Pusher_Fan_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520868	HVAC Condenser Pusher Fan Relay	6	HVAC Condenser Pusher Fan Output Over Current	Short to Ground in the HVAC Condenser Pusher Fan circuit	Not available	Not available	HVAC_Pusher_Fan_Cmd
33	520869	Trailer BO Stop	6	Trailer BO Stop Overcurrent	Current above normal or grounded circuit	Not available	1601-F9	TRLR_BO_Stop_Cmd
33	520870	Trailer BO Marker	6	Trailer BO Marker Overcurrent	Current above normal or grounded circuit	Not available	1601-E14	TRLR_BO_Marker_Cmd
33	520871	BO Ignition_1	6	BO Ignition_1 Overcurrent	Current above normal or grounded circuit	Not available	1601-E16	BO_Ignition_1_Cmd
33	520872	BO Ignition_2	6	BO Ignition_2 Overcurrent	Current above normal or grounded circuit	Not available	1601-F1	BO_Ignition_2_Cmd
33	520873	BO Ignition_3	6	BO Ignition_3 Overcurrent	Current above normal or grounded circuit	Not available	1601-E1	BO_Ignition_3_Cmd
33	520874	BO Ignition_4	6	BO Ignition_4 Overcurrent	Current above normal or grounded circuit	Not available	1601-E2	BO_Ignition_4_Cmd
33	520875	Winch IN / OUT Switch	2	Winch IN OUT Switch Error	Faulty Switch Actuator or Microswitch for Winch IN OUT Switch	Not available	Not available	Winch_Dir_In_Switch
33	520876	Winch IN Command	5	Winch IN relay driver under current or open circuit	Current below normal or open circuit	Not available	Not available	Winch_In_Cmd
33	520876	Winch IN Command	6	Winch IN relay driver over current	Current above normal or grounded circuit	Not available	Not available	Winch_In_Cmd
33	520877	Winch OUT Command	5	Winch OUT relay driver under current or open circuit	Current below normal or open circuit	Not available	Not available	Winch_Out_Cmd
33	520877	Winch OUT Command	6	Winch OUT relay driver over current	Current above normal or grounded circuit	Not available	Not available	Winch_Out_Cmd
33	520878	NEC Park Brake Command	5	NEC Park Brake Command is Under Current Or Open Circuit	Open Circuit or Defective Solenoid	Not available	Not available	NEC_Park_Brake_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520878	NEC Park Brake Command	6	NEC Park Brake Command is overcurrent	Short To Ground or Defective Solenoid	Not available	Not available	NEC_Park_Brake_Cmd
33	520879	NEC Service Door Command	5	NEC Service Door Command is Under Current Or Open Circuit	Open Circuit or Defective Solenoid	Not available	Not available	NEC_Service_Door_Cmd
33	520879	NEC Service Door Command	6	NEC Service Door Command is overcurrent	Short To Ground or Defective Solenoid	Not available	Not available	NEC_Service_Door_Cmd
33	520880	NEC Post Trip Inspection Command	5	NEC Post Trip Inspection Command is Under Current Or Open Circuit	Open Circuit or Defective Solenoid	Not available	Not available	NEC_PTI_Cmd
33	520880	NEC Post Trip Inspection Command	6	NEC Post Trip Inspection Command is overcurrent	Short To Ground or Defective Solenoid	Not available	Not available	NEC_PTI_Cmd
33	520881	TEM Interlocked Switch Relay 1	5	TEM Switch Interlocked Output Circuit 1 undercurrent	Open circuit in TEM Interlocked circuit 1	Not available	Not available	TEM_Aux1_w_Interlocks_RD_Output_Cmd
33	520881	TEM Interlocked Switch Relay 1	6	TEM Switch Interlocked Output Circuit 1 overcurrent	Short circuit in TEM Interlocked circuit 1	Not available	Not available	TEM_Aux1_w_Interlocks_RD_Output_Cmd
33	520882	TEM Interlocked Switch Relay 2	5	TEM Switch Interlocked Output Circuit 2 undercurrent	Open circuit in TEM Interlocked circuit 2	Not available	Not available	TEM_Aux2_w_Interlocks_RD_Output_Cmd
33	520882	TEM Interlocked Switch Relay 2	6	TEM Switch Interlocked Output Circuit 2 overcurrent	Short circuit in TEM Interlocked circuit 2	Not available	Not available	TEM_Aux2_w_Interlocks_RD_Output_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520883	Transfer Case Low Indicator	5	Transfer case low indicator high side output exhibits an undercurrent condition or is open	Not available	Not available	1601-F7	Xfer_Case_Low_Ind
33	520883	Transfer Case Low Indicator	6	Transfer case low indicator high side output exhibits an overcurrent condition or is short to ground	Not available	Not available	1601-F7	Xfer_Case_Low_Ind
33	520884	Transfer Case Neutral Indicator	5	Transfer case neutral indicator high side output exhibits an undercurrent condition or is open	Not available	Not available	1601-F6	Xfer_Case_Neutral_Ind
33	520884	Transfer Case Neutral Indicator	6	Transfer case neutral indicator high side output exhibits an overcurrent condition or is short to ground	Not available	Not available	1601-F6	Xfer_Case_Neutral_Ind
33	520885	Windshield Heat Left Output	5	Windshield Heat Left output Under Current or Open Circuit	Open Circuit in Windshield Heat Left Output	Not available	Not available	Windshield_Heat_Left_Cmd
33	520885	Windshield Heat Left Output	6	Windshield Heat Left Output Short-Circuit	Short Circuit detected in Windshield Heat Left Output	Not available	Not available	Windshield_Heat_Left_Cmd
33	520886	Windshield Heat Right Output	5	Windshield Heat Right Output Under Current or Open Circuit	Open Circuit detected in Windshield Heat Right Output	Not available	Not available	Windshield_Heat_Right_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520886	Windshield Heat Right Output	6	Windshield Heat Right Output Short-Circuit	Short Circuit detected in Windshield Heat Right Output	Not available	Not available	Windshield_Heat_Right_Cmd
33	520887	Windshield Heat Left Temp Sensor	0	Left Windshield Heat Temperature Sensor reading above normal range	Left Windshield Heat Temperature Sensor Shorted High or Open Circuit or faulty sensor system	Not available	Not available	Left_Windshield_Temperature_Raw_Signal
33	520887	Windshield Heat Left Temp Sensor	1	Left Windshield Heat Temperature Sensor reading below normal range	Left Windshield Heat Temperature Sensor Short to Ground or faulty sensor system	Not available	Not available	Left_Windshield_Temperature_Raw_Signal
33	520888	Windshield Heat Right Temp Sensor	0	Right Windshield Heat Temperature Sensor reading above normal range	Right Windshield Heat Temperature Sensor Shorted High or Open Circuit or faulty sensor system	Not available	Not available	Right_Windshield_Temperature_Raw_Signal
33	520888	Windshield Heat Right Temp Sensor	1	Right Windshield Heat Temperature Sensor reading below normal range	Right Windshield Heat Temperature Sensor Short to Ground or faulty sensor system	Not available	Not available	Right_Windshield_Temperature_Raw_Signal
33	520889	Relay Driver 9, Channel 1	13	Connector J4 Pin E11 has a load on this pin that has been configured as unused	Connector J4 Pin E11 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD9
33	520890	Relay Driver 10, Channel 2	13	Connector J4 Pin E10 has a load on this pin that has been configured as unused	Connector J4 Pin E10 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD10

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520891	Relay Driver 11, Channel 3	13	Connector J4 Pin E15 has a load on this pin that has been configured as unused	Connector J4 Pin E15 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD11
33	520892	Relay Driver 12, Channel 4	13	Connector J4 Pin E14 has a load on this pin that has been configured as unused	Connector J4 Pin E14 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD12
33	520893	Relay Driver 13, Channel 5	13	Connector J4 Pin E16 has a load on this pin that has been configured as unused	Connector J4 Pin E16 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD13
33	520894	Relay Driver 14, Channel 6	13	Connector J4 Pin E12 has a load on this pin that has been configured as unused	Connector J4 Pin E12 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD14
33	520895	Relay Driver 15, Channel 7	13	Connector J4 Pin E13 has a load on this pin that has been configured as unused	Connector J4 Pin E13 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD15
33	520896	Relay Driver 16, Channel 8	13	Connector J4 Pin E9 has a load on this pin that has been configured as unused	Connector J4 Pin E9 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD16

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520897	Relay Driver 17, Channel 9	13	Connector J4 Pin F6 has a load on this pin that has been configured as unused	Connector J4 Pin F6 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD17
33	520898	Relay Driver 18, Channel 10	13	Connector J4 Pin F7 has a load on this pin that has been configured as unused	Connector J4 Pin F7 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD18
33	520899	Relay Driver 19, Channel 11	13	Connector J4 Pin F2 has a load on this pin that has been configured as unused	Connector J4 Pin F2 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD19
33	520900	Relay Driver 20, Channel 12	13	Connector J4 Pin F3 has a load on this pin that has been configured as unused	Connector J4 Pin F3 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD20
33	520901	Relay Driver 21, Channel 13	13	Connector J4 Pin F1 has a load on this pin that has been configured as unused	Connector J4 Pin F1 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD21
33	520902	Relay Driver 22, Channel 14	13	Connector J4 Pin F5 has a load on this pin that has been configured as unused	Connector J4 Pin F5 has a load on this pin that has been configured as unused	Not available	Not available	P_SSC_RD22

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520903	Relay Driver 23, Channel 15	13	Connector J4 Pin F4 has a load on this pin that has been configured as unused	Connector J4 Pin F4 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD23
33	520904	Relay Driver 24, Channel 16	13	Connector J4 Pin F8 has a load on this pin that has been configured as unused	Connector J4 Pin F8 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD24
33	520905	Relay Driver 25, Channel 17	13	Connector J4 Pin F10 has a load on this pin that has been configured as unused	Connector J4 Pin F10 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD25
33	520906	Relay Driver 26, Channel 18	13	Connector J4 Pin F11 has a load on this pin that has been configured as unused	Connector J4 Pin F11 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD26
33	520907	Relay Driver 27, Channel 19	13	Connector J4 Pin F14 has a load on this pin that has been configured as unused	Connector J4 Pin F14 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD27
33	520908	Relay Driver 28, Channel 20	13	Connector J4 Pin F15 has a load on this pin that has been configured as unused	Connector J4 Pin F15 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD28

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520909	Relay Driver 29, Channel 21	13	Connector J4 Pin F13 has a load on this pin that has been configured as unused	Connector J4 Pin F13 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD29
33	520910	Relay Driver 30, Channel 22	13	Connector J4 Pin F9 has a load on this pin that has been configured as unused	Connector J4 Pin F9 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD30
33	520911	Relay Driver 31, Channel 23	13	Connector J4 Pin F16 has a load on this pin that has been configured as unused	Connector J4 Pin F16 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD31
33	520912	Relay Driver 32, Channel 24	13	Connector J4 Pin F12 has a load on this pin that has been configured as unused	Connector J4 Pin F12 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD32
33	520913	Relay Driver 1, Channel 25	13	Connector J4 Pin E7 has a load on this pin that has been configured as unused	Connector J4 Pin E7 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD1
33	520914	Relay Driver 2, Channel 26	13	Connector J4 Pin E6 has a load on this pin that has been configured as unused	Connector J4 Pin E6 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD2

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520915	Relay Driver 3, Channel 27	13	Connector J4 Pin E3 has a load on this pin that has been configured as unused	Connector J4 Pin E3 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD3
33	520916	Relay Driver 4, Channel 28	13	Connector J4 Pin E2 has a load on this pin that has been configured as unused	Connector J4 Pin E2 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD4
33	520917	Relay Driver 5, Channel 29	13	Connector J4 Pin E4 has a load on this pin that has been configured as unused	Connector J4 Pin E4 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD5
33	520918	Relay Driver 6, Channel 30	13	Connector J4 Pin E8 has a load on this pin that has been configured as unused	Connector J4 Pin E8 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD6
33	520919	Relay Driver 7, Channel 31	13	Connector J4 Pin E1 has a load on this pin that has been configured as unused	Connector J4 Pin E1 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD7
33	520920	Relay Driver 8, Channel 32	13	Connector J4 Pin E5 has a load on this pin that has been configured as unused	Connector J4 Pin E5 is drawing current and it is configured as unused check configuration and or wiring harness	Not available	Not available	P_SSC_RD8

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520840	Switch 12-Pack Location 7	13	Unexpected switch in 12-pack (MID 5) bottom row position 1 from left (Switch 7 of 12)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_5_254_164_2_1_1
33	520841	Switch 12-Pack Location 8	13	Unexpected switch in 12-pack (MID 5) bottom row position 2 from left (Switch 8 of 12)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_5_254_164_2_1_3
33	520842	Switch 12-Pack Location 9	13	Unexpected switch in 12-pack (MID 5) bottom row position 3 from left (Switch 9 of 12)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_5_254_164_2_1_5
33	520843	Switch 12-Pack Location 10	13	Unexpected switch in 12-pack (MID 5) bottom row position 4 from left (Switch 10 of 12)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_5_254_164_2_1_7
33	520844	Switch 12-Pack Location 11	13	Unexpected switch in 12-pack (MID 5) bottom row position 5 from left (Switch 11 of 12)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_5_254_164_2_2_1
33	520845	Switch 12-Pack Location 12	13	Unexpected switch in 12-pack (MID 5) bottom row position 6 from left (Switch 12 of 12)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_5_254_164_2_2_3

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520846	Switch 12-Pack Location 1	13	Unexpected switch in 12-pack (MID 6) top row position 1 from left (Switch 1 of 12)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_6_254_164_2_1_1
33	520847	Switch 12-Pack Location 2	13	Unexpected switch in 12-pack (MID 6) top row position 2 from left (Switch 2 of 12)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_6_254_164_2_1_3
33	520848	Switch 12-Pack Location 3	13	Unexpected switch in 12-pack (MID 6) top row position 3 from left (Switch 3 of 12)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_6_254_164_2_1_5
33	520849	Switch 12-Pack Location 4	13	Unexpected switch in 12-pack (MID 6) top row position 4 from left (Switch 4 of 12)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_6_254_164_2_1_7
33	520850	Switch 12-Pack Location 5	13	Unexpected switch in 12-pack (MID 6) top row position 5 from left (Switch 5 of 12)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_6_254_164_2_2_1
33	520851	Switch 12-Pack Location 6	13	Unexpected switch in 12-pack (MID 6) top row position 6 from left (Switch 6 of 12)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_6_254_164_2_2_3
33	520852	Switch 6-Pack #2 Location 1	13	Unexpected switch in switchpack 2 (MID 7) position 1 from left (Switch 1 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_7_254_164_2_1_1

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520853	Switch 6-Pack #2 Location 2	13	Unexpected switch in switchpack 2 (MID 7) position 2 from left (Switch 2 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_7_254_164_2_1_3
33	520854	Switch 6-Pack #2 Location 3	13	Unexpected switch in switchpack 2 (MID 7) position 3 from left (Switch 3 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_7_254_164_2_1_5
33	520855	Switch 6-Pack #2 Location 4	13	Unexpected switch in switchpack 2 (MID 7) position 4 from left (Switch 4 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_7_254_164_2_1_7
33	520856	Switch 6-Pack #2 Location 5	13	Unexpected switch in switchpack 2 (MID 7) position 5 from left (Switch 5 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_7_254_164_2_2_1
33	520857	Switch 6-Pack #2 Location 6	13	Unexpected switch in switchpack 2 (MID 7) position 6 from left (Switch 6 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_7_254_164_2_2_3
33	520858	Switch 6-Pack #1 Location 1	13	Unexpected switch in switchpack 1 (MID 15) position 1 from left (Switch 1 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_15_254_164_2_1_1

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520859	Switch 6-Pack #1 Location 2	13	Unexpected switch in switchpack 1 (MID 15) position 2 from left (Switch 2 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_15_254_164_2_1_3
33	520860	Switch 6-Pack #1 Location 3	13	Unexpected switch in switchpack 1 (MID 15) position 3 from left (Switch 3 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_15_254_164_2_1_5
33	520861	Switch 6-Pack #1 Location 4	13	Unexpected switch in switchpack 1 (MID 15) position 4 from left (Switch 4 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_15_254_164_2_1_7
33	520862	Switch 6-Pack #1 Location 5	13	Unexpected switch in switchpack 1 (MID 15) position 5 from left (Switch 5 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_15_254_164_2_2_1
33	520863	Switch 6-Pack #1 Location 6	13	Unexpected switch in switchpack 1 (MID 15) position 6 from left (Switch 6 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_15_254_164_2_2_3
33	520922	Switch 6-Pack #3 Location 1	13	Unexpected switch in switchpack 3 (MID 3) position 1 from left (Switch 1 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_3_254_164_2_1_1

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520923	Switch 6-Pack #3 Location 2	13	Unexpected switch in switchpack 3 (MID 3) position 2 from left (Switch 2 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_3_254_164_2_1_3
33	520924	Switch 6-Pack #3 Location 3	13	Unexpected switch in switchpack 3 (MID 3) position 3 from left (Switch 3 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_3_254_164_2_1_5
33	520925	Switch 6-Pack #3 Location 4	13	Unexpected switch in switchpack 3 (MID 3) position 4 from left (Switch 4 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_3_254_164_2_1_7
33	520926	Switch 6-Pack #3 Location 5	13	Unexpected switch in switchpack 3 (MID 3) position 5 from left (Switch 5 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_3_254_164_2_2_1
33	520927	Switch 6-Pack #3 Location 6	13	Unexpected switch in switchpack 3 (MID 3) position 6 from left (Switch 6 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1708IN_3_254_164_2_2_3
33	520928	Daytime Running Light Tell Tale Command	5	DRL Tell Tale Relay Command is Under Current Or Open Circuit	Open Circuit or Defective Solenoid	Not available	Not available	DRL_Tell_Tale_Relay_Cmd
33	520928	Daytime Running Light Tell Tale Command	6	DRL Tell Tale Relay Command is Overcurrent	Short To Ground or Defective Solenoid	Not available	Not available	DRL_Tell_Tale_Relay_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520929	AGSP Switch Location 1	13	Unexpected switch in AGSP position 1 from left (Switch 1 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1939IN_132_61217_33_D_4_5
33	520930	AGSP Switch Location 2	13	Unexpected switch in AGSP position 2 from left (Switch 2 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1939IN_132_61217_33_D_4_7
33	520931	AGSP Switch Location 3	13	Unexpected switch in AGSP position 3 from left (Switch 3 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1939IN_132_61217_33_D_5_1
33	520932	AGSP Switch Location 4	13	Unexpected switch in AGSP position 4 from left (Switch 4 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1939IN_132_61217_33_D_5_3
33	520933	AGSP Switch Location 5	13	Unexpected switch in AGSP position 5 from left (Switch 5 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1939IN_132_61217_33_D_5_5
33	520934	AGSP Switch Location 6	13	Unexpected switch in AGSP position 6 from left (Switch 6 of 6)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1939IN_132_61217_33_D_5_7
33	520935	Cluster Switch Location 1	13	Unexpected switch in Cluster position 1 from left (Switch 1 of 2)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1939IN_23_61184_33_D_2_2

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520936	Cluster Switch Location 2	13	Unexpected switch in Cluster position 2 from left (Switch 2 of 2)	Switch actuator installed or bad microswitch in location configured as empty	Not available	Not available	P_J1939IN_23_61184_33_D_2_4
33	520937	TSS Module Power Control	5	TSS Module Power Control Under Current	Open Circuit or Under Current in TSS Module Power Control Circuit	Not available	Not available	TSS_Module_Power_Cmd
33	520937	TSS Module Power Control	6	TSS Module Power Control Overcurrent	Short To Ground or Overload in TSS Module Power Control Circuit	Not available	Not available	TSS_Module_Power_Cmd
33	520938	User Activated Data Logger	2	User Activated Data Logger switch error	Faulty Switch Actuator or Microswitch for User Activated Data Logger switch	Not available	Not available	Data_Logger_Enable
33	520939	Air Brake Pressure Ind Relay Driver	5	Air Brake Pressure Indicator Command is Under Current or Open Circuit	Open Circuit or Defective Solenoid	Not available	Not available	Air_Brake_Pressure_Ind_Cmd
33	520939	Air Brake Pressure Ind Relay Driver	6	Air Brake Pressure Indicator Command is Overcurrent	Short to ground or defective solenoid	Not available	Not available	Air_Brake_Pressure_Ind_Cmd
33	520940	Power Adjustable Pedals Enable Relay	5	Power Adjustable Pedals Enable Relay Under Current Or Open Circuit	Open Circuit or Defective Solenoid	Not available	Not available	Adj_Pedal_Enable_Cmd

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
33	520940	Power Adjustable Pedals Enable Relay	6	Power Adjustable Pedals Enable Relay Short To Ground	Short To Ground or Defective Solenoid	Not available	Not available	Adj_Pedal_Enable_Cmd
33	520941	Hydromax Pump Motor Relay Driver	5	Current Below Normal or Open Circuited	Current Below Normal or Open Circuited	Not available	Not available	Hymx_Pump_Relay_Cmd
33	520941	Hydromax Pump Motor Relay Driver	6	Current Above Normal or Short Circuited	Current Above Normal or Short Circuited	Not available	Not available	Hymx_Pump_Relay_Cmd
58	109	Coolant Pressure	14	High Refrigerant Pressure	High refrigerant pressure in system or pressure sensor unplugged or faulty Pressure sensor			
58	168	Electrical Potential (Voltage)	3	Battery Voltage High	Battery voltage above 16VDC			
58	168	Electrical Potential (Voltage)	4	Battery Voltage Low	Battery voltage below 12.1VDC			
58	1547	A/C Evaporator Temperature	0	Duct Inlet Sensor High	Recirc sensor wire shorted to power or Recirc sensor missing or open circuit or faulty Recirc sensor			
58	1547	A/C Evaporator Temperature	1	Duct Inlet sensor Low	Recirc sensor wire shorted to ground or fault Recirc sensor			

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
58	1548	HVAC Duct Temperature	3	Duct temperature sensor voltage high	Duct temperature sensor wire shorted to power or open circuit or faulty sensor			
58	1548	HVAC Duct Temperature	4	Duct temperature sensor voltage low	Duct temperature sensor shorted to ground or faulty sensor			
58	2058	Source Address 58	9	Rear HVAC Data Link Communication Failure	Faulty Rear HVAC or Body Builder Data Link			
58	520210	HVAC Blower Output	3	Blower output circuit over voltage	Voltage above normal, or shorted to high source			
58	520210	HVAC Blower Output	4	Blower output circuit under voltage	Voltage below normal, or shorted to low source			
58	520210	HVAC Blower Output	6	Blower output short circuit	Current above normal or grounded circuit			
58	520211	HVAC actuator position	7	Actuator position not responding	Mechanical system not responding or out of adjustment			
58	520212	HVAC Dimmer Output	3	Dimmer output voltage high	Voltage above normal, or shorted to high source			
58	520212	HVAC Dimmer Output	4	Dimmer output voltage low	Voltage below normal, or shorted to low source			

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
58	520213	Evaporator Sensor	3	Evaporator Sensor High	Voltage above normal, or shorted to high source	Evaporator Sensor High or short to Battery		
58	520213	Evaporator Sensor	4	Evaporator Sensor Low	Evaporator Sensor Low or bad sensor			
58	520808	No-Idle Compressor Relay	14	No-Idle Compressor Relay open circuit or shorted circuit				
58	520809	No-Idle CHS relay	14	No-Idle Coolant Heater System relay has an open circuit or a shorted circuit				
58	520810	No-Idle Condenser Fan Relay	14	Condenser fan relay has a short or open circuit				
58	520811	No-Idle valve B relay	14	Valve B relay has an open circuit or a short circuit				
58	520812	No-Idle datalink error	9	J1939 Body Buildler Data link error	Abnormal update rate			
132	2023	Gauge Cluster	14	Auxiliary Gauge Switch Pack #3 (address 132), lost communication with ESC.	Loss of drive-train data link.	Loss of communication in excess of 10 seconds.		

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
132	2023	Gauge Cluster	14	Auxiliary Gauge Switch Pack #3 (address 132). Datalink ignition signal does not match the hardwired ignition signal.				
132	2023	Gauge Cluster	14	Auxiliary Gauge Switch Pack #3 (address 132) gauge location 1, sensor fault.		There is a problem with the sensor that provides data for this gauge.		
132	2023	Gauge Cluster	14	Auxiliary Gauge Switch Pack #3 (address 132) gauge location 1, data unavailable.		The data for this gauge should be, but is not available.		
132	2023	Gauge Cluster	14	Auxiliary Gauge Switch Pack #3 (address 132) gauge location 1, data missing.		The data for this gauge is not being transmitted.		
132	2023	Gauge Cluster	14	Auxiliary Gauge Switch Pack #3 (address 132) gauge location 2, sensor fault.		There is a problem with the sensor that provides data for this gauge.		

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
132	2023	Gauge Cluster	14	Auxiliary Gauge Switch Pack #3 (address 132) gauge location 2, data unavailable.		The data for this gauge should be, but is not available.		
132	2023	Gauge Cluster	14	Auxiliary Gauge Switch Pack #3 (address 132) gauge location 2, data missing.		The data for this gauge is not being transmitted.		
132	2023	Gauge Cluster	14	Auxiliary Gauge Switch Pack #3 (address 132) gauge location 3, sensor fault.		There is a problem with the sensor that provides data for this gauge.		
132	2023	Gauge Cluster	14	Auxiliary Gauge Switch Pack #3 (address 132) gauge location 3, data unavailable.		The data for this gauge should be, but is not available.		
132	2023	Gauge Cluster	14	Auxiliary Gauge Switch Pack #3 (address 132) gauge location 3, data missing.		The data for this gauge is not being transmitted.		
132	2033	Communication Loss	9	Loss of data link from ESC	Abnormal update rate			
132	2132	Auxiliary Switch Pack #3	11	Message accessory and switched accessory do not match for AGSP 3	Root cause not known			

SA	SPN	DTC Description	FMI	Message	Cause	Comments	Pins	Logical Signal
132	2132	Auxiliary Switch Pack #3	12	Failure of non-volatile memory or checksum fault in AGSP 3	Bad intelligent device or component			
167	2033	Communication Loss	9	Loss of data link from ESC	Abnormal update rate			
167	2167	Source Address 167	11	Message ignition and switched ignition do not match for SIC 1.	Root cause not known			
167	2167	Source Address 167	12	Failure of non-volatile memory or checksum fault in SIC 1	Bad intelligent device or component			