

	A	B	C	D	E	F	G
1	<b>Central Gateway CAN Fault Codes</b>						
2	<b>SA</b>	<b>SPN</b>	<b>FMI</b>	<b>Conn, Pin</b>	<b>Fault Description</b>	<b>Fault Information</b>	<b>Action</b>
3	37	168	3	pin 1	Electrical potential (voltage) - voltage shorted above normal or shorted to high	The fault is active when voltage detected at the CGW is higher than 16V for 15 seconds or more. The fault becomes historic when voltage detected is less than 16V for 15 seconds or more.	Measure the voltage at pin 1 on the CGW connector. If the voltage detected is greater than BAT voltage troubleshoot circuit 433 between the SAM Cab and CGW for a short to BAT. Check fuse F20 (CGW BAT - 2 amps) on the SAM Cab.
4	37	168	4	pin 1	Electrical potential (voltage) - voltage shorted below normal or shorted to low	The fault is active when voltage detected at the CGW is less than 9V for 15 seconds or more. The fault becomes historic when voltage detected is higher than 9V for 15 seconds or more.	Measure the voltage at pin 1 on the CGW connector. If the voltage detected is not BAT voltage troubleshoot circuit 433 between the SAM Cab and CGW for a short to GND. Check fuse F20 (CGW BAT - 2 amps) on the SAM Cab.
5	37	628	12	-	Program memory - Bad intelligent device or component	<p>A problem has been detected in the CGW memory.</p> <p><b>Vehicle Behavior:</b> Vehicle functions involving the CGW, such as Cruise Control, may be impaired. It may not be possible to establish a ServiceLink connection with the CGW, or with any of the other CAN ECUs.</p>	Disconnect batteries for 1 minute. Reconnect batteries and wait for 6 minutes. Check if the fault is still active. If it is still active, establish a ServiceLink connection. If Central Gateway parameters are available (applies to CGW software version 09.33.000 or later), check that the correct parameter settings are applied. If parameter settings have been confirmed, or if there are no parameters available, and fault remains active, attempt to reflash the Central Gateway. If the fault continues to remain active, replace the CGW.

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6	37	523510	31	pin 18, pin 23	Diagnostic CAN performance	Diagnostic CAN performance failure (communication is not possible) occurs when the Diagnostic CAN High is shorted to GND, the Diagnostic CAN Low is shorted to BAT, or the Diagnostic CAN Low is shorted to Diagnostic CAN High.	Disconnect the batteries and measure the resistance between pins H and J at the diagnostic connector. If 60 ohms is not detected, troubleshoot the Diagnostic CAN datalink wiring or a short to BAT and GND. An open circuit and high shorted to low is also a cause. Troubleshoot the Diagnostic CAN high wiring between diagnostic connector pin H and CGW pin 23. Troubleshoot the Diagnostic CAN low wiring between diagnostic connector pin J and CGW pin 18.
7	37	523511	31	pin 14, pin 19	Cabin CAN performance	Cabin CAN performance failure (communication is not possible) occurs when the Cabin CAN High is shorted to GND, the Cabin CAN Low is shorted to BAT, or the Cabin CAN Low is shorted to Cabin CAN High.	Disconnect the batteries and measure the resistance of the Cabin CAN datalink. If 60 ohms is not detected, troubleshoot the Cabin CAN low datalink for a short to Cabin CAN high. Measure the voltage at Cabin CAN high and Cabin CAN low. If BAT voltage is detected, troubleshoot for a short to GND. If 0V is detected, troubleshoot for a short to BAT. Check the following connector pairs: • SAM Cab conn X13 pin 2 and conn X13 pin 3 • SAM Chassis conn X51 pin 1 and conn X51 pin 2 • MSF conn D, pins 3 and 5
8	37	523512	31	pin 16, pin 21	J1939 CAN performance	J1939 performance failure occurs when the J1939 High is shorted to GND, the J1939 Low is shorted to BAT, the J1939 resistance is not equal to 60 ohms, or the J1939 Low is shorted to J1939 High.	Disconnect the batteries and measure the resistance between J1939+ and J1939-. If the resistance is not 60 ohms, refer to G03.02 — Datalink, J1939 to troubleshoot the J1939 datalink. With the key ON, measure the voltage at J1939+ and J1939-. Troubleshoot the J1939 datalink for a short to BAT or short to GND.

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9	37	523513	31	pin 2, pin 8	J1708 performance	J1708 performance failure occurs when the bus load on the J1708 datalink is too high, or when the CGW has an extremely high processor load due to high traffic on Cabin CAN, J1939, or Diagnostic CAN. A short or open circuit between J1708 (+) and J1708 (-)	Refer to troubleshooting provided in G03.01 — Datalink, J1587/J1708.
10	37	524033	31	-	Lost communication with SAM_CAB	The fault is active when the CGW misses 10 consecutive messages from the SAM Cab (on the Cabin CAN datalink). The fault becomes historic when the CGW receives at least one message from the SAM Cab.  <b>Vehicle Behavior:</b> SAM Cab and SAM Chassis outputs may be	Verify the connection between the Cabin CAN datalink and the SAM Cab. Disconnect the batteries and measure the resistance at SAM Cab conn X13 pin 2 and conn X13 pin 3. If 60 ohms is not detected, troubleshoot the Cabin CAN datalink connection to the SAM Cab. Measure the battery studs for the SAM cab for battery voltage. Check the MEGA fuse, Powertrain PDM fuse F7 (SAM CAB) and battery cables that supply the SAM Cab. Refer to G06.09 — Powernet Management to troubleshoot the SAM Cab for Emergency Power Diagnostics.

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11	37	524049	31	-	Lost communication with MSF	<p>The fault is active when the CGW misses 10 consecutive messages from the MSF (on the Cabin CAN datalink). The fault becomes historic when the CGW receives at least one message from the MSF.</p> <p><b>Vehicle behavior:</b> The headlamps, marker lamps, and clearance lam</p>	<p>Verify the connection between the Cabin CAN datalink and the MSF. Disconnect the batteries and measure the resistance at conn D pins 3 and 5 on the MSF. If 60 ohms is not detected, troubleshoot the Cabin CAN datalink connection to the MSF. Measure the voltage at conn D pin 2 on the MSF for battery voltage. If battery voltage is not detected, troubleshoot circuit 14F between MSF conn D pin 2 and SAM Cab conn X2 pin 12. Troubleshoot the GND circuit between MSF conn D pin 6 and SAM Cab conn X2 pin 2. Check fuse F4 (MSF BAT) on the SAM Cab for continuity</p>
12	37	524071	31	-	Lost communication with SAM Chassis	<p>The fault is active when the CGW misses 10 consecutive messages from the SAM Chassis (on the Cabin CAN datalink). The fault becomes historic when the CGW receives at least one message from the SAM Chassis.</p>	<p>Verify the connection between the Cabin CAN datalink and the SAM Chassis. Disconnect the batteries and measure the resistance at conn X51 pin 1 and conn X51 pin 2 at the SAM Chassis. If 60 ohms is not detected, troubleshoot the Cabin CAN datalink connection to the SAM Chassis. Measure the battery stud for the SAM Chassis for battery voltage. Check the MEGA fuse, Powertrain PDM fuse F6 (SAM CHAS) and battery cables that supply the SAM Chassis. Refer to G06.09 — Powernet Management to troubleshoot the SAM Chassis for Emergency Power Diagnostics.</p>