

Appendix B. SAE Diagnostic Trouble Codes and Cummins Fault Codes

Fault Code	J1939 SPN	J1939 FMI	Lamp Color	Cummins Description
111	629	12	Stop (Solid)	Engine Control Module Critical Internal Failure - Bad intelligent device or component
115	612	2	Stop (Solid)	Engine Magnetic Speed/Position Lost Both of Two Signals - Data erratic, intermittent or incorrect
122	102	3	Warning (Solid)	Intake Manifold 1 Pressure Sensor Circuit - Voltage above normal, or shorted to high source
123	102	4	Warning (Solid)	Intake Manifold 1 Pressure Sensor Circuit - Voltage below normal, or shorted to low source
131	91	3	Stop (Solid)	Accelerator Pedal or Lever Position Sensor 1 Circuit - Voltage above normal, or shorted to high source
132	91	4	Stop (Solid)	Accelerator Pedal or Lever Position Sensor 1 Circuit - Voltage below normal, or shorted to low source
133	974	3	Stop (Solid)	Remote Accelerator Pedal or Lever Position Sensor 1 Circuit - Voltage above normal, or shorted to high source
134	974	4	Stop (Solid)	Remote Accelerator Pedal or Lever Position Sensor 1 Circuit - Voltage below normal, or shorted to low source
143	100	18	Warning (Solid)	Engine Oil Rifle Pressure - Data Valid But Below Normal Operating Range - Moderately Severe Level
144	110	3	Warning (Solid)	Engine Coolant Temperature 1 Sensor Circuit - Voltage above normal, or shorted to high source
145	110	4	Warning (Solid)	Engine Coolant Temperature 1 Sensor Circuit - Voltage below normal, or shorted to low source
146	110	16	Warning (Solid)	Engine Coolant Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
146	110	16	Warning (Solid)	Engine Coolant Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
147	91	1	Stop (Solid)	Accelerator Pedal or Lever Position 1 Sensor Circuit Frequency - Data valid but below normal operational range - Most Severe Level
148	91	0	Stop (Solid)	Accelerator Pedal or Lever Position Sensor 1 - Data valid but above normal operational range - Most Severe Level
151	110	0	Stop (Solid)	Engine Coolant Temperature - Data valid but above normal operational range - Most Severe Level
153	105	3	Warning (Solid)	Intake Manifold 1 Temperature Sensor Circuit - Voltage above normal, or shorted to high source
154	105	4	Warning (Solid)	Intake Manifold 1 Temperature Sensor Circuit - Voltage below normal, or shorted to low source
155	105	0	Stop (Solid)	Intake Manifold 1 Temperature - Data valid but above normal operational range - Most Severe Level
187	3510	4	Warning (Solid)	Sensor Supply 2 Circuit - Voltage below normal, or shorted to low source
195	111	3	Warning (Solid)	Coolant Level Sensor 1 Circuit - Voltage above normal, or shorted to high source
196	111	4	Warning (Solid)	Coolant Level Sensor 1 Circuit - Voltage below normal, or shorted to low source
197	111	18	Warning (Solid)	Coolant Level - Data Valid But Below Normal Operating Range - Moderately Severe Level

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Fault Code	J1939 SPN	J1939 FMI	Lamp Color	Cummins Description
221	108	3	Warning (Solid)	Barometric Pressure Sensor Circuit - Voltage above normal, or shorted to high source
222	108	4	Warning (Solid)	Barometric Pressure Sensor Circuit - Voltage below normal, or shorted to low source
227	3510	3	Warning (Solid)	Sensor Supply 2 Circuit - Voltage above normal, or shorted to high source
234	190	0	Stop (Solid)	Engine Crankshaft Speed/Position - Data valid but above normal operational range - Most Severe Level
235	111	1	Stop (Solid)	Coolant Level - Data valid but below normal operational range - Most Severe Level
238	3511	4	Warning (Solid)	Sensor Supply 3 Circuit - Voltage below normal, or shorted to low source
239	3511	3	Warning (Solid)	Sensor Supply 3 Circuit - Voltage above normal, or shorted to high source
241	84	2	Warning (Solid)	Wheel-Based Vehicle Speed - Data erratic, intermittent or incorrect
242	84	10	Warning (Solid)	Wheel-Based Vehicle Speed Sensor Circuit tampering has been detected - Abnormal rate of change
245	647	4	Warning (Solid)	Fan Control Circuit - Voltage below normal, or shorted to low source
271	1347	4	Warning (Solid)	Engine Fuel Pump Pressurizing Assembly 1 Circuit - Voltage below normal, or shorted to low source
272	1347	3	Warning (Solid)	Engine Fuel Pump Pressurizing Assembly 1 Circuit - Voltage above normal, or shorted to high source
281	1347	7	Warning (Solid)	Engine Fuel Pump Pressurizing Assembly 1 - Mechanical system not responding or out of adjustment
285	639	9	Warning (Solid)	SAE J1939 Multiplexing PGN Timeout Error - Abnormal update rate
286	639	13	Warning (Solid)	SAE J1939 Multiplexing Configuration Error - Out of Calibration
288	974	19	Stop (Solid)	SAE J1939 Multiplexing Remote Accelerator Pedal or Lever Position Sensor System - Received Network Data In Error
292	441	14	Stop (Solid)	Auxiliary Temperature Sensor Input 1 - Special Instructions
293	441	3	Warning (Solid)	Auxiliary Temperature Sensor Input 1 Circuit - Voltage above normal, or shorted to high source
294	441	4	Warning (Solid)	Auxiliary Temperature Sensor Input 1 Circuit - Voltage below normal, or shorted to low source
296	1388	14	Stop (Solid)	Auxiliary Pressure Sensor Input 2 - Special Instructions
322	651	5	Warning (Solid)	Injector Solenoid Driver Cylinder 1 Circuit - Current below normal or open circuit
324	653	5	Warning (Solid)	Injector Solenoid Driver Cylinder 3 Circuit - Current below normal or open circuit
331	652	5	Warning (Solid)	Injector Solenoid Driver Cylinder 2 Circuit - Current below normal or open circuit
332	654	5	Warning (Solid)	Injector Solenoid Driver Cylinder 4 Circuit - Current below normal or open circuit

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Fault Code	J1939 SPN	J1939 FMI	Lamp Color	Cummins Description
343	629	12	Warning (Solid)	Engine Control Module Warning Internal Hardware Failure - Bad intelligent device or component
351	3597	12	Warning (Solid)	Injector Power Supply - Bad intelligent device or component
415	100	1	Stop (Solid)	Engine Oil Rifle Pressure - Data valid but below normal operational range - Most Severe Level
418	97	15	Warning (Blinking)	Water in Fuel Indicator - Data Valid But Above Normal Operating Range - Least Severe Level
428	97	3	Warning (Solid)	Water in Fuel Indicator Sensor Circuit - Voltage above normal, or shorted to high source
429	97	4	Warning (Solid)	Water in Fuel Indicator Sensor Circuit - Voltage below normal, or shorted to low source
431	558	2	Warning (Solid)	Accelerator Pedal or Lever Idle Validation Switch - Data erratic, intermittent or incorrect
432	558	13	Stop (Solid)	Accelerator Pedal or Lever Idle Validation Switch Circuit - Out of Calibration
435	100	2	Warning (Solid)	Engine Oil Rifle Pressure - Data erratic, intermittent or incorrect
441	168	18	Warning (Solid)	Battery 1 Voltage - Data Valid But Below Normal Operating Range - Moderately Severe Level
442	168	16	Warning (Solid)	Battery 1 Voltage - Data Valid But Above Normal Operating Range - Moderately Severe Level
449	157	0	Stop (Solid)	Injector Metering Rail 1 Pressure - Data valid but above normal operational range - Most Severe Level
451	157	3	Warning (Solid)	Injector Metering Rail 1 Pressure Sensor Circuit - Voltage above normal, or shorted to high source
452	157	4	Warning (Solid)	Injector Metering Rail 1 Pressure Sensor Circuit - Voltage below normal, or shorted to low source
523	611	2	Warning (Solid)	Auxiliary Intermediate (PTO) Speed Switch Validation - Data erratic, intermittent or incorrect
527	702	3	Warning (Solid)	Auxiliary Input/Output 2 Circuit - Voltage above normal, or shorted to high source
528	93	2	Warning (Solid)	Auxiliary Alternate Torque Validation Switch - Data erratic, intermittent or incorrect
529	703	3	Warning (Solid)	Auxiliary Input/Output 3 Circuit - Voltage above normal, or shorted to high source
553	157	16	Warning (Solid)	Injector Metering Rail 1 Pressure - Data Valid But Above Normal Operating Range - Moderately Severe Level
559	157	18	Warning (Solid)	Injector Metering Rail 1 Pressure - Data Valid But Below Normal Operating Range - Moderately Severe Level
584	677	3	Warning (Solid)	Starter Relay Driver Circuit - Voltage above normal, or shorted to high source
585	677	4	Warning (Solid)	Starter Relay Driver Circuit - Voltage below normal, or shorted to low source
599	640	14	Stop (Solid)	Auxiliary Commanded Dual Output Shutdown - Special Instructions
649	1378	31	Warning (Blinking)	Engine Oil Change Interval - Condition Exists

Fault Code	J1939 SPN	J1939 FMI	Lamp Color	Cummins Description
689	190	2	Warning (Solid)	Engine Crankshaft Speed/Position - Data erratic, intermittent or incorrect
691	1172	3	Warning (Solid)	Turbocharger 1 Compressor Intake Temperature Circuit - Voltage above normal, or shorted to high source
692	1172	4	Warning (Solid)	Turbocharger 1 Compressor Intake Temperature Circuit - Voltage below normal, or shorted to low source
697	1136	3	Warning (Solid)	Engine ECU Temperature Sensor Circuit - Voltage above normal, or shorted to high source
698	1136	4	Warning (Solid)	Engine ECU Temperature Sensor Circuit - Voltage below normal, or shorted to low source
731	723	7	Warning (Solid)	Engine Speed / Position Camshaft and Crankshaft Misalignment - Mechanical system not responding or out of adjustment
778	723	2	Warning (Solid)	Engine Camshaft Speed / Position Sensor - Data erratic, intermittent or incorrect
778	723	2	Warning (Solid)	Engine Camshaft Speed / Position Sensor - Data erratic, intermittent or incorrect
1117	3597	2	None	Power Supply Lost With Ignition On - Data erratic, intermittent or incorrect
1239	2623	3	Warning (Solid)	Accelerator Pedal or Lever Position Sensor 2 Circuit - Voltage above normal, or shorted to high source
1241	2623	4	Warning (Solid)	Accelerator Pedal or Lever Position Sensor 2 Circuit - Voltage below normal, or shorted to low source
1242	91	2	Stop (Solid)	Accelerator Pedal or Lever Position Sensor 1 - Data erratic, intermittent or incorrect
1515	91	19	Stop (Solid)	SAE J1939 Multiplexed Accelerator Pedal or Lever Sensor System - Received Network Data In Error
1539	1387	3	Warning (Solid)	Auxiliary Pressure Sensor Input 1 Circuit - Voltage above normal, or shorted to high source
1621	1387	4	Warning (Solid)	Auxiliary Pressure Sensor Input 1 Circuit - Voltage below normal, or shorted to low source
1695	3513	3	Warning (Solid)	Sensor Supply 5 - Voltage above normal, or shorted to high source
1696	3513	4	Warning (Solid)	Sensor Supply 5 - Voltage below normal, or shorted to low source
1852	97	16	Warning (Solid)	Water in Fuel Indicator - Data Valid But Above Normal Operating Range - Moderately Severe Level
1866	411	2	Warning (Solid)	Exhaust Gas Recirculation Differential Pressure - Data erratic,
1893	2791	9	Warning (Solid)	EGR Valve Control Circuit - Abnormal update rate
1896	2791	13	Warning (Solid)	EGR Valve Controller - Out of Calibration
2182	1072	3	Warning (Solid)	Engine Brake Actuator Driver 1 Circuit - Voltage above normal, or shorted to high source
2183	1072	4	Warning (Solid)	Engine Brake Actuator Driver 1 Circuit - Voltage below normal, or shorted to low source
2185	3512	3	Warning (Solid)	Sensor Supply 4 Circuit - Voltage above normal, or shorted to high source

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2186	3512	4	Warning (Solid)	Sensor Supply 4 Circuit - Voltage below normal, or shorted to low source
2271	27	3	Warning (Solid)	EGR Valve Position Circuit - Voltage above normal, or shorted to high source
2272	27	4	Warning (Solid)	EGR Valve Position Circuit - Voltage below normal, or shorted to low source
2273	411	3	Warning (Solid)	Exhaust Gas Recirculation Differential Pressure Sensor Circuit - Voltage above normal, or shorted to high source
2274	411	4	Warning (Solid)	Exhaust Gas Recirculation Differential Pressure Sensor Circuit - Voltage below normal, or shorted to low source
2311	633	31	Warning (Solid)	Electronic Fuel Injection Control Valve Circuit - Condition Exists
2321	190	2	None	Engine Crankshaft Speed/Position - Data erratic, intermittent or incorrect
2322	723	2	None	Engine Camshaft Speed / Position Sensor - Data erratic, intermittent or incorrect
2351	2791	4	Warning (Solid)	EGR Valve Control Circuit - Voltage below normal, or shorted to low source
2352	2791	3	Warning (Solid)	EGR Valve Control Circuit - Voltage above normal, or shorted to high source
2357	2791	7	Warning (Solid)	EGR Valve Control Circuit - Mechanical System Not Responding or Out of Adjustment
2375	412	3	Warning (Solid)	Exhaust Gas Recirculation Temperature Sensor Circuit - Voltage above normal, or shorted to high source
2376	412	4	Warning (Solid)	Exhaust Gas Recirculation Temperature Sensor Circuit - Voltage below normal, or shorted to low source
2377	647	3	Warning (Solid)	Fan Control Circuit - Voltage above normal, or shorted to high source
2442	651	13	Warning (Solid)	Injector Solenoid Driver Cylinder 1 - Out of Calibration
2443	652	13	Warning (Solid)	Injector Solenoid Driver Cylinder 2 - Out of Calibration
2444	653	13	Warning (Solid)	Injector Solenoid Driver Cylinder 3 - Out of Calibration
2445	654	13	Warning (Solid)	Injector Solenoid Driver Cylinder 4 - Out of Calibration
2448	111	17	Warning (Blinking)	Coolant Level - Data Valid But Below Normal Operating Range - Least Severe Level
2555	729	3	Warning (Solid)	Engine Intake Air Heater 1 Circuit - Voltage above normal, or shorted to high source
2556	729	4	Warning (Solid)	Engine Intake Air Heater 1 Circuit - Voltage below normal, or shorted to low source
2557	697	3	Warning (Solid)	Auxiliary PWM Driver 1 Circuit - Voltage above normal, or shorted to high source
2558	697	4	Warning (Solid)	Auxiliary PWM Driver 1 Circuit - Voltage below normal, or shorted to low source
2961	412	15	None	Exhaust Gas Recirculation Temperature - Data Valid But Above Normal Operating Range - Least Severe Level

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2962	412	16	Warning (Solid)	Exhaust Gas Recirculation Temperature - Data Valid But Above Normal Operating Range - Moderately Severe Level
2963	110	15	None	Engine Coolant Temperature - Data Valid But Above Normal Operating Range - Least Severe Level
2964	105	15	None	Intake Manifold 1 Temperature - Data Valid But Above Normal Operating Range - Least Severe Level
3136	5019	3	Warning (Solid)	Engine Exhaust Gas Recirculation Outlet Pressure Sensor Circuit - Voltage above normal, or shorted to high source
3137	5019	4	Warning (Solid)	Engine Exhaust Gas Recirculation Outlet Pressure Sensor Circuit - Voltage below normal, or shorted to low source
3186	1623	9	Warning (Solid)	Tachograph Output Shaft Speed - Abnormal update rate
3213	1623	19	Warning (Solid)	Tachograph Output Shaft Speed - Received Network Data In Error
3326	91	9	Stop (Solid)	SAE J1939 Multiplexed Accelerator Pedal or Lever Sensor System - Abnormal update rate
3328	191	9	Warning (Solid)	Transmission Output Shaft Speed - Abnormal update rate
3341	107	16	Warning (Solid)	Engine Air Filter Differential Pressure - Data Valid But Above Normal Operating Range - Moderately Severe Level
3418	191	19	Warning (Solid)	Transmission Output Shaft Speed - Received Network Data In Error
3525	84	19	Warning (Solid)	Wheel-Based Vehicle Speed - Received Network Data In Error
3526	84	9	Warning (Solid)	Wheel-Based Vehicle Speed - Abnormal update rate
3527	558	19	Stop (Solid)	Accelerator Pedal or Lever Idle Validation Switch - Received Network Data In Error
3528	558	9	Stop (Solid)	Accelerator Pedal or Lever Idle Validation Switch - Abnormal update rate
3555	1081	9	Warning (Solid)	Engine Wait to Start Lamp - Abnormal update rate
3613	111	9	Warning (Solid)	Coolant Level Sensor - Abnormal update rate
3614	111	19	Warning (Solid)	Coolant Level Sensor - Received Network Data In Error
3641	748	9	Warning (Solid)	Transmission Output Retarder - Abnormal update rate
3697	630	12	Stop (Solid)	Engine Control Module Calibration Memory - Bad intelligent device or component
3727	5571	7	None	High Pressure Common Rail Fuel Pressure Relief Valve - Mechanical system not responding or out of adjustment
3737	1675	31	None	Engine Starter Mode Overcrank Protection - Condition Exists
3741	5571	0	Warning (Solid)	High Pressure Common Rail Fuel Pressure Relief Valve - Data valid but above normal operational range - Most Severe Level
4642	97	0	Stop (Solid)	Water in Fuel Indicator - Data Valid But Above Normal Operating Range - Most Severe Level
4734	701	14	Stop (Solid)	Auxiliary Input/Output 1 - Special Instructions

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4734	701	14	Stop (Solid)	Auxiliary Input/Output 1 - Special Instructions
4789	1639	0	Warning (Solid)	Fan Speed - Data Valid but Above Normal Operational Range - Most Severe Level
4791	1639	1	Warning (Solid)	Fan Speed - Data Valid but Below Normal Operational Range - Most Severe Level
5576	107	15	Warning (Blinking)	Engine Air Filter Differential Pressure - Data Valid But Above Normal Operating Range - Least Severe Level