

Listing of Diagnostic Trouble Codes (DTCs) on ECU

Ascending SPN/FMI Codes

DTC's Listing in Ascending SPN/FMI Codes

SPN	FMI	Definition
000028	03	Throttle Voltage High
	04	Throttle Voltage Low
000029	03	Throttle Voltage High
	04	Throttle Voltage Low
	14	Throttle Voltage Out of Range
000091	03	Throttle Voltage High
	04	Throttle Voltage Low
	07	Throttle Calibration Invalid
	09	Accelerator Pedal Position CAN Message Missing, Late, or Invalid
	10	Throttle Voltage Low
	13	Throttle Calibration Aborted
000097	14	Throttle Voltage Out of Range
	00	Water In Fuel, above Normal, Most Severe
	03	Water in Fuel Signal Voltage High
	04	Water in Fuel Signal Voltage Low
	16	Water in Fuel Detected
000100	31	Water In Fuel Detected, Condition Exists
	01	Engine Oil Pressure Extremely Low
	03	Engine Oil Pressure Input Voltage High
	04	Engine Oil Pressure Input Voltage Low
	16	Engine Oil Pressure, Reading Incorrect
000105	18	Engine Oil Pressure Moderately Low
	03	Manifold Air Temperature Input Voltage High
	04	Manifold Air Temperature Input Voltage Low
000107	16	Manifold Air Temperature Moderately High
	00	Air Filter Restricted
000110	00	Engine Coolant Temperature Extremely High
	03	Engine Coolant Temperature Input Voltage High
	04	Engine Coolant Temperature Input Voltage Low
	15	Engine Coolant Temperature High Least Severe
	16	Engine Coolant Temperature Moderately High
000111	00	Loss of Coolant Temperature Extremely High
	03	Loss of Coolant Temperature Input Voltage High
	04	Loss of Coolant Temperature Input Voltage Low
000158	17	ECU Power Down Error
000171	03	Ambient Air Temperature, Voltage OOR, High
	04	Ambient Air Temperature, Voltage OOR, Low
000174	03	Fuel Temperature Input Voltage High
	04	Fuel Temperature Input Voltage Low
	16	Fuel Temperature High Moderately Severe
000189	00	Engine Speed Derate
000190	00	Engine Overspeed Extreme
	01	Engine Speed, Below Normal, Most Severe
	16	Engine Overspeed Moderate
000523	09	Current Gear Not Received or Invalid
	18	Engine Speed, Below Normal, Moderately Severe
000620	03	Sensor Supply Voltage High

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Trouble Code Diagnostics and Tests

	04	Sensor Supply Voltage Low
000627	04	ECU Unswitched Power Missing
000629	13	ECU Error
000636	02	Engine Position Sensor Noise Detected
	08	Engine Position Sensor Signal Missing
	10	Engine Position Sensor Pattern Error Detected
000637	01	Timing (Crank) Sensor, Signal Pattern Error
	02	Crank Position Input Noise
	10	Crank Position Input Pattern Error
000639	13	CAN Bus Error
000644	02	External Speed Command Input, Data Erratic, Intermittent, or Incorrect
000729	03	Inlet Air Heater Signal High
000729	05	Inlet Air Heater Signal Low
000898	09	Vehicle Speed Invalid/Missing
000970	31	Auxiliary Engine Shutdown Switch Active
000971	31	External Engine Derate Switch Active
001076	00	Pump Control Valve Closure Too Long
	01	Pump Control Valve Closure Too Short
	03	Pump Solenoid Current High
	05	Pump Solenoid Circuit Open
	06	Pump Solenoid Circuit Severely Shorted
	07	Pump Control Valve Closure Not Detected
	10	Pump Solenoid Circuit Moderately Shorted
	13	Pump Current Decay Time Invalid
001079	03	Sensor Supply Voltage High
	04	Sensor Supply Voltage Low
001109	31	Engine Shutdown Warning
001110	31	Engine Shutdown
001568	04	Torque Curve Selection Input Voltage Low
001569	31	Fuel Derate
002000	06	Internal ECU Failure
	13	Security Violation

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Ascending 2-Digit/Other Codes

DTC's Listing in Ascending 2-Digit Codes

2-Digit/Other Code	SPN	FMI	Definition
11	000091	03	Throttle Voltage High
12	000091	04	Throttle Voltage Low
13	000028	03	Throttle Voltage High
14	000028	04	Throttle Voltage Low
15	000029	03	Throttle Voltage High
16	000029	04	Throttle Voltage Low
18	000110	03	Engine Coolant Temperature Input Voltage High
19	000110	04	Engine Coolant Temperature Input Voltage Low
21	000620	03	Sensor Supply Voltage High
	001079	03	Sensor Supply Voltage High
22	000620	04	Sensor Supply Voltage Low
	001079	04	Sensor Supply Voltage Low
23	000100	03	Engine Oil Pressure Input Voltage High
24	000100	04	Engine Oil Pressure Input Voltage Low
25	000105	03	Manifold Air Temperature Input Voltage High
26	000105	04	Manifold Air Temperature Input Voltage Low
28	000629	13	ECU Error
32	N/A ^a	N/A ^a	When reading blink codes, signifies start of active fault codes.
33	N/A ^a	N/A ^a	When reading blink codes, signifies start of previously active fault codes.
37	000174	03	Fuel Temperature Input Voltage High
38	000174	04	Fuel Temperature Input Voltage Low
39	000637	02	Crank Position Input Noise
		10	Crank Position Input Pattern Error
42	000190	00	Engine Overspeed Extreme
		16	Engine Overspeed Moderate
54	000158	17	ECU Power Down Error
55	000639	13	CAN Bus Error
62	000110	15	Engine Coolant Temperature High Least Severe
63	000110	16	Engine Coolant Temperature Moderately High
64	000100	18	Engine Oil Pressure Moderately Low
65	000100	01	Engine Oil Pressure Extremely Low
66	000105	16	Manifold Air Temperature Moderately High
68	001569	31	Fuel Derate
69	000110	00	Engine Coolant Temperature Extremely High
71	001076	00	Pump Control Valve Closure Too Long
72	001076	01	Pump Control Valve Closure Too Short
73	001076	05	Pump Solenoid Circuit Open
74	001076	06	Pump Solenoid Circuit Severely Shorted
75	001076	07	Pump Control Valve Closure Not Detected
76	001076	10	Pump Solenoid Circuit Moderately Shorted
77	001076	03	Pump Solenoid Current High
78	002000	13	Security Violation
79	002000	06	Internal ECU Error
81	000174	16	Fuel Temperature High Moderately Severe
82	001110	31	Engine Protection Shutdown
83	000970	31	Auxiliary Engine Shutdown Switch Active
84	000158	17	ECU Power Down Error
	000971	31	External Engine Derate Switch Active

^aN/A = Not Applicable

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Trouble Code Diagnostics and Tests

88	N/A ^a	N/A ^a	When reading blink codes, signifies that no fault codes are in buffer.
F400	000029	03	Multi-state Throttle Input High
F401	000029	04	Multi-state Throttle Input Low
F402	000029	14	Multi-state Throttle Input Voltage Out of Range
F411	000620	04	Sensor Supply Voltage Low
F414	000620	03	Sensor Supply Voltage High
F415	000100	04	Engine Oil Pressure Input Voltage Low
F418	000105	16	Manifold Air Temperature Moderately High
F420	000091	04	Analog Throttle (A) Input Low
F421	000091	10	Throttle Input Voltage Below Lower Calibration
F422	000110	16	Engine Coolant Temperature Moderately High
F423	000091	09	Throttle Calibration Aborted
F425	000091	03	Analog Throttle (A) Input High
F474	000174	16	Fuel Temperature High Moderately Severe
F428	000091	07	Throttle Not Calibrated Properly
F42A	000091	14	Analog Throttle (A) Input Voltage Out of Range
	000639	13	Skidders ONLY - CAN Bus Error
F445	000100	03	Engine Oil Pressure Input Voltage High
F446	000100	01	Engine Oil Pressure Extremely Low
F450	000110	04	Engine Coolant Temperature Input Voltage Low
F455	000110	03	Engine Coolant Temperature Input Voltage High
F457	000110	00	Engine Coolant Temperature Extremely High
F460	000105	04	Manifold Air Temperature Input Voltage Low
F465	000105	03	Manifold Air Temperature Input Voltage High
F49A	001076	10	Pump Solenoid Circuit Moderately Shorted
F497	001076	13	Pump Current Decay Time Invalid
F474	000174	16	Fuel Temperature High Moderately Severe
F475	000174	03	Fuel Temperature Input Voltage High
	001569	31	Fuel Derate
F478	001076	13	Pump Current Decay Time Invalid
F48A	000637	10	Crank Position Input Pattern Error
F48b	000637	02	Crank Position Input Noise
F490	001076	06	Pump Solenoid Circuit Severely Shorted
F491	001076	01	Pump Control Valve Closure Too Short
F492	001076	03	Pump Solenoid Current High
F493	001076	07	Pump Control Valve Closure Not Detected
F494	001076	00	Pump Control Valve Closure Too Long
F495	001076	05	Pump Solenoid Circuit Open
F49A	001076	10	Pump Solenoid Circuit Moderately Shorted
F4A0	000111	04	Loss of Coolant Temperature Input Voltage Low
F4A5	000111	03	Loss of Coolant Temperature Input Voltage High
F4A7	000111	00	Loss of Coolant Temperature Extremely High
F4E0	002000	06	Internal ECU Failure
F4E3	000629	13	ECU Error
F4EA	000158	17	ECU Power Down Error
F4Ed	002000	13	Security Violation

^aN/A = Not Applicable

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