

Chapter 10

Error codes list

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English

Engine		
SPN	FMI	English
46	1	Low air pressure signal from APS
46	19	CAN message timeout from APS
51	0	Throttle Position - Above normal operational range
51	1	Throttle Position - Below normal operational range
51	2	Throttle Position - Erratic, intermittent or incorrect
51	3	Throttle Position - Voltage above normal or shorted high
51	4	Throttle Position - Voltage below normal or shorted low
51	5	Throttle Position - Current below normal or open circuit
51	7	Throttle Position - Sensor, not plausible
51	8	Throttle Position - Endpoints of sensor are out of range
51	9	Throttle Position - Sensor, correlation error
91	2	Auxiliary accelerator pedal is used due to other fault
91	9	Accelerator pedal faulty or error via can
91	10	Accelerator pedal not plausible, faulty
91	19	Accelerator pedal value out of range via CAN
94	0	Fuel Delivery Pressure - Above normal operational range
98	2	Engine Oil Level - Erratic, intermittent or incorrect
98	3	Engine Oil Level - Above normal operational range
98	4	Engine Oil Level - Below normal operational range
98	10	Oil level sensor stuck
100	0	Engine Oil Pressure - Above normal operational range
100	1	Oil pressure sensor, pressure too low
100	2	Oil pressure sensor, faulty
100	3	Oil pressure sensor, short circuit to +24V
100	4	Oil pressure sensor, short circuit to ground
100	13	Oil pressure sensor, pressure not plausible
100	16	Oil pressure sensor, pressure above normal
100	17	Oil pressure sensor, pressure too low and engine protective action
100	18	Oil pressure sensor, pressure below normal
102	0	Boost pressure higher than reference
102	1	Boost pressure lower than reference
102	2	Intake Manifold Pressure - Erratic, intermittent or incorrect
102	3	Boost pressure sensor, short circuit to +24V
102	4	Boost pressure sensor, short circuit to ground
102	5	Intake Manifold Pressure - Current below normal or open circuit
102	7	Boost pressure, too low
102	8	Boost pressure sensor, faulty
102	9	Boost pressure, not plausible
102	10	Boost pressure sensor, faulty
102	15	Intake Manifold Pressure sensor and exhaust pressure sensor do not correlate
102	16	Intake Manifold Pressure above normal
102	18	Intake Manifold Pressure, lower than reference at part load

102	20	Intake Manifold Pressure, too high not plausible
102	21	Intake Manifold Pressure, too low not plausible
103	0	Turbine excessive overspeed
103	2	Turbine speed sensor, faulty
103	3	Turbine speed sensor, short circuit to +24V
103	4	Turbine speed sensor, short circuit to ground
103	5	Turbine speed sensor, open load
103	9	Turbine speed not plausible
103	20	Turbine speed sensor above model, not plausible
103	21	Turbine speed sensor below model, not plausible
105	0	Boost temp sensor excessive high
105	1	Boost temp sensor excessive low
105	2	Boost temp sensor, faulty
105	3	Boost temp sensor, short circuit to +24V
105	4	Boost temp sensor, short circuit to ground
105	9	Boost temperature above ambient, not plausible
105	15	Boost temperature too high for longer period
105	16	Boost temperature above normal
105	17	Boost temperature below ambient, not plausible
105	20	Boost temperature to high, not plausible
105	21	Boost temperature to low, not plausible
107	1	Air filter clogged
107	2	Air filter control switch broken
108	2	Ambient Pressure Sensor Error via CAN
108	3	Ambient Pressure Sensor, short circuit to +24V
108	4	Ambient Pressure Sensor, short circuit to ground
108	15	Ambient Pressure Sensor and Exhaust Pressure Sensor do not correlate
108	16	Ambient Pressure above normal
108	20	Ambient Pressure too high, not plausible
108	21	Ambient Pressure too low, not plausible
110	0	Engine temperature, excessive high
110	1	Engine temperature too low
110	2	Engine temp sensor fault
110	3	Engine temp sensor, short circuit to +24V
110	4	Engine temp sensor, short circuit to ground
110	8	Engine temp sensor, stuck
110	9	Engine temp sensor, faulty
110	10	Engine temperature is not plausible
110	16	Engine temperature, too high
110	17	Engine Coolant Temp sensor, temp below normal or VGT-temp above normal
110	18	Engine Coolant Temp sensor, temp above normal or VGT-temp below normal
110	20	Engine Coolant Temp Too High
110	21	Engine Coolant Temp Below Thermostat Regulating Temperature

111	1	Coolant level too low
111	3	Coolant level sensor, short circuit to +24
111	4	Coolant level sensor, short circuit to ground
131	2	Exhaust pressure sensor, not plausible
131	3	Exhaust pressure sensor, short circuit to +24V
131	4	Exhaust pressure sensor, short circuit to ground or open load
131	7	Exhaust pressure sensor and boost pressure sensor do not correlate
131	8	Exhaust pressure sensor, faulty
131	9	Exhaust pressure sensor, stuck
131	10	Exhaust pressure sensor and ambient pressure sensor do not correlate
131	15	Exhaust pressure, high exhaust pressure during normal fueling
131	16	Exhaust pressure, high exhaust pressure during motoring, no fueling
131	18	Exhaust pressure, low exhaust pressure during exhaust brake
131	20	Exhaust pressure too high, not plausible
131	21	Exhaust pressure too low, not plausible
132	0	Mass flow sensor, short circuit to +24V
132	1	Mass flow sensor, short circuit to ground or open load
132	2	Mass flow sensor, faulty
132	3	Mass flow sensor, supply
132	4	Mass flow sensor, adaptation under low threshold
132	5	Mass flow sensor, adaptation over high threshold
132	7	Mass flow sensor, stuck
156	0	Fuel rail pressure is excessively above command
156	1	Fuel rail pressure is excessively below command
156	2	Fuel rail pressure sensor, faulty
156	3	Fuel rail pressure sensor, short circuit to +24V or open load
156	4	Fuel rail pressure sensor, short circuit to ground
156	8	Fuel rail pressure sensor, stuck
156	9	Fuel rail pressure is lagging
156	18	Fuel rail pressure is too low during cranking
167	2	Alternator actuator, faulty
167	3	Alternator actuator, short circuit to +24V
167	4	Alternator actuator, short circuit to ground
167	5	Alternator actuator, open load
167	6	Charging System - Current above normal or grounded circuit
167	9	Alternator 1, signal not plausible
167	10	Alternator 2, signal not plausible
168	0	Battery voltage above 47 V for 1 s
168	1	Battery voltage below 9 V for 0.5 s
168	4	Battery voltage 1 for engine control unit is low
168	5	Battery voltage 2 for engine control unit is low
168	15	Battery voltage too high for SCR main unit
168	16	Battery voltage above 32 V

168	17	Battery voltage too low for SCR main unit
168	18	Battery voltage below 21 V
171	0	Ambient temperature sensors correlation error
171	1	Ambient temperature low or boost temperature high
171	2	Ambient temperature sensor, faulty
171	3	Ambient temperature sensor error via CAN
171	4	Ambient temperature sensor error via CAN
171	7	Ambient temperature sensor stuck
171	9	CAN message AMBIENT CONDITION from coordinator timeout
171	15	Ambient temperature sensors correlation error
171	16	Ambient temperature high or boost temperature low
171	17	Ambient temperature sensors correlation error
171	18	Ambient temperature sensors correlation error
171	19	Ambient temperature sensor signal defect
171	20	Temperature sensor before compressor low or ambient temperature sensor high
171	21	Temperature sensor before compressor high or ambient temperature sensor low
172	2	Air inlet temp sensor, faulty
172	3	Air inlet temp sensor, short circuit to +24V
172	4	Air inlet temp sensor, short circuit to ground
172	7	Air inlet temp sensor, stuck
175	3	Oil temp sensor, short circuit to +24V
175	4	Oil temp sensor, short circuit to ground
175	11	Oil temp sensor, faulty
188	14	Idle due to other fault
190	0	Severe overspeed has occurred
190	2	Engine Speed - Erratic, intermittent or incorrect
190	10	Overspeed protection, fast over speed
190	15	Engine Speed has been above the limit
190	16	Overspeed protection, over speed
190	20	Engine overspeed, value to high
234	2	The EMS and EEC control units are incompatible
234	19	Wrong CAN version transmitted by COO
532	14	Increased idle due to other fault
558	2	Low idle switch error state from coordinator
559	2	Kickdown signal defect via CAN
559	9	Accelerator Pedal/Kickdown CAN message, faulty
559	10	Accelerator Pedal/Kickdown switch, EMS and coordinator do not agree
590	2	Engine Idle Shutdown Timer State - Erratic, intermittent or incorrect
597	2	Brake pedal signal defect via CAN
598	2	Clutch pedal signal defect via CAN
598	7	Excessive clutch slip
598	19	CAN-signal or engine shut-down command from OPC for automatic clutch failure, timeout

636	1	Camshaft position sensor, faulty
636	2	Camshaft position sensor, intermittent fault
636	3	Camshaft position sensor, short circuit to +24V
636	4	Camshaft position sensor, short circuit to ground
636	5	Camshaft position sensor, open circuit
636	7	Engine speed detected by flywheel sensor, but no signal from camshaft sensor
636	8	Camshaft Pulse Pattern, Gap or Sync Error or other fault
641	2	VGT internal temperature sensor stuck
641	4	VGT voltage supply open load
641	5	VGT internal temperature sensor open circuit
641	7	VGT motion limited or restricted
641	8	VGT reference or position not found
641	9	VGT temperature sensor value not plausible
641	10	VGT motion error, span too large
641	11	VGT actuator faulty
641	12	VGT internal fault
641	13	VGT actuator installation procedure was not completed
641	15	VGT error
641	16	VGT temperature too high
641	19	VGT timeout on CAN
645	19	CAN message TCO1 from tachograph timeout
651	1	Two or more injectors with the same trim code, injector cyl. 1
651	2	Injector trim code, checksum error injector cyl. 1
651	4	Injector 1 cable short circuit to ground
651	5	Injector cyl. 1 cable/injector open load
651	6	Injector cyl. 1 cable/injector short circuit
651	7	Injection error, physical cylinder 1
651	8	Injector cyl. 1, over or under fueling
651	10	Fault with sensors/actuators for the particulate filter
651	13	Injector trim code version error, injector cyl. 1
651	15	Cylinder 1 torque error
651	16	Cylinder 1 injector fault, high torque
651	18	Cylinder 1 injector fault, low torque
651	20	Cylinder 1 balancing min or max
651	21	Cylinder balancing, not plausible
652	1	Two or more injectors with the same trim code, injector cyl. 2
652	2	Injector trim code, checksum error injector cyl. 2
652	4	Injector 2 cable short circuit to ground
652	5	Injector cyl. 2 cable/injector open load
652	6	Injector cyl. 2 cable/injector short circuit
652	7	Injection error, physical cylinder 2
652	8	Injector cyl. 2, over or under fueling
652	10	Fault with sensors/actuators for the particulate filter

652	13	Injector trim code version error, injector cyl. 2
652	15	Cylinder 2 torque error
652	16	Cylinder 2 injector fault, high torque
652	18	Cylinder 2 injector fault, low torque
652	20	Cylinder 2 balancing min or max
653	1	Two or more injectors with the same trim code, injector cyl. 3
653	2	Injector trim code, checksum error injector cyl. 3
653	4	Injector 3 cable short circuit to ground
653	5	Injector cyl. 3 cable/injector open load
653	6	Injector cyl. 3 cable/injector short circuit
653	7	Injection error, physical cylinder 3
653	8	Injector cyl. 3, over or under fueling
653	10	Fault with sensors/actuators for the particulate filter
653	13	Injector trim code version error, injector cyl. 3
653	15	Cylinder 3 torque error
653	16	Cylinder 3 injector fault, high torque
653	18	Cylinder 3 injector fault, low torque
653	20	Cylinder 3 balancing min or max
654	1	Two or more injectors with the same trim code, injector cyl. 4
654	2	Injector trim code, checksum error injector cyl. 4
654	4	Injector 4 cable short circuit to ground
654	5	Injector cyl. 4 cable/injector open load
654	6	Injector cyl. 4 cable/injector short circuit
654	7	Injection error, physical cylinder 4
654	8	Injector cyl. 4, over or under fueling
654	10	Fault with sensors/actuators for the particulate filter
654	13	Injector trim code version error, injector cyl. 4
654	15	Cylinder 4 torque error
654	16	Cylinder 4 injector fault, high torque
654	18	Cylinder 4 injector fault, low torque
654	20	Cylinder 4 balancing min or max
655	1	Two or more injectors with the same trim code, injector cyl. 5
655	2	Injector trim code, checksum error injector cyl. 5
655	4	Injector 5 cable short circuit to ground
655	5	Injector cyl. 5 cable/injector open load
655	6	Injector cyl. 5 cable/injector short circuit
655	7	Injection error, physical cylinder 5
655	8	Injector cyl. 5, over or under fueling
655	10	Fault with sensors/actuators for the particulate filter
655	13	Injector trim code version error, injector cyl. 5
655	15	Cylinder 5 torque error
655	16	Cylinder 5 injector fault, high torque
655	18	Cylinder 5 injector fault, low torque

655	20	Cylinder 5 balancing min or max
656	1	Two or more injectors with the same trim code, injector cyl. 6
656	2	Injector trim code, checksum error injector cyl. 6
656	5	Injector cyl. 6 cable/injector open load
656	6	Injector cyl. 6 cable/injector short circuit
656	7	Injection error, physical cylinder 6
656	8	Injector cyl. 6, over or under fueling
656	13	Injector trim code version error, injector cyl. 6
656	15	Cylinder 6 torque error
656	16	Cylinder 6 injector fault, high torque
656	18	Cylinder 6 injector fault, low torque
656	20	Cylinder 6 balancing min or max
657	1	Two or more injectors with the same trim code, injector cyl. 7
657	2	Injector trim code, checksum error injector cyl. 7
657	5	Injector cyl. 7 cable/injector open load
657	6	Injector cyl. 7 cable/injector short circuit
657	7	Injection error, physical cylinder 7
657	8	Injector cyl. 7, over or under fueling
657	13	Injector trim code version error, injector cyl. 7
657	15	Cylinder 7 torque error
657	16	Cylinder 7 injector fault, high torque
657	18	Cylinder 7 injector fault, low torque
657	20	Cylinder 7 balancing min or max
658	1	Two or more injectors with the same trim code, injector cyl. 8
658	2	Injector trim code, checksum error injector cyl. 8
658	5	Injector cyl. 8 cable/injector open load
658	6	Injector cyl. 8 cable/injector short circuit
658	7	Injection error, physical cylinder 8
658	8	Injector cyl. 8, over or under fueling
658	13	Injector trim code version error, injector cyl. 8
658	15	Cylinder 8 torque error
658	16	Cylinder 8 injector fault, high torque
658	18	Cylinder 8 injector fault, low torque
658	20	Cylinder 8 balancing min or max
677	0	Unintentional starter activation while moving or idling
677	2	Starter actuator, faulty
677	3	Starter actuator, short circuit to +24V
677	4	Starter actuator, short circuit to ground
677	5	Starter actuator, open load
677	7	Starter actuator, blind start
677	8	Starter Motor Relay - Abnormal frequency, pulse width or pending
677	19	Starter motor demand defect via CAN
723	2	Engine position sensor 2, faulty

723	4	Engine position sensor 2, too weak signal
723	7	Engine position sensor 2, faulty
723	8	Engine position sensor 2, Gap Pulse or Sync error
723	9	Engine position sensor 2, Time out
723	10	Engine position sensor 2, position diff
723	14	Engine position sensor 2 error torque limit
974	0	Signal level from redundant gas pedal above high limit
974	1	Signal level from redundant gas pedal below low limit
986	2	Fan actuator, faulty
986	3	Fan actuator, short circuit to +24V
986	4	Fan actuator, short circuit high to ground
986	5	Fan actuator, open load
986	7	Fan coupling unit, bad performance
1086	2	Electrical fault on the parking brake pressure sensor
1108	14	Overridden due to other fault
1110	2	Engine Protection System has Shutdown Engine
1110	14	Engine Stop due to other fault
1239	7	Fuel Rail pressure, small volume leak
1322	7	Random/Multiple Cylinder Misfire Detected
1323	7	Cylinder 1 Misfire Detected
1324	7	Cylinder 2 Misfire Detected
1325	7	Cylinder 3 Misfire Detected
1326	7	Cylinder 4 Misfire Detected
1327	7	Cylinder 5 Misfire Detected
1328	7	Cylinder 6 Misfire Detected
1329	7	Cylinder 7 Misfire Detected
1330	7	Cylinder 8 Misfire Detected
1442	2	Inlet metering valve 1, faulty
1442	3	Inlet metering valve 1, short circuit to +24V
1442	5	Inlet metering valve 1, short circuit to ground
1442	7	Inlet metering valve 1, stuck
1442	8	Inlet metering valve 1, plausible leakage
1442	10	Inlet metering valve 1, calculated resistance error
1443	1	Mechanical dump valve, opened
1443	6	Mechanical dump valve, tripped
1483	2	EMS internal error
1483	8	EMS Memory or TPU Error
1483	9	Camshaft TPU Supervision Error
1483	11	Software Watchdog Reset
1483	12	Hardware watchdog error
1484	9	CAN message DLN1 from coordinator timeout
1484	10	CAN message CRUISE CONTROL/ VEHICLE SPEED from coordinator time-out

1484	16	CAN message from EMSX, invalid data
1484	18	CAN message from EMSX, invalid data
1484	19	CAN message DLN6 from coordinator timeout
1484	20	CAN message timeout from EMSX
1484	21	CAN message timeout from EMSX
1485	16	SCR main unit, power switched off too early
1485	18	SCR main unit, power switched off too late
1569	14	Torque reduction due to other fault
1632	2	Engine Torque Limit Feature - Erratic
1639	3	Fan speed sensor, short circuit to +24V
1639	4	Fan speed sensor supply too low
1639	8	Fan speed sensor circuit no signal
1675	2	Immobilizer - EMS and EMSX
1675	9	Invalid Data Received From Vehicle Control Module
1675	12	Immobilizer error
1675	13	Software Incompatibility With Vehicle Immobilizer Control Module
1675	19	Lost Communication With Vehicle Immobilizer Control Module
1761	0	SCR Catalyst Tank Level - Above normal operational range
1761	1	Reductant tank, empty
1761	2	Reductant tank level sensor, short circuit to ground
1761	3	Reductant tank level sensor, short circuit to +24V
1761	5	Reductant tank level sensor, open circuit
1761	6	SCR Catalyst Tank Level - Current above normal or grounded circuit
1761	8	SCR Catalyst Tank Level - Abnormal frequency, pulse width or pending
1761	18	Reductant tank, low level
2609	2	AC compressor actuator, faulty
2609	3	AC compressor actuator, short circuit to +24V
2609	4	AC compressor actuator, short circuit to ground
2609	5	AC compressor actuator, open load
2791	2	EGR actuator, control error
2791	3	EGR actuator, short circuit to +24V
2791	4	EGR actuator, short circuit to ground
2791	5	EGR actuator, stuck open
2791	7	EGR actuator, stuck close
2791	8	The EGR valve is responding too slow
2791	10	NOx Exceedence - Incorrect EGR Flow
2791	11	EGR system faulty
2791	16	NOx Exceedence - Deactivation of EGR
2791	20	EGR higher than desired
2791	21	EGR lower than desired
2797	2	Injector group A, short circuit to other bank
2797	3	Injector group A, short circuit to +24V
2797	4	Injector group A, short circuit to ground

2797	5	Injector drive voltage, faulty
2797	8	Injector group A, injection error
2798	2	Injector group B, short circuit to other bank
2798	3	Injector group B, short circuit +24V
2798	4	Injector group B, short circuit ground
2798	8	Injection error, group B
2858	13	EMS, Default EOL Data in E2
2859	13	EMS, Default Barcoding Data in E2
2860	13	EMS internal software error
2861	13	EMS Configuration for Automatic Clutch Fault
2862	13	Internal software error
3031	0	SCR main unit, high temperature low limit exceedence
3031	1	SCR Catalyst Tank Temperature - Below normal operational range
3031	3	SCR Catalyst Tank Temperature - Voltage above normal or shorted high
3031	6	SCR Catalyst Tank Temperature - Current above normal or grounded circuit
3216	4	NOx sensor upstream, internal fault or open circuit
3216	5	NOx sensor upstream, open circuit
3216	7	NOx sensor upstream, internal fault
3216	8	NOx sensor upstream of catalytic converter
3216	9	NOx sensor upstream of catalytic converter
3216	10	NOx sensor upstream, stuck
3216	17	NOx sensor upstream, low signal
3216	18	NOx sensor upstream, too low value
3216	19	NOx sensor upstream error via CAN
3216	20	NOx sensor upstream, not plausible
3226	2	NOx sensor outlet - Erratic, intermittent or incorrect
3226	3	NOx sensor outlet - Voltage above normal or shorted high
3226	4	NOx sensor downstream, internal fault or open circuit
3226	5	NOx sensor downstream, open circuit
3226	6	NOx sensor outlet - Current above normal or grounded circuit
3226	7	NOx sensor outlet, internal fault
3226	8	NOx sensor downstream error via CAN
3226	9	NOx sensor downstream of the SCR catalytic converter
3226	10	NOx sensor downstream, stuck
3226	17	NOx sensor downstream, low signal
3226	18	NOx sensor downstream, too low value
3226	19	NOx sensor downstream of the catalytic converter
3226	20	NOx sensor downstream, not plausible
3241	2	Upstream catalyst temperature sensor not plausible, not plausible
3241	3	Upstream catalyst temperature sensor not plausible, to high
3241	4	Upstream catalyst temperature sensor not plausible, short circuit
3241	5	Upstream catalyst temperature sensor not plausible, open circuit
3241	6	Exhaust Gas Temperature - Current above normal or grounded circuit

3241	8	Upstream catalyst temperature sensor not plausible, to high
3241	10	Upstream catalyst temperature sensor not plausible, not plausible
3241	16	Upstream catalyst temperature too high
3241	18	Upstream catalyst temperature sensor not plausible, to low
3241	19	CAN Error from Exhaust Temperature Sensors
3242	0	Upstream DPF temperature sensor, to high
3242	7	Upstream DPF temperature sensor, not plausible
3242	9	Upstream DPF temperature sensor, not plausible
3242	10	Upstream DPF temperature too high during normal condition
3242	16	Upstream DPF temperature too high during regeneration
3245	19	Auxiliary Temperature Sensor Error on CAN
3246	2	Downstream DPF temperature sensor error
3246	3	Exhaust temperature sensor after SCR catalytic converter, short circuit
3246	4	Exhaust temperature sensor after SCR catalytic converter, open circuit
3246	9	Downstream exhaust temperature sensor, not plausible
3246	15	Downstream DPF temperature too high during normal condition
3246	16	Downstream DPF temperature too high during regeneration
3251	2	Particle filter - missing
3251	7	Particle filter - damaged or cracked
3251	8	Particle filter - differential pressure sensor not plausible
3251	9	Particle filter - differential pressure sensor not plausible
3340	1	Intercooler temperature, too low
3340	3	Intercooler pressure sensor, short circuit to +24V
3340	4	Intercooler pressure sensor, short circuit to ground
3340	7	Intercooler pressure sensor, stuck
3340	9	Intercooler pressure sensor, not plausible
3340	10	Intercooler pressure sensor, not plausible
3340	15	Intercooler pressure, above normal
3340	16	Intercooler pressure, above normal
3340	20	Intercooler pressure too high
3340	21	Intercooler pressure too low
3360	0	SCR system adaptation have reached max values
3360	1	SCR system adaptation have reached min values
3360	2	EEC3 System has demanded "SCR Hazardous major functional failure" actions
3360	3	SCR main unit, ventilation valve test, short to battery
3360	4	SCR main unit, internal supply voltage low
3360	5	SCR main unit, ventilation valve test, open load
3360	6	SCR main unit, system voltage error
3360	7	SCR main unit, ignition switch plausible error
3360	9	EEC3 has demanded "SCR Major functional failure reductant dosing stopped" actions
3360	10	EEC3 System has demanded "SCR minor functional failure" actions
3360	12	SCR main unit, error

3360	16	SCR main unit, internal supply voltage high
3360	19	SCR main unit, communication error
3361	2	SCR Catalyst Dosing Unit - Erratic, intermittent or incorrect
3361	3	SCR reductant dosing valve, short circuit to battery
3361	4	SCR Catalyst Dosing Unit - Voltage below normal or shorted low
3361	5	SCR reductant dosing valve, open circuit
3361	6	SCR Catalyst Dosing Unit - Current above normal or grounded circuit
3361	10	SCR main unit, reductant pressure not plausible
3362	2	SCR reductant pressure, error
3363	0	SCR main unit, reductant heater, circuit high
3363	2	SCR main unit, reductant heater, open load
3363	3	SCR main unit, internal heating pump, short circuit to battery
3363	4	SCR main unit, reductant temperature sensor circuit low
3363	5	SCR main unit, internal heating pump, open load
3363	6	SCR Catalyst Tank Heater - Current above normal or grounded circuit
3363	8	SCR main unit, reductant heater, circuit performance
3363	15	SCR reagent tank temperature too high
3363	16	SCR main unit, high temperature high limit exceeded
3363	17	SCR reductant tank temperature too low
3363	18	SCR main unit, low temperature limit exceeded
3464	2	Throttle, control error
3464	3	Throttle Actuator, short circuit to +24V
3464	4	Throttle Actuator, short circuit to ground
3464	5	Throttle Actuator, slow response
3464	6	Throttle Actuator Control System - Forced Limited Power
3464	7	Throttle, stuck in open position
3464	8	Throttle, stuck in closed position
3485	1	SCR main unit, air pressure too low
3485	2	SCR main unit, air pressure sensor after orifice circuit supply
3485	3	SCR main unit, air pressure sensor after orifice circuit high
3485	4	SCR main unit, air pressure sensor after orifice circuit low
3485	7	SCR, air circuit blocked
3485	9	SCR main unit, air pressure sensor after orifice performance
3485	18	EEC, air supply low
3485	20	SCR main unit, air pressure sensor after orifice plausible error
3563	11	Boost pressure sensor and ambient pressure sensor do not correlate
3563	15	Boost pressure sensor and ambient pressure sensor do not correlate
3563	17	Boost pressure sensor and ambient pressure sensor do not correlate
3607	2	Incorrect EMS shutdown
3673	3	Throttle Position Sensor 2, short circuit to +24V
3673	4	Throttle Position Sensor 2, short circuit to ground
3822	3	EGR position sensor, short circuit to +24V
3822	4	EGR position sensor, short circuit to ground

3822	7	EGR SRA reports a warning during Learn Stops
3822	8	EGR position sensor, outside the permitted range
3822	12	EGR SRA reports it has a continuous fault
3822	13	EGR position sensor, not plausible
3822	16	EGR SRA reports a running conditions warning for high temp or low voltage
3822	19	EGR CAN timeout
3822	20	EGR position sensor, voltage shows large variation in open position
3822	21	EGR position sensor, voltage shows large variation in closed position
3936	2	Particle filter, clogged
3936	6	Particle filter, ash level too high
3936	10	Exhaust temperature sensors, not plausible
4090	0	NOx level after catalytic converter too high
4090	2	NOx limits exceeded, cause unknown - Erratic or incorrect
4090	11	NOx Exceedence - Root Cause Unknown
4090	16	SCR main unit, NOx level too high
4095	2	NOx Exceedence - Interruption of Reagent Dosing Activity
4096	2	NOx Exceedence - Empty Reagent Tank
4201	2	Engine position sensor 1, faulty
4201	4	Engine position sensor 1, too weak signal
4201	7	Engine position sensor 1, faulty
4201	8	Engine position sensor 1, Gap Pulse or Sync error
4201	9	Engine position sensor 1, time out
4201	10	Engine position sensor 1, position diff
4202	2	Engine speed sensor faulty
4225	2	Failure in the NOx control monitoring system
4334	0	SCR reductant pressure error
4334	1	EEC3 has demanded "SCR Hazardous functional failure reductant dosing stopped" actions
4334	2	Urea pressure sensor, plausible error during start-up
4334	3	Urea pressure sensor, SRC high
4334	4	Urea pressure sensor, SRC low
4334	6	SCR Dosing Pressure - Current above normal or grounded circuit
4334	8	Urea pressure sensor, pressure too high not plausible
4337	2	SCR Dosing Temperature - Erratic, intermittent or incorrect
4337	3	SCR Dosing Temperature - Voltage above normal or shorted high
4337	6	SCR Dosing Temperature - Current above normal or grounded circuit
4341	2	SCR Reagent Line Heater - Erratic, intermittent or incorrect
4341	3	SCR Reagent Line Heater - Voltage above normal or shorted high
4341	5	SCR Reagent Line Heater - Current below normal or open circuit
4341	6	SCR Reagent Line Heater - Current above normal or grounded circuit
4374	0	Reductant pump fault, pump speed too high
4374	1	Reductant pump fault, pump speed too low
4374	2	SCR Pump Motor Speed - Erratic, intermittent or incorrect

4374	3	SCR Pump Motor Speed - Voltage above normal or shorted high
4374	5	SCR Pump Motor Speed - Current below normal or open circuit
4374	6	SCR Pump Motor Speed - Current above normal or grounded circuit
4782	0	Particle filter is clogged, hazardous
4782	16	Particle filter is clogged, major
4809	2	Upstream exhaust temperature sensor error
4809	7	Upstream exhaust temperature sensor, stuck
4809	8	Upstream exhaust temperature sensor error
4809	9	Upstream exhaust temperature sensor, not plausible
4809	16	Upstream exhaust temperature sensor, above limit
4809	18	Upstream exhaust temperature sensor, below limit
4810	9	Particle filter, temperature drop not plausible
4810	18	Particle filter, temperature too low during regeneration
4814	2	Coolant water pump actuator, faulty
4814	3	Coolant water pump actuator, short circuit on high side
4814	4	Coolant water pump actuator, short circuit on low side
4814	7	Coolant water pump speed sensor, stuck
4814	8	Coolant water pump Electrically controlled
4814	10	Coolant water pump speed sensor, no signal
5285	1	Boost temperature to high, not plausible
5401	2	EGR bypass actuator, faulty
5401	3	EGR bypass actuator, short circuit high to +24V
5401	4	EGR bypass actuator, short circuit high to ground
5401	5	EGR bypass actuator, open load
5419	2	Throttle M42, CAN interface fault
5419	3	Throttle M42, supply voltage fault
5419	5	Throttle M42, current limited
5419	6	Throttle M42, overload
5419	9	Throttle M42 has detected a CAN timeout
5419	10	Throttle M42, control error
5419	11	Throttle M42, internal fault
5419	12	Throttle M42, software execution error
5419	13	Throttle M42, unsuccessful learning of the reference position
5419	14	Throttle M42 has detected a CAN timeout
5419	16	Throttle M42, too high temperature
5419	19	Throttle M42, CAN timeout
5419	31	Throttle M42, service mode enabled
5421	3	Waste gate actuator, short circuit to +24V
5421	4	Waste gate actuator, short circuit to +24V
5421	5	Waste gate actuator, short circuit to ground
5421	6	Waste gate actuator, short circuit
5543	2	Exhaust brake actuator, control fault
5543	3	Exhaust brake actuator, short circuit to +24V

5543	4	Exhaust brake actuator, short circuit to ground
5543	5	Exhaust brake actuator, stuck in open position
5543	6	Exhaust brake actuator, faulty
5543	7	Exhaust brake actuator, stuck in closed position
5543	12	Exhaust brake actuator, control fault
5543	13	Exhaust brake actuator, fault with stop position
5543	16	Exhaust brake actuator, over temperature
5543	19	Exhaust brake actuator, CAN timeout
5543	21	Exhaust brake actuator, error
5743	2	SCR reagent tank temperature sensor, not plausible
5743	4	SCR reagent tank temperature sensor, short circuit
5743	5	SCR reagent tank temperature sensor, open load
5745	3	SCR water valve, short circuit to battery
5745	5	SCR water valve, open load
5841	1	SCR main unit, reductant quality too low

Transmission

523000	1	Battery low undervoltage
523000	3	Battery overvoltage
523000	4	Battery undervoltage
523001	1	Battery undervoltage during engine start
523010	3	TCU internal 5V power supply overvoltage
523010	4	TCU internal 5V power supply undervoltage
523011	4	TCU internal 7V power supply undervoltage
523020	3	Supply for speed sensors overvoltage
523020	4	Supply for speed sensors undervoltage
523020	6	Supply for speed sensors short to ground
523021	3	Supply for temp. sensors and filter switch overvoltage
523021	4	Supply for temp. sensors and filter switch undervoltage
523021	6	Supply for temp. sensors and filter switch short to ground
523022	3	Supply 1 for sensors overvoltage
523022	4	Supply 1 for sensors undervoltage
523022	6	Supply 1 for sensors short to ground
523030	3	Propvalve power supply 1 overvoltage
523030	4	Propvalve power supply 1 undervoltage
523030	6	Power supply VPS1 short to ground
523031	3	Propvalve power supply 2 overvoltage
523031	4	Propvalve power supply 2 undervoltage
523031	6	Power supply VPS2 short to ground
523040	0	TCU overtemperature

523040	2	TCU temperature invalid value
523045	12	Internal TCU Error 1
523046	12	Internal TCU Error 2
523047	12	Internal TCU Error 3
523048	12	Internal TCU Error 4
523049	12	Unknown transmission controller hardware detected
523100	2	Turbine speed input unknown electrical component
523100	3	Turbine speed sensor input overvoltage
523100	6	Turbine speed sensor input open or short to ground
523100	7	Turbine speed does not match with other speeds
523100	8	Turbine speed direction of rotation unknown
523100	9	Turbine speed unknown
523100	11	Turbine speed direction of rotation does not match other
523105	2	Int. speed sensor 1 input unknown electrical component
523105	3	Int. speed sensor 1 input overvoltage
523105	6	Int. speed sensor 1 input open or short to ground
523105	7	Int. speed 1 does not match with other speeds
523105	8	Int. speed 1 direction of rotation unknown
523105	9	Int. speed 1 unknown
523105	11	Int. speed 1 direction of rotation does not match other
523110	2	Int. speed sensor 2 input unknown electrical component
523110	3	Int. speed sensor 2 input overvoltage
523110	6	Int. speed sensor 2 input open or short to ground
523110	7	Int. speed 2 does not match with other speeds
523110	8	Int. speed 2 direction of rotation unknown
523110	9	Int. speed 2 unknown
523110	11	Int. speed 2 direction of rotation does not match other
523115	2	Output speed sensor input unknown electrical component
523115	3	Output speed sensor input overvoltage
523115	6	Output speed sensor input open or short to ground
523115	7	Output speed does not match with other speeds
523115	8	Output speed direction of rotation unknown
523115	9	Output speed unknown
523115	11	Output speed direction of rotation does not match other
523120	2	Speed sensor input 5 unknown electrical component
523120	3	Speed sensor input 5 overvoltage
523120	6	Speed sensor input 5 open or short to ground
523125	2	Voltage input 1 unknown electrical component
523130	2	Voltage input 2 unknown electrical component
523140	2	Sump temperature input unknown electrical component
523140	3	Sump temperature sensor open circuit or shorted to high source
523140	5	Sump temperature sensor overvoltage
523140	6	Sump temperature sensor short to ground
523145	2	Torque converter/retarder temperature input unknown electrical component

523145	3	Torque converter/retarder temperature open circuit or shorted to high source
523145	5	Torque converter/retarder temperature sensor overvoltage
523145	6	Torque converter/retarder temperature sensor short to ground
523150	2	Current input 1 unknown electrical component
523155	2	Current input 2 unknown electrical component
523155	3	Filter Restriction Switch overvoltage
523155	4	Filter Restriction Switch undervoltage
523155	6	Filter Restriction Switch open circuit or short to ground
523200	0	Clutch A slipping unintentionally
523200	2	Current output 1 unknown electrical component
523200	3	Propvalve for Clutch A short to battery
523200	5	Propvalve for Clutch A open circuit
523200	6	Propvalve for Clutch A short to ground
523200	8	Propvalve for Clutch A short circuit to another valve
523205	0	Clutch B slipping unintentionally
523205	2	Current output 2 unknown electrical component
523205	3	Propvalve for Clutch B short to battery
523205	5	Propvalve for Clutch B open circuit
523205	6	Propvalve for Clutch B short to ground
523205	8	Propvalve for Clutch B short circuit to another valve
523210	0	Clutch C slipping unintentionally
523210	2	Current output 3 unknown electrical component
523210	3	Propvalve for Clutch C short to battery
523210	5	Propvalve for Clutch C open circuit
523210	6	Propvalve for Clutch C short to ground
523210	8	Propvalve for Clutch C short circuit to another valve
523215	0	Clutch D slipping unintentionally
523215	2	Current output 4 unknown electrical component
523215	3	Propvalve for Clutch D short to battery
523215	5	Propvalve for Clutch D open circuit
523215	6	Propvalve for Clutch D short to ground
523215	8	Propvalve for Clutch D short circuit to another valve
523220	0	Clutch R slipping unintentionally
523220	2	Current output 5 unknown electrical component
523220	3	Propvalve for Clutch R short to battery
523220	5	Propvalve for Clutch R open circuit
523220	6	Propvalve for Clutch R short to ground
523220	8	Propvalve for Clutch R short circuit to another valve
523225	0	Clutch F slipping unintentionally
523225	2	Current output 6 unknown electrical component
523225	3	Propvalve for Clutch F short to battery
523225	5	Propvalve for Clutch F open circuit
523225	6	Propvalve for Clutch F short to ground
523225	8	Propvalve for Clutch F short circuit to another valve

523230	0	Clutch V slipping unintentionally
523230	2	Current output 7 unknown electrical component
523230	3	Propvalve for Clutch V short to battery
523230	5	Propvalve for Clutch V open circuit
523230	6	Propvalve for Clutch V short to ground
523230	8	Propvalve for Clutch V short circuit to another valve
523235	0	Clutch E slipping unintentionally
523235	2	Current output 8 unknown electrical component
523235	3	Propvalve for Clutch E short to battery
523235	5	Propvalve for Clutch E open circuit
523235	6	Propvalve for Clutch E short to ground
523235	8	Propvalve for Clutch E short circuit to another valve
523240	0	Lockup Clutch slipping unintentionally
523240	2	Current output 9 unknown electrical component
523240	3	Propvalve for Lockup Clutch short to battery
523240	5	Propvalve for Lockup Clutch open circuit
523240	6	Propvalve for Lockup Clutch short to ground
523240	8	Propvalve for Lockup Clutch short circuit to another valve
523245	2	Current output 10 unknown electrical component
523245	3	Propvalve for Retarder short to battery
523245	5	Propvalve for Retarder open circuit
523245	6	Propvalve for Retarder short to ground
523245	8	Propvalve for Retarder short circuit to another valve
523250	2	Current output 11 unknown electrical component
523250	3	Propvalve for Diff Lock short to battery
523250	5	Propvalve for Diff Lock open circuit
523250	6	Propvalve for Diff Lock short to ground
523250	8	Propvalve for Diff Lock short circuit to another valve
523300	0	Transmission Sump Oil overtemperature
523300	16	Transmission Sump Oil overtemperature
523301	0	Retarder Oil overtemperature
523301	16	Retarder Oil moderately severe overtemperature
523302	0	Torque Converter Oil overtemperature
523302	16	Torque Converter Oil moderately severe overtemperature
523304	0	Filter switch signal out of range
523305	0	Oil Filter contaminated
523310	0	Transmission input torque too high
523320	15	Overspeed at transmission output
523355	0	Clutch KV more severe temperature exceeded
523356	0	Clutch KR more severe temperature exceeded
523360	9	Calibration Data Lost. TCU was not able to read correct calibration parameters
523371	0	Driveline engagement failed
523400	9	Vehicle CAN failure
523401	9	Service CAN failure

523402	9	ECU connection loss
523403	9	VCU connection loss
523404	9	Parking Brake Controller connection loss
523410	9	Message TC1 invalid or timeout
523413	9	Message EEC1 invalid or timeout
523414	9	Message EEC2 invalid or timeout
523415	9	Message EEC3 invalid or timeout
523416	9	Message EC1 invalid or timeout
523417	9	Message B invalid or timeout
523418	9	Message EBC1 invalid or timeout
523419	9	Engine controller signals invalid
523420	9	Message CCVS invalid or timeout
523422	9	Message VI invalid or timeout
523423	0	Engine Brake Demand is not effective
523424	9	Message TSC1R invalid or timeout
523426	9	Message JBERC1 invalid or timeout
523427	9	Message JBRC invalid or timeout
523432	9	Engine brake controller signals invalid
523433	9	Message FANERC1 invalid or timeout
523470	19	Operation Mode command invalid
523471	19	Transmission command invalid
523474	19	Difflock command invalid
523475	19	Torque Converter Lockup command invalid
523476	19	Retarder command Invalid
523480	9	Machine Configuration Invalid
523481	0	Testmode requested but conditions not complied
523500	0	Overspeed engine
523501	0	Engine Speed Limitation is not effective
523502	0	Engine Speed Demand is not effective
523503	0	Engine Torque Limitation is not effective
523504	0	Engine Torque Demand is not effective
523505	0	Neutral shift to prevent engine stall
523506	0	Engine Brake Demand is not effective
523600	0	Safety Function Error
523600	1	Protection Function 1 Unwanted driveaway
523600	2	Protection Function 2 Unwanted driving direction
523600	3	Protection Function 3 Safely limited acceleration (blocked Transmission)
523600	4	Protection Function 4 Safely limited acceleration (Downshift)
523600	5	Protection Function 5 Safe Output
523600	7	Protection Function 7 Unwanted direction change
523600	9	Protection Function 9 Safely limited torque
523600	10	Protection Function 10 Safely limited delayed get into gear
523601	0	Safety related error in Transmission detected
523602	0	Safety related error in Vehicle communication detected

523603	0	Safety Error Reaction failed
523650	0	Neutral selected while vehicle moving

VCU2/VCU3 (Vehicle controller)

521042	2	Tip joystick signal error
521045	5	A/C evaporator temperature sensor open loop
521045	6	A/C evaporator temperature sensor short circuit
521045	13	VCU HVAC misconfiguration
521046	2	Accelerator pedal signal error
521048	2	Gear selector signal error
521063	19	No CAN signal from KP2 keypad
521064	29	No CAN signal from LH steering column switch
521064	30	No CAN signal from RH steering column switch
521071	5	Pressure sensor BR_F (brake front circuit) open loop
521071	6	Pressure sensor BR_F (brake front circuit) short circuit
521072	5	Pressure sensor BR_R (brake rear circuit) open loop
521072	6	Pressure sensor BR_R (brake rear circuit) short circuit
521140	0	High pressure on P1 (pump 1)
521140	1	Low pressure on P1 (pump 1)
521140	5	Pressure sensor P1 (pump 1) open loop
521140	6	Pressure sensor P1 (pump 1) short circuit
521141	5	Pressure sensor B (tip down) open loop
521141	6	Pressure sensor B (tip down) short circuit
521142	1	Low pressure on ACC1 (front)
521142	5	Pressure sensor ACC1 (front) open loop
521142	6	Pressure sensor ACC1 (front) short circuit
521142	17	Low pressure warning on ACC1 (front) *(Theoretical, never transmitted)
521143	1	Low pressure on ACC2 (rear)
521143	5	Pressure sensor ACC2 (rear) open loop
521143	6	Pressure sensor ACC2 (rear) short circuit
521143	17	Low pressure warning on ACC2 (rear) *(Theoretical, never transmitted)
521144	1	Low pressure on ACC3 (common)
521144	5	Pressure sensor ACC3 (common) open loop
521144	6	Pressure sensor ACC3 (common) short circuit
521144	7	Charge pressure not reached on ACC3
521144	17	Low Pressure warning on ACC3 (common) *(Theoretical, never transmitted)
521145	5	Pressure sensor A (tip up) open loop
521145	6	Pressure sensor A (tip up) short circuit
521146	0	High pressure on PBOUT (park brake)
521146	1	Low pressure on PBOUT (park brake)
521146	5	Pressure sensor PBOUT (park brake) open loop
521146	6	Pressure sensor PBOUT (park brake) short circuit

521147	1	Emergency steering pressure low
521147	5	Pressure sensor Emergency Steering open loop
521147	6	Pressure sensor Emergency Steering short circuit
521148	5	Pressure sensor BR_F (brake front circuit) open loop
521148	6	Pressure sensor BR_F (brake front circuit) short circuit
521149	5	Pressure sensor BR_R (brake rear circuit) open loop
521149	6	Pressure sensor BR_R (brake rear circuit) short circuit
521161	0	Front WDB oil temperature very high
521161	5	Front WDB oil temperature sensor open loop
521161	6	Front WDB oil temperature sensor short circuit
521161	15	Front WDB oil temperature high
521162	0	Hydraulic oil temperature very high
521162	5	Hydraulic oil temperature sensor open loop
521162	6	Hydraulic oil temperature sensor short circuit
521162	15	Hydraulic oil temperature high
521165	0	Front hubs oil temperature very high
521165	5	Front hubs oil temperature sensor open loop
521165	6	Front hubs oil temperature sensor short circuit
521165	15	Front hubs oil temperature high
521170	1	Front WDB oil level too low
521171	31	Emergency STOP switch activated
521172	1	Coolant level low
521172	5	Coolant level sensor open loop
521173	0	Engine air filter clogged
521174	0	Hydraulic return filter clogged
521175	4	WIF sensor signal too low (short circuit)
521175	3	WIF sensor signal too high (open loop, missing)
521175	16	WIF sensor - water detected (need drain)
521180	2	Tip Up valve abnormal drive value
521180	5	Tip Up valve open loop
521181	2	Tip Down valve abnormal drive value
521181	5	Tip Down valve open loop
521182	2	Fan Drive valve abnormal drive value
521182	5	Fan Drive valve open loop
521183	2	Engine Brake valve abnormal drive value
521183	5	Engine Brake valve open loop
521184	2	Brake Charge valve abnormal drive value
521184	5	Brake Charge valve open loop
521184	7	Brake Charge pressure not reached on ACC1/ACC2/ACC3
521190	5	Brake Charge valve open loop
521190	6	Brake Charge valve short circuit
521191	5	Park Brake valve open loop
521191	6	Park Brake valve short circuit
521191	7	Abnormal pressure on PBOU (park brake)

521192	5	Float valve open loop
521192	6	Float valve short circuit
521193	5	Rear Difflock valve open loop
521193	6	Rear Difflock valve short circuit
521194	5	Fan Stop valve open loop
521194	6	Fan Stop valve short circuit
521196	5	Suspension LH Up valve open loop
521196	6	Suspension LH Up valve short circuit
521197	5	Suspension LH Down valve open loop
521197	6	Suspension LH Down valve short circuit
521198	5	Suspension RH Up valve open loop
521198	6	Suspension RH Up valve short circuit
521199	5	Suspension RH Down valve open loop
521199	6	Suspension RH Down valve short circuit
521200	2	Fuel tank level sensor signal error
521201	1	Hydraulic tank level critical low
521201	2	Hydraulic tank level sensor signal error
521201	15	Hydraulic tank level high
521201	17	Hydraulic tank level low
521202	4	14V supply output overload/short circuit (<13V)
521202	3	14V supply output too high (>15V)
521202	0	Transmission oil level high
521202	1	Transmission oil level low
521202	2	Transmission oil level sensor signal error
521203	0	Engine air filter clogged
521203	5	Engine air filter sensor open loop (missing)
521203	3	Engine air filter sensor Overrange (>5V)
521204	1	Coolant level low
521204	5	Coolant level sensor open loop
521207	1	WDB tank level critical low
521207	2	WDB tank level sensor signal error
521207	15	WDB tank level high
521207	17	WDB tank level low
521222	2	Transmission output speed sensor error/missing
521230	18	Lubrication system low grease level
521230	19	No CAN signal from lubrication system (7km/h speed limit)
521230	31	Lubrication system error (7km/h speed limit)
521260	19	No CAN signal from FU3 (front frame)
521261	19	No CAN signal from WL3 (left wheel arm)
521262	19	No CAN signal from WR3 (right wheel arm)
521310	5	Direction light front right open loop
521310	6	Direction light front right short circuit
521311	5	Main low beam right open loop
521311	6	Main low beam right short circuit

521330	5	Direction light front left open loop
521330	6	Direction light front left short circuit
521331	5	Main low beam left open loop
521331	6	Main low beam left short circuit
521350	5	A/C clutch open circuit
521350	6	A/C clutch short circuit
521351	5	Pressure sensor HP (A/C HP) open loop
521351	6	Pressure sensor HP (A/C HP) short circuit
521352	5	Pressure sensor LP (A/C LP) open loop
521352	6	Pressure sensor LP (A/C LP) short circuit
521410	5	Direction light rear right open loop
521410	6	Direction light rear right short circuit
521411	5	Direction light rear left open loop
521411	6	Direction light rear left short circuit
521418	5	Brake light right open loop
521418	6	Brake light right short circuit
521419	5	Brake light left open loop
521419	6	Brake light left short circuit
521420	19	No CAN signal from WB2 or RU1 (rear frame)
521421	0	Rear RH WDB oil temperature very high
521421	5	Rear RH WDB oil temperature sensor open loop
521421	6	Rear RH WDB oil temperature sensor short circuit
521421	15	Rear RH WDB oil temperature high
521422	0	Rear LH WDB oil temperature very high
521422	5	Rear LH WDB oil temperature sensor open loop
521422	6	Rear LH WDB oil temperature sensor short circuit
521422	15	Rear LH WDB oil temperature high
521424	0	Body up (10km/h speed limit)
521425	19	No CAN signal from RU3 (rear frame)
521426	0	Rear axle oil temperature very high
521426	5	Rear axle oil temperature sensor open loop
521426	6	Rear axle oil temperature sensor short circuit
521426	15	Rear axle oil temperature high
521428	0	Rear hubs oil temperature very high
521428	5	Rear hubs oil temperature sensor open loop
521428	6	Rear hubs oil temperature sensor short circuit
521428	15	Rear hubs oil temperature high
521750	19	No CAN signal from OLP sensor unit
521750	4	OLP strain under-range
521750	3	OLP strain over-range
521800	31	Webasto F00 Heater lock-out or control unit defect
521801	31	Webasto F01 No start (after 2 starting attempts)
521802	31	Webasto F02 Flame abort
521803	31	Webasto F03 Supply undervoltage or overvoltage

521804	31	Webasto F04 Flame was detected prior to combustion
521805	31	Webasto F05 Flame monitor defective
521806	31	Webasto F06 Coolant temperature sensor defective
521807	31	Webasto F07 Metering pump defective
521808	31	Webasto F08 Combustion-air fan unit defective
521809	31	Webasto F09 Glow plug defective
521810	31	Webasto F10 Overheating
521811	31	Webasto F11 Circulation pump defective
521812	31	Webasto F12 Battery main switch defective
521813	31	Webasto F13 Operation of vehicle fan defective
521814	31	Webasto F14 Overheating sensor defective
521815	31	Webasto F15 Pre-heating/ignition circuit defective
521816	31	Webasto F16 Exhaust gas temperature too high
521817	31	Webasto F17 Exhaust temperature sensor defective
521827	31	Webasto feedback signal not detected (VCU3)
521828	31	Webasto activation output short circuit (VCU3)
521829	31	XT1 Webasto feedback signal not detected
521830	31	XT1 Webasto activation output short circuit
521831	31	Webasto F?? Unknown fault code (>F17)
521880	31	Vehicle outside Geofence (vehicle speed limit)
521900	2	Accelerator/tip joystick 5V supply fault
521901	1	Low battery voltage (limited functionality)
521902	13	VCU not configured
521902	23	VCU option input 1 invalid configuration
521902	24	VCU option input 1 invalid configuration
521902	25	VCU option output 1 invalid configuration
521902	26	VCU option output 2 invalid configuration
521902	27	VCU keypad F1 invalid configuration
521902	28	VCU keypad F2 invalid configuration
521902	29	VCU keypad F3 invalid configuration
521902	30	VCU keypad F4 invalid configuration
521902	31	VCU invalid configuration

TPMS (Tire Pressure Monitoring System)

168	3	System Voltage circuit, voltage above threshold
168	4	Battery voltage 1 for engine control unit is low
611	2	External Receiver 1 bus signal failures
611	14	External Receivers circuit open/short
612	13	Configuration is missing
612	14	RF jamming
612	31	No tire sensors mounted
613	12	Memory failure
613	31	Controller failure

639	31	HS-CAN Communication Bus
7113	1	Tire 1: Very low pressure
7113	18	Tire 1: Low pressure
7114	1	Tire 2: Very low pressure
7114	18	Tire 2: Low pressure
7115	1	Tire 3: Very low pressure
7115	18	Tire 3: Low pressure
7116	1	Tire 4: Very low pressure
7116	18	Tire 4: Low pressure
7117	1	Tire 5: Very low pressure
7117	18	Tire 5: Low pressure
7118	1	Tire 6: Very low pressure
7118	18	Tire 6: Low pressure
7153	0	Tire 1: Sensor shutdown due to high temperature
7153	16	Tire 1: Very high temperature
7154	0	Tire 2: Sensor shutdown due to high temperature
7154	16	Tire 2: Very high temperature
7155	0	Tire 3: Sensor shutdown due to high temperature
7155	16	Tire 3: Very high temperature
7156	0	Tire 4: Sensor shutdown due to high temperature
7156	16	Tire 4: Very high temperature
7157	0	Tire 5: Sensor shutdown due to high temperature
7157	16	Tire 5: Very high temperature
7158	0	Tire 6: Sensor shutdown due to high temperature
7158	16	Tire 6: Very high temperature
7193	7	Tire 1: Check sensor/demount tire
7193	10	Tire 1: Wheel is stuck
7193	14	Tire 1: Check sensor/demount tire
7193	31	Tire 1: No signal
7194	7	Tire 2: Check sensor/demount tire
7194	10	Tire 2: Wheel is stuck
7194	14	Tire 2: Check sensor/demount tire
7194	31	Tire 2: No signal
7195	7	Tire 3: Check sensor/demount tire
7195	10	Tire 3: Wheel is stuck
7195	14	Tire 3: Check sensor/demount tire
7195	31	Tire 3: No signal
7196	7	Tire 4: Check sensor/demount tire
7196	10	Tire 4: Wheel is stuck
7196	14	Tire 4: Check sensor/demount tire
7196	31	Tire 4: No signal
7197	7	Tire 5: Check sensor/demount tire
7197	10	Tire 5: Wheel is stuck
7197	14	Tire 5: Check sensor/demount tire

7197	31	Tire 5: No signal
7198	7	Tire 6: Check sensor/demount tire
7198	10	Tire 6: Wheel is stuck
7198	14	Tire 6: Check sensor/demount tire
7198	31	Tire 6: No signal
7233	31	Tire 1: Fast pressure loss
7234	31	Tire 2: Fast pressure loss
7235	31	Tire 3: Fast pressure loss
7236	31	Tire 4: Fast pressure loss
7237	31	Tire 5: Fast pressure loss
7238	31	Tire 6: Fast pressure loss
7273	11	Tire 1: Sensor defect
7274	11	Tire 2: Sensor defect
7275	11	Tire 3: Sensor defect
7276	11	Tire 4: Sensor defect
7277	11	Tire 5: Sensor defect
7278	11	Tire 6: Sensor defect

Main Display

520200	19	No contact with ECU (Engine) on CAN1
520201	19	No contact with TCU (Transmission) on CAN1
520202	19	No contact with VCU (Vehicle controller) on CAN1
520203	19	No contact with VCU (Vehicle controller) on CAN2
520204	31	Gear shift is restricted

Lubrication

628	12	Program memory - Warning Parameter checksum error
629	12	Controller - Clock error
3597	4	Bad wiring or battery low
5519	18	Empty grease reservoir
5521	11	Error Lubrication system fault
5522	7	No pressure in outlet A
5523	7	No pressure in outlet B
5524	7	Unexpected pressure before cycle in outlet A
5525	7	Unexpected pressure before cycle in outlet B
5526	11	Pressure switch circuit
5527	5	Lubrication pump open load
5527	6	Lubrication pump over current
5528	5	Open load valve 1
5528	6	Over current valve 1
5529	5	Open load valve 2
5529	6	Over current valve 2
5530	11	Lubrication pump unknown cause
5531	4	Controller - Clock battery low