OBD communication protocol(s) supported:

ISO 15765-4:2011: ‘Road vehicles — Diagnostics on Controller Area Network (CAN) — Part 4: Requirements for emission-related systems’, dated 1 November 2001

Service 01

PID	Description
01	Monitor status since DTCs cleared MIL, # of DTC’s Number of Emission D.T.C.(s) MIL Status Continuous Diagnostic Test Supported Misfire Monitoring Fuel System Monitoring Comprehensive Component Monitoring Reserved/J1979 Misfire Monitoring Tests Complete = 0 Fuel System Monitoring Tests Complete = 0 Comprehensive Component Monitoring Tests Complete = 0 Reserved/J1979 Non-Continuous Test Supported Enhanced Evaporative Purge System Oxygen Sensor Oxygen Sensor Heater Non-Continuous Test Results Enhanced Evaporative Purge System Test Complete Oxygen Sensor Test Complete Oxygen Sensor Heater Test Complete
03	Current Fuel System Status (Fuel System. 1) Current Fuel System Status (Fuel System 2)
04	Current Calculated Load value
05	Current Undefaulted Coolant Temperature
06	Current Short Term Fuel Trim (Bank 1)
07	Current Long Term Fuel Trim (Bank 1)
08	Current Short Term Fuel Trim (Bank 2)
09	Current Long Term Fuel Trim (Bank2)
0B	Current Undefaulted Manifold Absolute Pressure
0C	Current Undefaulted Engine RPM
0D	Current Undefaulted Vehicle Speed
0E	Current Commanded Ignition timing advance Cyl#1
0F	Current Undefaulted Intake Air Temperature
11	Current Undefaulted Absolute Throttle Position A
13	Location of Manufacturer equipped O2 sensors
14	(B1-S1) Undefaulted O2 Voltage (B1-S1) Short Term Fuel Trim

15	(B1-S2) Undefaulted O2 Voltage (B1-S2) Short Term Fuel Trim
18	(B2-S1) Undefaulted O2 Voltage (B2-S1) Short Term Fuel Trim
1C	On-board Diagnostic System type
1F	Time Since Engine Start
20	Supported Mode 1 PIDS $21- $40
21	MIL On Odometer
2F	Fuel Level Input
33	Barometric Pressure
40	Supported Mode 1 PIDS $41- $60
4D	Time run by the engine while MIL is activated
51	Type of fuel currently being utilized by the vehicle
60	Supported Mode 1 PIDS $61- $80
7F	Support of Engine Run Time Total Engine Run Time Total Idle Run Time Total Run Time With PTO Active

Service 02

Outputs	Description
02	Failure ID
03	Current Fuel System Status (Fuel System. 1)
04	Current Calculated Load value
05	Current Undefaulted Coolant Temperature
07	Current Long Term Fuel Trim – (Bank 1)
0B	Current Undefaulted Manifold Absolute Pressure
0C	Current Undefaulted Engine RPM
0D	Current Undefaulted Vehicle Speed
11	Current Undefaulted Absolute Throttle Position A
7F	Support of Engine Run Time Total Engine Run Time Total Idle Run Time Total Run Time With PTO Active

Service 03

Fault Code	**Description of DTC**	Class	Active MIL
P 0118	Engine Coolant Temperature Sensor Circuit High / Open Circuit	2	√
P 0117	Engine Coolant Temperature Sensor Circuit Low	2	√
P 0116	Engine Coolant Temperature Sensor signal performance	2	√
P 1116	Engine Coolant Temperature Sensor signal out of range	2	√
P 0335	Crankshaft Position Sensor "A" Circuit	1	√
P 2300	Ignition Coil "A" Primary Control Circuit Low / Open Circuit	1	√
P 0123	Throttle Position Sensor/Switch "A" Circuit High	1	√
P 0122	Throttle Position Sensor/Switch "A" Circuit Low / Open Circuit	1	√
P 0232	Fuel Pump circuit short High	1	√
P 0231	Fuel Pump circuit short Low / Open Circuit	1	√
P 0601	Internal Control Module Memory Checksum Error	1	√
P 0262	Cylinder 1 Fuel Injector "A" Circuit High	1	√
P 0261	Cylinder 1 Fuel Injector "A" Circuit Low / Open Circuit	1	√
P 0108	Manifold Absolute Pressure Sensor Circuit High	1	√
P 0107	Manifold Absolute Pressure Sensor Circuit Low/Open Circuit	1	√
P 3106	Manifold Absolute Pressure Sensor rationality at low TPS	2	√
P 0105	Manifold Absolute Pressure Sensor signal stuck	2	√
P 0113	Intake Air Temperature Sensor Circuit High / Open Circuit	1	√
P 0112	Intake Air Temperature Sensor Circuit Low	1	√
P 0111	Intake Air Temperature Sensor signal stuck	2	√
P 0114	Intake Air Temperature Sensor Circuit Intermittent	2	√
P 0132	O2 Sensor Circuit High Voltage Bank 1 Sensor 1	2	√
P 0131	O2 Sensor Circuit Low Voltage Bank 1 Sensor 1 / Open Circuit	2	√
P 2195	O2 Sensor Signal Lean at PE Bank 1 Sensor 1	2	√
P 014D	O2 Sensor Slow Response - Lean to Rich Bank 1 Sensor 1	3	√
P 014C	O2 Sensor Slow Response - Rich to Lean Bank 1 Sensor 1	3	√
P 0031	O2 Sensor Heater Control Circuit Low Bank 1 Sensor 1 / Open Circuit	1	√
P 0032	O2 Sensor Heater Control Circuit High Bank 1 Sensor 1	1	√
P 00D1	O2 Sensor Heater current low Bank 1 Sensor 1	2	√
P 0301	Cylinder 1 Misfire Detected	3	√
P 0500	Vehicle Speed Sensor "A" Circuit	2	√
P 0505	Idle air control system error	2	√

Service 06

MID	Component	Parameter	Min/Max Test limit	Description	MID
$01	O2 Bank-1 Sensor-1	Rich to Lean sensor Switch Time (calculated)	Min: 0 Max: calibrated	average switch-time from Rich to Lean	$01
$01	O2 Bank-1 Sensor-1	Lean to Rich sensor Switch Time (calculated)	Min: 0 Max: calibrated	average switch-time from Lean to Rich	$01
$41	O2 Bank-1 Sensor-1	O2 Under Heater Current	Min: calculated Max: 65.535 Amp	Under Heater Curren	$41
$A2	Misfire Cylinder-1	Misfire Counts (calculated)	Min: 0 Max: FFFF	Misfire Counts for last/current driving cycle	$A2

Service 09

Info Type	Description	Size in Byte
04	Calibration ID’s Calibration characters are ASCII	16
06	Calibration Verification Number of calibration area	4
08	In-use Performance Tracking：	8
	OBD Monitoring Conditions Encountered Counts	2
	Ignition Counter 2 counts	2
	Front O2 Sensor Monitor Completion Counts Bank 1	2
	Front O2 Sensor Monitor Conditions Encountered Counts Bank 1	2