1FDEE3FN2MDCxxxxx

Steve Caruso Automotive Consultant

OBD2TRAINING.COM

Date/Time:	10/06/2020, 03:39:39 pm
Measurement file:	C:\Users\Public\Documents\OBDrScanTool.dra CarDAQ-Plus 3, FD
Interface:	Steve Caruso
Author:	
Location:	Steve Caruso Automotive Consultant
Department:	
Comment:	1FDEE3FN2MDCxxxxx
Vehicle:	2020 E350 CONVERSION VAN 2300 MILES
Description:	1FDEE3FN2MDCxxx
Output file:	
VIN:	

Successfully read ECUs

🔧 [33 Scan-Tool](#)

Symbols

✔ No fault present

⚡ Fault present

🔧 MIL on

◆ incomplete

✖ failed

— missing

33: Scan-Tool

Identification data

Address word	33
Name	Scan-Tool
Protocol	ISO 15765-4 (CAN)
Diagnostic data set	-default-
Description file	

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33: MODULES

⚑ ⚙ Module: E8 PCM-PowertrainCtrl

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Supported Modes and PIDs

⬆ Module E8 - Readiness:

Monitor	PID 01		PID 41	
	supported	complete	enabled	complete
Misfire monitoring	yes	yes	yes	no
Fuel system monitoring	yes	yes	yes	no
Comprehensive component monitoring	yes	yes	yes	no
Catalyst monitoring	yes	yes	yes	no
Heated catalyst monitoring	no	yes	no	yes
Evaporative system monitoring	yes	no	no	no
Secondary air system monitoring	no	yes	no	yes
PM filter monitoring	no	yes	no	yes
Oxygen sensor monitoring	yes	yes	yes	no
Oxygen sensor heater monitoring	yes	yes	no	yes
EGR and/or VVT system monitoring	yes	yes	no	yes

Module E8 - Mode 1: Current powertrain diagnostic data

Name	Measured value	Unit	Comment
PID01	1000 0100 0000 0111 1110 0101 0000 0100	Bit	Monitor status since DTCs cleared • MIL on, 4 fault code entries • Misfire monitoring supported and complete • Fuel system monitoring supported and complete • Comprehensive component monitoring supported and complete • Catalyst monitoring supported and complete • Heated catalyst monitoring not supported • Evaporative system monitoring supported • Secondary air system monitoring not supported • PM filter monitoring not supported • Oxygen sensor monitoring supported and complete • Oxygen sensor heater monitoring supported and complete • EGR and/or VVT system monitoring supported and complete
PID03	0000 0000	Bit	Fuel system A status
PID03	0000 0000	Bit	Fuel system B status
PID04	0.0	%	Calculated load value
PID05	37	°C	Engine coolant temperature
PID06	0.0	%	Short term fuel trim - Bank 1
PID07	-7.8	%	Long term fuel trim - Bank 1
PID08	0.0	%	Short term fuel trim - Bank 2
PID09	-8.6	%	Long term fuel trim - Bank 2
PID0C	0	1/min	Engine RPM
PID0D	0	km/h	Vehicle speed sensor
PID0E	0.0	°	Ignition timing advance for #1 cylinder
PID0F	34	°C	Intake air temperature
PID10	2.20	g/s	Air flow rate from mass air flow sensor
PID11	13.7	%	Absolute throttle position
PID13	0001 0011	Bit	Location of oxygen sensors • Bank 1 Sensor 1 • Bank 1 Sensor 2

Name	Measured value	Unit	Comment
			• Bank 2 Sensor 1
PID15	1.275	V	Oxygen sensor output voltage (Value = FF) Bank 1 Sensor 2
PID15	99.2	%	Short term fuel trim (Value = FF) Bank 1 Sensor 2
PID1C	03	Hex	OBD requirements to which vehicle or engine is certified OBD and OBD II
PID1E	0000 0000	Bit	Auxiliary input status
PID1F	0	s	Time since engine start
PID21	25	km	Distance traveled while MIL is activated
PID2E	0.0	%	Commanded evaporative purge
PID2F	93.7	%	Fuel level input
PID30	19		Number of warm-ups since DTCs cleared
PID31	3644	km	Distance traveled since DTCs cleared
PID33	101	kPa	Barometric pressure
PID34	0.000	Lambda	Equivalence ratio Bank 1 Sensor 1
PID34	0.00	mA	Oxygen sensor current Bank 1 Sensor 1
PID38	0.000	Lambda	Equivalence ratio Bank 2 Sensor 1
PID38	0.00	mA	Oxygen sensor current Bank 2 Sensor 1
PID3C	2.7	°C	Catalyst temperature Bank 1 Sensor 1
PID41	0000 0000 0111 0111 0010 0001 0010 0101	Bit	Monitor status this driving cycle • Misfire monitoring enabled • Fuel system monitoring enabled • Comprehensive component monitoring enabled • Catalyst monitoring enabled • Heated catalyst monitoring disabled and complete • Evaporative system monitoring disabled • Secondary air system monitoring disabled and complete • PM filter monitoring disabled and complete • Oxygen sensor monitoring enabled • Oxygen sensor heater monitoring disabled and complete • EGR and/or VVT system monitoring disabled and complete
PID42	12.550	V	Control module voltage
PID43	0.0	%	Absolute load value

Name	Measured value	Unit	Comment
PID44	1.000	Lambda	Fuel/Air commanded equivalence ratio
PID45	7.5	%	Relative throttle position
PID46	34	°C	Ambient air temperature
PID49	15.3	%	Accelerator pedal position D
PID4A	7.8	%	Accelerator pedal position E
PID4C	9.0	%	Commanded throttle actuator control
PID51	01	Hex	Type of fuel currently being utilized by the internal combustion engine (Gasoline/Petrol)
PID54	34	Pa	Evap system vapor pressure
PID56	0.0	%	Long term secondary O2 sensor fuel trim - Bank 1
PID62	0	%	Actual engine - percent torque
PID63	910	Nm	Engine reference torque
PID65	0000 0001		Supportbyte
PID65	0000	Bit	Auxiliary Inputs/Outputs Status • Power Take Off not active (OFF)
PID68	0000 0001		Supportbyte
PID68	34	°C	Intake Air Temperature Bank 1 Sensor 1
PID7F	0000 0111		Supportbyte
PID7F	159998	Time	Total Engine Run Time
PID7F	27882	Time	Total Idle Run Time
PID7F	0	Time	Total Run Time With PTO Active
PID8E	0	%	Engine Friction - Percent Torque
PID9D	0.00	g/s	Engine fuel rate
PID9D	0.00	g/s	Vehicle fuel rate
PID9E	0.0	kg/h	Engine Exhaust Flow Rate
PIDA3	0000 0010		Supportbyte
PIDA3	34	Pa	Evap System Vapor Pressure A (wide range)
PIDA6	3645.5	km	Vehicle Odometer

⬆ Module E8 - Mode 2: Current freeze frame data

Name	Measured value	Unit	Comment
FRAME 0			
PID01	1000 0001 0010 0111 1110 0101 0010 0101	Bit	Monitor status since DTCs cleared • MIL on, 1 fault code entries • Misfire monitoring supported and complete • Fuel system monitoring supported • Comprehensive component monitoring supported and complete • Catalyst monitoring supported • Heated catalyst monitoring not supported • Evaporative system monitoring supported • Secondary air system monitoring not supported • PM filter monitoring not supported • Oxygen sensor monitoring supported • Oxygen sensor heater monitoring supported and complete • EGR and/or VVT system monitoring supported and complete
PID02	P0522		Engine Oil Pressure Sensor/Switch "A" Low
PID03	0000 0001	Bit	Fuel system A status • Open loop - has not yet satisfied conditions
PID03	0000 0001	Bit	Fuel system B status • Open loop - has not yet satisfied conditions
PID04	38.8	%	Calculated load value
PID05	30	°C	Engine coolant temperature
PID06	0.0	%	Short term fuel trim - Bank 1
PID07	1.6	%	Long term fuel trim - Bank 1
PID08	0.0	%	Short term fuel trim - Bank 2
PID09	3.9	%	Long term fuel trim - Bank 2
PID0C	967	1/min	Engine RPM
PID0D	5	km/h	Vehicle speed sensor
PID0E	8.5	°	Ignition timing advance for #1 cylinder
PID0F	27	°C	Intake air temperature
PID10	27.41	g/s	Air flow rate from mass air flow sensor

Name	Measured value	Unit	Comment
PID11	15.7	%	Absolute throttle position
PID15	1.275	V	Oxygen sensor output voltage (Value = FF) Bank 1 Sensor 2
PID15	99.2	%	Short term fuel trim (Value = FF) Bank 1 Sensor 2
PID1E	0000 0000	Bit	Auxiliary input status
PID1F	4	s	Time since engine start
PID2E	0.0	%	Commanded evaporative purge
PID2F	0.0	%	Fuel level input
PID30	0		Number of warm-ups since DTCs cleared
PID31	2	km	Distance traveled since DTCs cleared
PID33	98	kPa	Barometric pressure
PID34	0.000	Lambda	Equivalence ratio Bank 1 Sensor 1
PID34	0.00	mA	Oxygen sensor current Bank 1 Sensor 1
PID38	0.000	Lambda	Equivalence ratio Bank 2 Sensor 1
PID38	0.00	mA	Oxygen sensor current Bank 2 Sensor 1
PID3C	6.5	°C	Catalyst temperature Bank 1 Sensor 1
PID41	0000 0000 0111 0100 1100 0000 1110 0101	Bit	Monitor status this driving cycle • Misfire monitoring disabled • Fuel system monitoring disabled • Comprehensive component monitoring enabled • Catalyst monitoring disabled • Heated catalyst monitoring disabled and complete • Evaporative system monitoring disabled • Secondary air system monitoring disabled and complete • PM filter monitoring disabled and complete • Oxygen sensor monitoring disabled • Oxygen sensor heater monitoring enabled • EGR and/or VVT system monitoring enabled
PID43	29.8	%	Absolute load value
PID44	0.997	Lambda	Fuel/Air commanded equivalence ratio
PID45	9.8	%	Relative throttle position
PID46	27	°C	Ambient air temperature

Name	Measured value	Unit	Comment
PID49	18.0	%	Accelerator pedal position D
PID4A	9.0	%	Accelerator pedal position E
PID4C	10.6	%	Commanded throttle actuator control
PID51	01	Hex	Type of fuel currently being utilized by the internal combustion engine (Gasoline/Petrol)
PID54	-17	Pa	Evap system vapor pressure
PID56	0.0	%	Long term secondary O2 sensor fuel trim - Bank 1
PID65	0000 0001		Supportbyte
PID65	0000	Bit	Auxiliary Inputs/Outputs Status • Power Take Off not active (OFF)
PID68	0000 0001		Supportbyte
PID68	27	°C	Intake Air Temperature Bank 1 Sensor 1
PIDA3	0000 0010		Supportbyte
PIDA3	-16	Pa	Evap System Vapor Pressure A (wide range)
PIDA6	3.5	km	Vehicle Odometer

🔼 Module E8 - Mode 3: Emission-related diagnostic trouble codes

PCode	Fault
P0128	Coolant Thermostat (Coolant Temperature Below Thermostat Regulating Temperature)
P0355	Ignition Coil "E" Primary Control Circuit/Open
P0522	Engine Oil Pressure Sensor/Switch "A" Low
P0523	Engine Oil Pressure Sensor/Switch "A" High

🔼 Module E8 - Mode 6: Monitoring test results for specific monitored systems

Name	TID (hex)	UID (hex)	Test value	min. limit	max. limit	Unit	Comment
MID01	87	10	0.000	0.000	0.400	s	Exhaust Gas Sensor Monitor Bank 1 - Sensor 1

Name	TID (hex)	UID (hex)	Test value	min. limit	max. limit	Unit	Comment
MID01	88	10	0.000	0.000	0.400	s	Exhaust Gas Sensor Monitor Bank 1 - Sensor 1
MID02	85	B1	-11198	-30000	0	mV/s	Exhaust Gas Sensor Monitor Bank 1 - Sensor 2
MID02	87	0A	0.122070	0.000000	0.219970	V	Exhaust Gas Sensor Monitor Bank 1 - Sensor 2
MID02	88	0A	1.011960	0.499999	4.999987	V	Exhaust Gas Sensor Monitor Bank 1 - Sensor 2
MID05	87	10	0.000	0.000	0.400	s	Exhaust Gas Sensor Monitor Bank 2 - Sensor 1
MID05	88	10	0.000	0.000	0.400	s	Exhaust Gas Sensor Monitor Bank 2 - Sensor 1
MID21	81	20	0.1250000	0.0000000	0.3554688		Catalyst Monitor Bank 1
MID35	84	1C	0.00	0.00	24.00	°	VVT Monitor Bank 1
MID35	85	1C	0.00	0.00	17.00	°	VVT Monitor Bank 1
MID39	82	FE	-1992.50	-8192.00	-1992.50	Pa	EVAP Monitor (Cap Off, 0.150")
MID3A	83	FE	77.50	-8192.00	1245.25	Pa	EVAP Monitor (0.090")
MID3C	81	FE	0.00	0.00	0.00	Pa	EVAP Monitor (0.020")
MID3C	82	FE	0.00	0.00	0.00	Pa	EVAP Monitor (0.020")
MID3C	83	03	0.00	0.00	0.00		EVAP Monitor (0.020")
MID3D	88	FE	149.25	-747.25	8191.75	Pa	Purge Flow Monitor
MID81	80	20	0.0000000	0.0000000	0.7890625		Fuel System Monitor Bank 1
MID82	80	20	0.0000000	0.0000000	0.7890625		Fuel System Monitor Bank 2
MIDA1	80	30	0.000000	0.000000	11.998152	%	Misfire Monitor General Data
MIDA1	81	30	0.048829	0.000000	0.918592	%	Misfire Monitor General Data
MIDA1	84	16	298.6	-40.0	764.1	°C	Misfire Monitor General Data
MIDA2	0B	24	0	0	65535	counts	Misfire Cylinder 1 Data
MIDA2	0C	24	3	0	65535	counts	Misfire Cylinder 1 Data
MIDA2	80	30	0.000000	0.000000	11.998152	%	Misfire Cylinder 1 Data
MIDA2	81	30	0.000000	0.000000	0.918592	%	Misfire Cylinder 1 Data
MIDA3	0B	24	0	0	65535	counts	Misfire Cylinder 2 Data
MIDA3	0C	24	5	0	65535	counts	Misfire Cylinder 2 Data
MIDA3	80	30	0.000000	0.000000	11.998152	%	Misfire Cylinder 2 Data

Name	TID (hex)	UID (hex)	Test value	min. limit	max. limit	Unit	Comment
MIDA3	81	30	0.024414	0.000000	0.918592	%	Misfire Cylinder 2 Data
MIDA4	0B	24	0	0	65535	counts	Misfire Cylinder 3 Data
MIDA4	0C	24	2	0	65535	counts	Misfire Cylinder 3 Data
MIDA4	80	30	0.000000	0.000000	11.998152	%	Misfire Cylinder 3 Data
MIDA4	81	30	0.000000	0.000000	0.918592	%	Misfire Cylinder 3 Data
MIDA5	0B	24	0	0	65535	counts	Misfire Cylinder 4 Data
MIDA5	0C	24	1	0	65535	counts	Misfire Cylinder 4 Data
MIDA5	80	30	0.000000	0.000000	11.998152	%	Misfire Cylinder 4 Data
MIDA5	81	30	0.000000	0.000000	0.918592	%	Misfire Cylinder 4 Data
MIDA6	0B	24	0	0	65535	counts	Misfire Cylinder 5 Data
MIDA6	0C	24	10	0	65535	counts	Misfire Cylinder 5 Data
MIDA6	80	30	0.000000	0.000000	11.998152	%	Misfire Cylinder 5 Data
MIDA6	81	30	0.000000	0.000000	0.918592	%	Misfire Cylinder 5 Data
MIDA7	0B	24	0	0	65535	counts	Misfire Cylinder 6 Data
MIDA7	0C	24	5	0	65535	counts	Misfire Cylinder 6 Data
MIDA7	80	30	0.000000	0.000000	11.998152	%	Misfire Cylinder 6 Data
MIDA7	81	30	0.024414	0.000000	0.918592	%	Misfire Cylinder 6 Data
MIDA8	0B	24	0	0	65535	counts	Misfire Cylinder 7 Data
MIDA8	0C	24	3	0	65535	counts	Misfire Cylinder 7 Data
MIDA8	80	30	0.000000	0.000000	11.998152	%	Misfire Cylinder 7 Data
MIDA8	81	30	0.000000	0.000000	0.918592	%	Misfire Cylinder 7 Data
MIDA9	0B	24	0	0	65535	counts	Misfire Cylinder 8 Data
MIDA9	0C	24	0	0	65535	counts	Misfire Cylinder 8 Data
MIDA9	80	30	0.000000	0.000000	11.998152	%	Misfire Cylinder 8 Data
MIDA9	81	30	0.000000	0.000000	0.918592	%	Misfire Cylinder 8 Data

⬆ Module E8 - Mode 7: Emission-related diagnostic trouble codes detected during current or last completed driving cycle

PCode	Fault
P0128	Coolant Thermostat (Coolant Temperature Below Thermostat Regulating Temperature)

⬆ Module E8 - Mode 9: Vehicle information

Name			
INFO-TYPE02	Measured value	Unit	Comment
	1FDEE3FN2MDCxxxxx		Vehicle Identification Number(VIN)
INFO-TYPE04	Measured value	Unit	Comment
	KVMK1A8.H32		Calibration Identification (CALID)
INFO-TYPE06	Measured value	Unit	Comment
	0A FB 14 5F		Calibration Verification Numbers (CVN)
INFO-TYPE08	Measured value	Unit	Comment
	00 13 00 A6 00 01 00 13 00 00 00 00 00 16 00 13 00 16 00 13 00 1D 00 13 00 00 00 00 00 00 00 03 00 0A 00 13 00 00 00 00 00 15 00 13 00 15 00 13 00 00 00 00 00 00 00 00		In-use Performance Tracking for Spark Ignition Engines
OBDCOND	19		General Denominator, OBD Monitoring Conditions Encountered Counts
IGNCNTR	166		Ignition Cycle Counter
CATCOMP1	1		Numerator, Catalyst Monitor Completion Counts Bank 1
CATCOND1	19		Denominator, Catalyst Monitor Conditions Encountered Counts Bank 1
	0.053		- Calculated Ratio -
CATCOMP2	0		Numerator, Catalyst Monitor Completion Counts Bank 2

Name			
CATCOND2	0		Denominator, Catalyst Monitor Conditions Encountered Counts Bank 2
	7.995		- Calculated Ratio -
O2SCOMP1	22		Numerator, O2 Sensor Monitor Completion Counts Bank 1
O2SCOND1	19		Denominator, O2 Sensor Monitor Conditions Encountered Counts Bank 1
	1.158		- Calculated Ratio -
O2SCOMP2	22		Numerator, O2 Sensor Monitor Completion Counts Bank 2
O2SCOND2	19		Denominator, O2 Sensor Monitor Conditions Encountered Counts Bank 2
	1.158		- Calculated Ratio -
EGRCOMP	29		Numerator, EGR/VVT Monitor Completion Condition Counts
EGRCOND	19		Denominator, EGR/VVT Monitor Conditions Encountered Counts
	1.526		- Calculated Ratio -
AIRCOMP	0		Numerator, Secondary Air Monitor Completion Condition Counts
AIRCOND	0		Denominator, Secondary Air Monitor Conditions Encountered Counts
	7.995		- Calculated Ratio -
EVAPCOMP	0		Numerator, EVAP Monitor Completion Condition Counts
EVAPCOND	3		Denominator, EVAP Monitor Conditions Encountered Counts
	0.000		- Calculated Ratio -
SO2S-COMP1	10		Numerator, Secondary O2 Sensor Monitor Completion Counts Bank 1
SO2S-COND1	19		Denominator, Secondary O2 Sensor Monitor Conditions Encountered Counts Bank 1
	0.526		- Calculated Ratio -
SO2S-COMP2	0		Numerator, Secondary O2 Sensor Monitor Completion Counts Bank 2
SO2S-COND2	0		Denominator, Secondary O2 Sensor Monitor Conditions Encountered Counts Bank 2
	7.995		- Calculated Ratio -
AFRICOMP1	21		Numerator, Air Fuel Ratio Imbalance Monitor Completion Counts Bank 1
AFRICOND1	19		Denominator, Air Fuel Ratio Imbalance Monitor Conditions Encountered Counts Bank 1

Name			
	1.105		- Calculated Ratio -
AFRICOMP2	21		Numerator, Air Fuel Ratio Imbalance Monitor Completion Counts Bank 2
AFRICOND2	19		Denominator, Air Fuel Ratio Imbalance Monitor Conditions Encountered Counts Bank 2
	1.105		- Calculated Ratio -
PFCOMP1	0		Numerator, Particulate Filter Monitor Completion Counts Bank 1
PFCOND1	0		Denominator, Particulate Filter Monitor Conditions Encountered Counts Bank 1
	7.995		- Calculated Ratio -
PFCOMP2	0		Numerator, Particulate Filter Monitor Completion Counts Bank 2
PFCOND2	0		Denominator, Particulate Filter Monitor Conditions Encountered Counts Bank 2
	7.995		- Calculated Ratio -
INFO-TYPE0A	**Measured value**	**Unit**	**Comment**
	PCM-PowertrainCtrl		ECU Name
INFO-TYPE12	**Measured value**	**Unit**	**Comment**
	00 A5		Fueled Engine Operation Ignition Cycle Counter
	165	cnts	Fueled Engine Operation Ignition Cycle Counter
INFO-TYPE13	**Measured value**	**Unit**	**Comment**
	LFMXH07.3BWU		Certification Test Group, Engine Family Number
INFO-TYPE14	**Measured value**	**Unit**	**Comment**
	FF FF		Distance Traveled Since Evap Monitoring Decision
	65535	km	Distance Traveled Since Evap Monitoring Decision
INFO-TYPE16	**Measured value**	**Unit**	**Comment**
	00 00 00 36 00 00 00 39 00 00 00 36 00 00 00 39 00 00 E6 43 00 00 E7 01 00 00 2F 1B 00 00 2F 86		Vehicle Operation Data - Engine Run/Idle Time

Name			
	54	cnts	Ignition Counter (Recent)
	57	cnts	Ignition Counter (Lifetime)
	54	cnts	Fueled Engine Operation Ignition Cycle Counter (Recent)
	57	cnts	Fueled Engine Operation Ignition Cycle Counter (Lifetime)
	58947	s	Total Engine Run Time (Recent)
	59137	s	Total Engine Run Time (Lifetime)
	12059	s	Total Idle Engine Run Time (Recent)
	12166	s	Total Idle Engine Run Time (Lifetime)
INFO-TYPE17	**Measured value**	**Unit**	**Comment**
	00 00 30 E0 00 00 30 EB 00 00 72 4A 00 00 72 7E		Vehicle Operation Data - Distance/Fuel Used
	1251.2	km	Total Distance Traveled (Recent)
	1252.3	km	Total Distance Traveled (Lifetime)
	292.58	l	Total Fuel Consumed (Recent)
	293.10	l	Total Fuel Consumed (Lifetime)
INFO-TYPE18	**Measured value**	**Unit**	**Comment**
	00 00 45 02 00 00 45 01 00 00 1C 6E 00 00 1C 77		Vehicle Operation Data - PKE/EOE
	17666	km/h²	Positive Kinetic Energy (Recent)
	17665	km/h²	Positive Kinetic Energy (Lifetime)
	727.8	kWh	Engine Output Energy (Recent)
	728.7	kWh	Engine Output Energy (Lifetime)
INFO-TYPE19	**Measured value**	**Unit**	**Comment**
	00 00 E6 52 00 00 E7 11 00 00 2F 26 00 00 2F 92 00 00 1C DB 00 00 1D 06		Vehicle Operation Data - PSA
	58962	s	Total Propulsion System Active Time (Recent)

Name			
	59153	s	Total Propulsion System Active Time (Lifetime)
	12070	s	Total Idle Propulsion System Active Time (Recent)
	12178	s	Total Idle Propulsion System Active Time (Lifetime)
	7387	s	Total City Propulsion System Active Time (Recent)
	7430	s	Total City Propulsion System Active Time (Lifetime)

⬆ Module E8 - Mode A: Emission-related diagnostic trouble codes with permanent status

PCode	Fault
P0128	Coolant Thermostat (Coolant Temperature Below Thermostat Regulating Temperature)

⬆ Module E8 - Supported Modes and PIDs:

Mode 1

PID	Comment
00	PIDs supported 01-1F
01	Monitor status since DTCs cleared
03	Fuel system A status, Fuel system B status
04	Calculated load value
05	Engine coolant temperature
06	Short term fuel trim - Bank 1, Short term fuel trim - Bank 3
07	Long term fuel trim - Bank 1, Long term fuel trim - Bank 3
08	Short term fuel trim - Bank 2, Short term fuel trim - Bank 4
09	Long term fuel trim - Bank 2, Long term fuel trim - Bank 4
0C	Engine RPM
0D	Vehicle speed sensor
0E	Ignition timing advance for #1 cylinder
0F	Intake air temperature

Mode 1

10	Air flow rate from mass air flow sensor
11	Absolute throttle position
13	Location of oxygen sensors
15	Oxygen sensor output voltage, Short term fuel trim
1C	OBD requirements to which vehicle or engine is certified
1E	Auxiliary input status
1F	Time since engine start
20	PIDs supported 21-3F
21	Distance traveled while MIL is activated
2E	Commanded evaporative purge
2F	Fuel level input
30	Number of warm-ups since DTCs cleared
31	Distance traveled since DTCs cleared
33	Barometric pressure
34	Equivalence ratio, Oxygen sensor current
38	Equivalence ratio, Oxygen sensor current
3C	Catalyst temperature Bank 1 Sensor 1
40	PIDs supported 41-5F
41	Monitor status this driving cycle
42	Control module voltage
43	Absolute load value
44	Fuel/Air commanded equivalence ratio
45	Relative throttle position
46	Ambient air temperature
49	Accelerator pedal position D
4A	Accelerator pedal position E
4C	Commanded throttle actuator control
51	Type of fuel currently being utilized by the internal combustion engine

Mode 1

PID	Comment
54	Evap system vapor pressure
56	Long term secondary O2 sensor fuel trim - Bank 1, Long term secondary O2 sensor fuel trim - Bank 3
60	PIDs supported 61-7F
62	Actual engine - percent torque
63	Engine reference torque
65	Auxiliary Inputs/Outputs Status, Recommended transmission Gear for current vehicle conditions
65,1	Auxiliary Inputs/Outputs Status
68	Intake Air Temperature Bank 1 Sensor 1, Intake Air Temperature Bank 1 Sensor 2, Intake Air Temperature Bank 1 Sensor 3, Intake Air Temperature Bank 2 Sensor 1, Intake Air Temperature Bank 2 Sensor 2, Intake Air Temperature Bank 2 Sensor 3
68,1	Intake Air Temperature Bank 1 Sensor 1
7F	Total Engine Run Time, Total Idle Run Time, Total Run Time With PTO Active
7F,1	Total Engine Run Time
7F,2	Total Idle Run Time
7F,3	Total Run Time With PTO Active
80	PIDs supported 81-9F
8E	Engine Friction - Percent Torque
9D	Engine fuel rate, Vehicle fuel rate
9E	Engine Exhaust Flow Rate
A0	PIDs supported A1-BF
A3	Evap System Vapor Pressure A, Evap System Vapor Pressure A (wide range), Evap System Vapor Pressure B, Evap System Vapor Pressure B (wide range)
A3,2	Evap System Vapor Pressure A (wide range)
A6	Vehicle Odometer

Mode 2

Frame 0

PID	Comment
00	PIDs supported 01-1F
01	Monitor status since DTCs cleared
02	DTC that caused required freeze frame data storage

Mode 2

03	Fuel system A status, Fuel system B status
04	Calculated load value
05	Engine coolant temperature
06	Short term fuel trim - Bank 1, Short term fuel trim - Bank 3
07	Long term fuel trim - Bank 1, Long term fuel trim - Bank 3
08	Short term fuel trim - Bank 2, Short term fuel trim - Bank 4
09	Long term fuel trim - Bank 2, Long term fuel trim - Bank 4
0C	Engine RPM
0D	Vehicle speed sensor
0E	Ignition timing advance for #1 cylinder
0F	Intake air temperature
10	Air flow rate from mass air flow sensor
11	Absolute throttle position
15	Oxygen sensor output voltage, Short term fuel trim
1E	Auxiliary input status
1F	Time since engine start
20	PIDs supported 21-3F
2E	Commanded evaporative purge
2F	Fuel level input
30	Number of warm-ups since DTCs cleared
31	Distance traveled since DTCs cleared
33	Barometric pressure
34	Equivalence ratio, Oxygen sensor current
38	Equivalence ratio, Oxygen sensor current
3C	Catalyst temperature Bank 1 Sensor 1
40	PIDs supported 41-5F
41	Monitor status this driving cycle
42	Control module voltage

Mode 2

	43	Absolute load value
	44	Fuel/Air commanded equivalence ratio
	45	Relative throttle position
	46	Ambient air temperature
	49	Accelerator pedal position D
	4A	Accelerator pedal position E
	4C	Commanded throttle actuator control
	51	Type of fuel currently being utilized by the internal combustion engine
	54	Evap system vapor pressure
	56	Long term secondary O2 sensor fuel trim - Bank 1, Long term secondary O2 sensor fuel trim - Bank 3
	60	PIDs supported 61-7F
	65	Auxiliary Inputs/Outputs Status, Recommended transmission Gear for current vehicle conditions
	68	Intake Air Temperature Bank 1 Sensor 1, Intake Air Temperature Bank 1 Sensor 2, Intake Air Temperature Bank 1 Sensor 3, Intake Air Temperature Bank 2 Sensor 1, Intake Air Temperature Bank 2 Sensor 2, Intake Air Temperature Bank 2 Sensor 3
	80	PIDs supported 81-9F
	A0	PIDs supported A1-BF
	A3	Evap System Vapor Pressure A, Evap System Vapor Pressure A (wide range), Evap System Vapor Pressure B, Evap System Vapor Pressure B (wide range)
	A6	Vehicle Odometer

Mode 3

		supported

Mode 4

		supported

Mode 6

	PID	Comment
	00	PIDs supported 01-1F
	01	Exhaust Gas Sensor Monitor Bank 1 - Sensor 1
	02	Exhaust Gas Sensor Monitor Bank 1 - Sensor 2
	05	Exhaust Gas Sensor Monitor Bank 2 - Sensor 1

Mode 6

20	PIDs supported 21-3F
21	Catalyst Monitor Bank 1
35	VVT Monitor Bank 1
39	EVAP Monitor (Cap Off, 0.150")
3A	EVAP Monitor (0.090")
3C	EVAP Monitor (0.020")
3D	Purge Flow Monitor
40	PIDs supported 41-5F
60	PIDs supported 61-7F
80	PIDs supported 81-9F
81	Fuel System Monitor Bank 1
82	Fuel System Monitor Bank 2
A0	PIDs supported A1-BF
A1	Misfire Monitor General Data
A2	Misfire Cylinder 1 Data
A3	Misfire Cylinder 2 Data
A4	Misfire Cylinder 3 Data
A5	Misfire Cylinder 4 Data
A6	Misfire Cylinder 5 Data
A7	Misfire Cylinder 6 Data
A8	Misfire Cylinder 7 Data
A9	Misfire Cylinder 8 Data

Mode 7

	supported

Mode 8

PID	Comment
00	PIDs supported 01-1F
01	Evaporative system leak test

Mode 9

PID	Comment
00	PIDs supported 01-1F
02	Vehicle Identification Number(VIN)
04	Calibration Identification (CALID)
06	Calibration Verification Numbers (CVN)
08	In-use Performance Tracking for Spark Ignition Engines
0A	ECU Name
12	Fueled Engine Operation Ignition Cycle Counter
13	Certification Test Group, Engine Family Number
14	Distance Traveled Since Evap Monitoring Decision
16	Vehicle Operation Data - Engine Run/Idle Time
17	Vehicle Operation Data - Distance/Fuel Used
18	Vehicle Operation Data - PKE/EOE
19	Vehicle Operation Data - PSA

Mode A

	supported