

Specifications



Reference Value Symptom Chart

NOTE: The Reference Value Symptom Chart provides guidance in selecting the appropriate parameter identification (PID) or measured signal related to the fault area. Select a symptom from the symptom chart along with the category number and go to the PID/Measured Signal Chart. For multiple symptoms, select the symptom that is the most evident.

Symptom Occurs During	Symptom	Category Number
Startup:	No start/Normal crank	1
	Hard start/Long crank	2
	Stall after start	3
	Diesels/Runs on	4
Idle:	MIL	5
	Stalls/Quits	6
	Slow	7
	Slow return	8
	Rolling	9
	Fast	10
	Rough	11
	Misses	12
	Backfires	13
Acceleration:	Stalls/Quits	6
	Misses	12
	Bucks/Jerks	14
	Backfires	13
	Hesitation	15
	Lack/Loss of power	16
	Surge	17
	Spark knock	18
	Cooling system temperature	19
	Poor fuel economy	20
	Emissions compliance	21
Cruise:	Stalls/Quits	6
	Misses	12
	Bucks/Jerks	14
	Backfires	13
	Lack/Loss of power	16
	Surge	17

Symptom Occurs During	Symptom	Category Number
Deceleration:	Spark knock	18
	Cooling system temperature	19
	Poor fuel economy	20
	Emissions compliance	21
	Stalls/Quits	6
	Backfires	13

Reference Value Parameter Identification (PID)/Measured Signal Chart

NOTE: The following listing reflects PIDS and/or measured values which may reveal a possible concern within each system shown. Match the category number with the related PID/measured signal and go to the Typical Diagnostic Reference Value Charts.

Category Number	Related PIDS/Measured Signals
5, 10, 17	ACP
1, 23	APP1
1, 23	APP2
23	BOO1/BOO2
18, 19	CHT
1, 2, 3, 5, 6, 7, 11, 12, 13, 14, 15, 16, 17, 20, 21	CKP
1, 2, 3, 5, 6, 7, 11, 12, 13, 14, 15, 16, 17, 20, 21	CMP
10	CPP/PNP
3, 5, 6, 7, 9, 11, 15, 16, 20, 21	DPFEGR
4, 18, 19, 21, 22	ECT
3, 5, 6, 7, 9, 11, 15, 16, 20, 21	EGRMC1 through 4
3, 5, 6, 7, 9, 11, 15, 16, 20, 21	EGRMDSD
3, 5, 6, 7, 9, 11, 15, 16, 20, 21	EGRVR
5, 18, 19, 20, 21	EOT
3, 5, 6, 11, 21	EVAPCV
3, 5, 6, 11, 21	EVMV
20	FLI
1 through 21	FP
1 through 21	FPM
1 through 21	FRP
1 through 21	FRT
5	FTP
1 through 21	FUELPW1/2
1 through 21	FUELSYS (OL/CLSD-LP)
19	HFC
1 through 21	HTR11/12/21/22
2, 3, 5, 7, 8, 10, 22	IAT
2, 3, 5, 7, 8, 10, 22	IAT2
5, 14, 15, 16, 17, 20	IMTV
4, 5, 16, 18, 19, 20, 21	KS

PID	Units Measured/PID	Component/PID Only	Measured/PID Values			
			KOEO	Hot Idle	48KM/H (30 MPH)	89 KM/H (55 MPH)
<u>PCM AAT</u> (Deg C)	DEG C (DEG F)	AAT Sensor	12 (53.6)	12 (53.6)	12 (53.6)	12 (53.6)
<u>PCM AAT_V</u> (V)	VOLTS	AAT Sensor	3.28	3.29	3.34	3.40
<u>PCM AEIS_ACTION</u> (Undefined / Not Used)	NUMERIC VALUE	PID	0	0	0	0
<u>PCM AEIS_POSS</u> (Undefined / Not Used)	NUMERIC VALUE	PID	55	55	55	55
<u>PCM APP</u> (%)	%	APP Sensor	0	0	10	8
<u>PCM APP1</u> (V)	VOLTS	APP Sensor	0.80	0.80	1.11	1.06
<u>PCM APP1 [APP_D]</u> (%)	%	APP Sensor	16	16	22	21
<u>PCM APP2</u> (V)	VOLTS	APP Sensor	0.42	0.42	0.57	0.54
<u>PCM APP2 [APP_E]</u> (%)	%	APP Sensor	8	8	11	11
<u>PCM APP_MAXDIFF</u> (Deg)	DEG	PID	0.00	0.00	0.00	0.00
<u>PCM BARO</u> (kPa)	kPa (PSI)	PID	99.00 (14.36)	99.00 (14.36)	99.00 (14.36)	99.00 (14.36)
<u>PCM BARO_V</u> (V)	VOLTS	PID	3.89	3.89	3.90	3.90
<u>PCM BATT_V_INF</u> (V)	VOLTS	PID	12.02	14.43	14.50	14.53
<u>PCM BOO1</u>	TRUE/FALSE	BPP Switch	FALSE	FALSE	FALSE	FALSE
<u>PCM BOO2</u>	TRUE/FALSE	BPP Switch	FALSE	FALSE	FALSE	FALSE
<u>PCM BRKOV RD_POSS</u> (Undefined / Not Used)	NUMERIC VALUE	PID	33	33	34	34
<u>PCM BRKOV R_ACTION</u> (Undefined / Not Used)	NUMERIC VALUE	PID	0	0	0	0
<u>PCM CAM_SYNC</u>	YES/NO	PID	NO	NO	NO	NO
<u>PCM CATTEMP11</u> (Deg C)	DEG C (DEG F)	CAT11 Sensor	220 (428)	230 (446)	253 (487.4)	471 (879.8)
<u>PCM CATTEMP21</u> (Deg C)	DEG C (DEG F)	CAT21 Sensor	220 (428)	230 (446)	253 (487.4)	471 (879.8)
<u>PCM CHT</u> (Deg C)	DEG C (DEG F)	CHT Sensor	76 (168.8)	77 (170.6)	86 (186.8)	97 (206.6)
<u>PCM CHT_V</u> (V)	VOLTS	CHT Sensor	0.83	0.81	0.63	3.48
<u>PCM CLRDIST</u> (km)	KM (MILES)	PID	0 (0)	0 (0)	0 (0)	2 (1.24)
<u>PCM DECHOKE</u>	YES/NO	PID	YES	NO	NO	NO
<u>PCM DIST_AEIS</u> (km)	KM (MILES)	PID	0 (0)	0 (0)	0 (0)	0 (0)
<u>PCM DIST_BRKOV RD</u> (km)	KM (MILES)	PID	24 (14.91)	24 (14.91)	24.5 (15.22)	26 (16.16)
<u>PCM DTCCNT</u> (Undefined / Not Used)	NUMERIC VALUE	PID	0	0	0	0
<u>PCM DTCCNT_OBD</u> (Undefined / Not Used)	NUMERIC VALUE	PID	0	0	0	0
<u>PCM ECT</u> (Deg C)	DEG C (DEG F)	ECT Sensor	69 (156.2)	68 (154.4)	76 (168.8)	87 (188.6)
<u>PCM EQ_RAT11</u> (Undefined / Not Used)	RATIO	PID	0.00	0.99	0.99	1.02

PID	Units Measured/PID	Component/PID Only	Measured/PID Values			
			KOEO	Hot Idle	48KM/H (30 MPH)	89 KM/H (55 MPH)
<u>PCM EQ_RAT21</u> (Undefined / Not Used)	RATIO	PID	0.00	1.00	0.98	1.02
<u>PCM ETC_ACT</u> (Deg)	DEG	PID	7.99	3.29	8.31	13.66
<u>PCM ETC_TRIM</u> (Deg)	DEG	PID	0 (E)	0 (E)	0 (E)	0 (E)
<u>PCM ETC_[TAC_PCT]</u> (%)	%	PID	9	3	10	16
<u>PCM EVAP020C</u>	YES/NO	PID	NO	NO	NO	NO
<u>PCM EVAPCP</u> (%)	%	EVAPCP Valve	0	4	39	89
<u>PCM EVAPCV</u> (%)	%	CANV Valve	0	0	0	0
<u>PCM EVAPPCT</u> (%)	%	PID	0	4	39	88
<u>PCM EVAPSOAK</u>	YES/NO	PID	NO	NO	NO	NO
<u>PCM EVAPSTA</u>	STATUS	PID	Not Running	Not Running	Not Running	Not Running
<u>PCM EVBV</u> (% Duty Cycle)	%	EVAP Vapor Blocking Valve	0	0	100	100
<u>PCM FAN_DSD</u> (%)	%	PID	0	0	0	0
<u>PCM FLI</u> (%)	%	Fuel Level Sensor	31 (B)	31 (B)	35 (B)	35 (B)
<u>PCM FP</u> (%)	%	Fuel Pump Control Module	75	30	30	30
<u>PCM FPM</u> (%)	%	PID	39	40	40	40
<u>PCM FTP_V</u> (V)	VOLTS	FTP Sensor	2.62	2.62	2.46	2.12
<u>PCM FUELSYS_CL</u>	YES/NO	PID	NO	YES	YES	YES
<u>PCM FUELSYS_OL</u>	YES/NO	PID	NO	NO	NO	NO
<u>PCM HFC</u>	ON/OFF	PID	OFF	OFF	OFF	OFF
<u>PCM HTR11</u>	ON/OFF	HO2S11 Sensor	OFF	ON	ON	ON
<u>PCM HTR12</u>	ON/OFF	HO2S12 Sensor	OFF	ON	ON	ON
<u>PCM HTR21</u>	ON/OFF	HO2S21 Sensor	OFF	ON	ON	ON
<u>PCM HTR22</u>	ON/OFF	HO2S22 Sensor	OFF	ON	ON	ON
<u>PCM HTRCM11</u> (Amp)	mA	HO2S11 Sensor	0.00	0.00	0.00	0.00
<u>PCM HTRCM12</u> (Amp)	mA	HO2S12 Sensor	0.00	0.00	0.00	0.00
<u>PCM HTRCM21</u> (Amp)	mA	HO2S21 Sensor	0.00	0.00	0.00	0.00
<u>PCM HTRCM22</u> (Amp)	mA	HO2S22 Sensor	0.00	0.00	0.00	0.00
<u>PCM IAT</u> (Deg C)	DEG C (DEG F)	IAT Sensor	22 (71.6)	16 (60.8)	17 (62.6)	14 (57.2)
<u>PCM IAT11</u> (Deg C)	DEG C (DEG F)	IAT Sensor	22 (71.6)	16 (60.8)	17 (62.6)	14 (57.2)
<u>PCM IAT1_V</u> (V)	VOLTS	IAT Sensor	2.85	3.11	3.09	3.20
<u>PCM IGN_SW</u>	ON/OFF	Ignition Switch	ON	ON	ON	ON
<u>PCM INJECTOR_OFF</u>	-----/DISABLE	Injector 1–8	-----	-----	-----	-----
<u>PCM INJPWR_M</u> (V)	VOLTS	PID	12.71	14.38	14.51	14.49
<u>PCM KNOCK_1</u> (Undefined / Not Used)	COUNT	KS11 Sensor	999.00	26.00	78.00	62.00

PID	Units Measured/PID	Component/PID Only	Measured/PID Values			
			KOEO	Hot Idle	48KM/H (30 MPH)	89 KM/H (55 MPH)
<u>PCM KNOCK_2</u> (Undefined / Not Used)	COUNT	KS12 Sensor	999.00	32.00	77.00	48.00
<u>PCM KNOCK_3</u> (Undefined / Not Used)	COUNT	KS21 Sensor	999.00	20.00	46.00	25.00
<u>PCM KNOCK_4</u> (Undefined / Not Used)	COUNT	KS22 Sensor	999.00	21.00	41.00	27.00
<u>PCM LFC</u>	ON/OFF	PID	OFF	OFF	OFF	OFF
<u>PCM LOAD</u> (%)	%	PID	0 (A)	23	44	64
<u>PCM LOAD_ABSL</u> (%)	%	PID	0 (A)	16	20	35
<u>PCM LONGFT1</u> (%)	%	PID	(A)	-20 TO +20	-20 TO +20	-20 TO +20
<u>PCM LONGFT2</u> (%)	%	PID	(A)	-20 TO +20	-20 TO +20	-20 TO +20
<u>PCM MAF</u> (g/s)	g/s	MAF Sensor	3.29	8.96	23.88	32.60
<u>PCM MAF_HZ</u> (Hz)	kHz	MAF Sensor	5,031	3,348	2,556	2,346
<u>PCM MFC</u>	ON/OFF	PID	OFF	OFF	OFF	OFF
<u>PCM MIL_DIS</u> (km)	KM (MILES)	PID	0 (0)	0 (0)	0 (0)	0 (0)
<u>PCM MIL_OBD</u>	ON/OFF	PID	OFF	OFF	OFF	OFF
<u>PCM MISFIRE</u>	TRUE/FALSE	PID	FALSE	FALSE	FALSE	FALSE
<u>PCM MP_LRN</u>	TRUE/FALSE	PID	TRUE	TRUE	TRUE	TRUE
<u>PCM NUM_MISFIRE</u> (Undefined / Not Used)	COUNT	PID	0	32	9	11
<u>PCM O2S11_CUR</u> (mA)	mA/uA	HO2S11 Sensor	(A)	switching (C)	switching (C)	switching (C)
<u>PCM O2S11_HTR</u> (%)	%	HO2S11 Sensor	22	22	21	18
<u>PCM O2S11_IMPED</u> (V)	VOLTS	HO2S11 Sensor	5.00	1.05	1.05	1.05
<u>PCM O2S11_READY</u>	TRUE/FALSE	HO2S11 Sensor	FALSE	TRUE	TRUE	TRUE
<u>PCM O2S11_TR</u> (Ohm)	Kohm	HO2S11 Sensor	0.00	127.10	126.80	126.80
<u>PCM O2S12</u> (V)	VOLTS	HO2S12 Sensor	(A)	switching (D)	switching (D)	switching (D)
<u>PCM O2S21_CUR</u> (mA)	mA/uA	HO2S21 Sensor	(A)	switching (C)	switching (C)	switching (C)
<u>PCM O2S21_HTR</u> (%)	%	HO2S21 Sensor	22	22	21	18
<u>PCM O2S21_IMPED</u> (V)	VOLTS	HO2S21 Sensor	5.00	1.05	1.06	1.05
<u>PCM O2S21_READY</u>	TRUE/FALSE	HO2S21 Sensor	FALSE	TRUE	TRUE	TRUE
<u>PCM O2S21_TR</u> (Ohm)	Kohm	HO2S11 Sensor	0.00	96.50	96.50	96.50
<u>PCM O2S22</u> (V)	VOLTS	HO2S12 Sensor	(A)	switching (D)	switching (D)	switching (D)
<u>PCM O2_DS_DISBL</u>	TRUE/FALSE	PID	TRUE	FALSE	TRUE	FALSE
<u>PCM OCTADJ_R_LRND</u> (Undefined / Not Used)	%	PID	-0.39	-0.39	-0.39	-0.39
<u>PCM PATSENABL</u>	ENABLED / DISABLED	PID	DISABLED	DISABLED	DISABLED	DISABLED
<u>PCM PTO</u>	ON/OFF	PID	OFF	OFF	OFF	OFF

PID	Units Measured/PID	Component/PID Only	Measured/PID Values			
			KOEO	Hot Idle	48KM/H (30 MPH)	89 KM/H (55 MPH)
<u>PCM</u> <u>PTOIR_V</u> (V)	VOLTS	PID	0.00	0.00	0.00	0.00
<u>PCM</u> <u>RO2FT1</u> (%)	%	PID	0.00	0.01	0.01	0.03
<u>PCM</u> <u>RO2FT2</u> (%)	%	PID	0.00	0.01	0.01	0.03
<u>PCM</u> <u>RPM</u> (Rpm)	RPM	CKP Sensor	0	557	1,744	1928
<u>PCM</u> <u>RPM_DSD</u> (Rpm)	RPM	PID	999	599	525	525
<u>PCM</u> <u>SHRTFT1</u> (%)	%	PID	(A)	-10 TO +10	-10 TO +10	-10 TO +10
<u>PCM</u> <u>SHRTFT2</u> (%)	%	PID	(A)	-10 TO +10	-10 TO +10	-10 TO +10
<u>PCM</u> <u>SPARKADV</u> (Deg)	DEG	PID	7.50	10.50	30.00	17.50
<u>PCM</u> <u>SYNC</u>	YES/NO	PID	NO	YES	YES	YES
<u>PCM</u> <u>TP1_LRN_TRIM</u> (Deg)	DEG	ETBTPS	6.13	6.13	6.13	6.13
<u>PCM</u> <u>TP1_PER</u> (%)	%	ETBTPS	14	9	20	17
<u>PCM</u> <u>TP_REL</u> (%)	VOLTS	PID	7.5	2.4	14.5	11.0
<u>PCM</u> <u>VCTSYS</u>	ENABLED / DISABLED	PID	DISABLED	ENABLED	ENABLED	ENABLED
<u>PCM</u> <u>VCT_EXH_ACT1</u> (Deg)	DEG	PID	0.00	-0.06	48.06	45.44
<u>PCM</u> <u>VCT_EXH_DC1</u> (%)	%	VCT12 Solenoid	0	0	43	43
<u>PCM</u> <u>VCT_EXH_DIF1</u> (Deg)	DEG	PID	0.00	0.06	-0.56	-0.50
<u>PCM</u> <u>VPWR</u> (V)	VOLTS	PID	12.00	14.25	14.57	14.53
<u>PCM</u> <u>VSS</u> (Kph)	km/h (MPH)	PID	0 (0)	0 (0)	48 km/h (30 MPH)	89 km/h (55 MPH)