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2020 Ford F-450 Super Duty Service and Repair Manual

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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

1 through 23	MAF
1 through 23	MAP
1 through 22	MISF
1 through 21	O2S11/12/21/22
22	OSS
10	PSP
5	PTO
1 through 23	RPM
5, 14, 16, 17	SCICP
1 through 21	SHRTFT1/2/11/12/21/22
15, 16, 18, 19, 20, 21	SPARKADV ^a
1, 23	TP
2, 4, 5, 9, 10, 11, 16, 17, 18, 19, 20, 21	VCT
2, 4, 5, 9, 10, 11, 16, 17, 18, 19, 20, 21	VCTDC/VCTDC2
1, 2, 3, 5, 6, 11, 12, 13, 14	VPWR
22, 23	VSS

Typical Diagnostic Reference Values

NOTE

Footnotes are referenced throughout the Typical Diagnostic Reference Value Charts. A letter in parentheses next to a value indicates supplemental information is available. An attempt is made to provide as much information as possible. Some vehicles may not display all input and output signals. The Typical Diagnostic Reference Value Charts do not display fault parameter identifications (PIDs). These are PIDs which indicate a hard fault with the circuit. They display a value of FAULT or NO FAULT and are PIDs ending with the letter F. Reference values may vary 20% depending on operating conditions, altitude, and other factors. The RPM values are axle and tire dependent. Values are taken at an altitude of approximately 189 meters (620 ft) above sea level with the engine

(Accelerator Pedal Position D) (%)						
PCM (powertrain control module) APP2 (Accelerator pedal position sensor 2) (V)	VOLTS	APP Sensor	0.41	0.41	0.62	0.64
PCM (powertrain control module) APP2_[APP_E] (Accelerator Pedal Position E) (%)	%	APP Sensor	8	8	12	13
PCM (powertrain control module) APP_MAXDIFF (Maximum angle difference between (APP1) and (APP2)) (Deg)	DEG	PID	0.00	0.00	-0.06	-0.06
PCM (powertrain control module) BARO (Barometric Pressure) (kPa)	kPa (PSI)	PID	99.00 (14.36)	99.00 (14.36)	99.00 (14.36)	99.00 (14.36)
PCM (powertrain control module) BARO_V (Barometric pressure voltage) (V)	VOLTS	PID	3.86	3.86	3.86	3.85
PCM (powertrain control module) BATT_V_INF (Voltage at the Battery Terminals - Inferred) (V)	VOLTS	PID	12.94	14.50	14.50	14.50
PCM (powertrain control module) BRKOVRD_POSS (Number of Drive Cycles in which Brake Override Accelerator Action Possible) (Undefined / Not Used)	NUMERIC VALUE	PID	46	46	46	46
PCM (powertrain control module) BRKOVVR_ACTION (Number of Drive Cycles where Brake Override	NUMERIC VALUE	PID	0	0	0	0

		Sensor				
PCM (powertrain control module) DECHOKE (Crank fueling disabled)	YES/NO	PID	Yes (True)	No (False)	No (False)	No (False)
PCM (powertrain control module) DIST_AEIS (Distance Since Automatic Engine Idle Shutdown occurred) (km)	KM (MILES)	PID	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
PCM (powertrain control module) DIST_BRKOVDR (Distance Since Brake Override Accelerator Action occurred) (km)	KM (MILES)	PID	57.5 (35.73)	57.5 (35.73)	57.5 (35.73)	59.0 (36.66)
PCM (powertrain control module) DPFE_PRES (Differential Pressure Feedback EGR Sensor - Raw) (kPa)	kPa (PSI)	Differential Pressure Feedback EGR Sensor	0.22 (0.03)	0.22 (0.03)	1.68 (0.01)	6.20 (0.90)
PCM (powertrain control module) DPFE_V (Differential Pressure Feedback EGR (DPFE) Sensor Voltage) (V)	VOLTS	Differential Pressure Feedback EGR Sensor	1.51	1.51	1.57	1.79
PCM (powertrain control module) DTCCNT (DTC Count (includes those needing no action)) (Undefined / Not Used)	NUMERIC VALUE	PID	0	0	0	0
PCM (powertrain control module) DTCCNT_OBD (Number of confirmed emission-related DTCs stored) (Undefined / Not Used)	NUMERIC VALUE	PID	0	0	0	0

Recirculation A Duty Cycle or Position) (%)						
PCM (powertrain control module) EQ_RAT11 (Equivalence Ratio (Lambda) (Bank 1, Sensor 1)) (Undefined / Not Used)	RATIO	PID	0.00	1.01	1.04	0.98
PCM (powertrain control module) EQ_RAT21 (Equivalence Ratio (Lambda) (Bank 2, Sensor 1)) (Undefined / Not Used)	RATIO	PID	0.00	1.00	1.01	0.98
PCM (powertrain control module) ETC_ACT (Electronic Throttle Control Actual) (Deg)	DEG	PID	0.00	4.66	13.84	14.96
PCM (powertrain control module) ETC_TRIM (Learned Value of Throttle Angle Offset) (Deg)	DEG	PID	0.03 (E)	0.03 (E)	0.03 (E)	0.03 (E)
PCM (powertrain control module) ETC_[TAC_PCT] (Commanded Throttle Actuator Control) (%)	%	PID	9	5	17	18
PCM (powertrain control module) EVAP020C ((EVAP) Monitor 0.020 Leak Check Complete)	YES/NO	PID	No (False)	No (False)	No (False)	No (False)
PCM (powertrain control module) EVAPCP (Evaporative Emission Canister Purge Valve duty cycle) (%)	%	EVAPCP Valve	0	5	99	77
PCM (powertrain control module) EVAPCV	%	CANV Valve	0	0	0	0

PCM (powertrain control module) FP (Fuel pump) (%)	%	Fuel Pump Control Module	75	19	19	19
PCM (powertrain control module) FPM (Fuel pump monitor) (%)	%	PID	41	40	40	41
PCM (powertrain control module) FRP (Fuel Rail Pressure) (kPa)	kPa (PSI)	FRP Sensor	29,030 (4,210.45)	25,060 (3,634.65)	3,700 (536.64)	13,140 (1,905.80)
PCM (powertrain control module) FRP_DSD (Fuel Rail Pressure Desired) (kPa)	kPa (PSI)	PID	440 (63.82)	3,100 (449.62)	3,730 (540.99)	12,560 (1,821.67)
PCM (powertrain control module) FRP_V (Fuel Rail Pressure Sensor Voltage) (V)	VOLTS	FRP Sensor	3.82	3.36	0.92	2.00
PCM (powertrain control module) FTP_V (Fuel Tank Pressure Sensor Voltage) (V)	VOLTS	FTP Sensor	2.65	2.64	2.19	2.56
PCM (powertrain control module) FUELSYS_A_PCT_B1 (Fuel System A Use Percentage Bank 1 - Direct Injection) (%)	%	PID	0	0	36	71
PCM (powertrain control module) FUELSYS_A_PCT_B2 (Fuel System A Use Percentage Bank 2 - Direct Injection) (%)	%	PID	0	0	36	71
PCM (powertrain control module) FUELSYS_B_PCT_B1 (Fuel	%	PID	0	100	64	29

Exhaust Gas Oxygen Sensor Heater (bank 2, sensor 1))						
PCM (powertrain control module) HTR22 (Heated Exhaust Gas Oxygen Sensor Heater (bank 2, sensor 2))	ON/OFF	HO2S22 Sensor	Off	On	On	On
PCM (powertrain control module) HTRCM11 (Heater Current Monitor for Heated Exhaust Oxygen Sensor 11) (Amp)	mA	HO2S11 Sensor	0.00	0.00	0.00	0.00
PCM (powertrain control module) HTRCM12 (Heater Current Monitor for Heated Exhaust Oxygen Sensor 12) (Amp)	mA	HO2S12 Sensor	0.00	0.00	0.00	0.00
PCM (powertrain control module) HTRCM21 (Heater Current Monitor for Heated Exhaust Oxygen Sensor 21) (Amp)	mA	HO2S21 Sensor	0.00	0.00	0.00	0.00
PCM (powertrain control module) HTRCM22 (Heater Current Monitor for Heated Exhaust Oxygen Sensor 22) (Amp)	mA	HO2S22 Sensor	0.00	0.00	0.00	0.00
PCM (powertrain control module) IAT (Intake Air Temperature) (Deg C)	DEG C (DEG F)	IAT Sensor	53 (127.4)	52 (125.6)	45(113)	35 (95)
PCM (powertrain control module) IAT11 (Intake Air Temperature Bank 1 Sensor 1) (Deg C)	DEG C (DEG F)	IAT Sensor	53 (127.4)	52 (125.6)	45 (113)	35 (95)
PCM (powertrain control module) IAT12 (Intake Air	DEG C (DEG F)	IAT2 Sensor	53 (127.4)	52 (125.6)	50 (122)	44 (111.2)

Performance Counter) (Undefined / Not Used)						
PCM (powertrain control module) KNK_CNTR_CYL4 (Cylinder 4 Knock/Combustion Performance Counter) (Undefined / Not Used)	COUNT	PID	0	0	0	0
PCM (powertrain control module) KNK_CNTR_CYL5 (Cylinder 5 Knock/Combustion Performance Counter) (Undefined / Not Used)	COUNT	PID	0	0	0	0
PCM (powertrain control module) KNK_CNTR_CYL6 (Cylinder 6 Knock/Combustion Performance Counter) (Undefined / Not Used)	COUNT	PID	0	0	0	0
PCM (powertrain control module) KNOCK_1 (Knock sensor 1) (Undefined / Not Used)	COUNT	KS11 Sensor	999.00	74.00	60.00	58.00
PCM (powertrain control module) KNOCK_2 (Knock sensor 2) (Undefined / Not Used)	COUNT	KS12 Sensor	999.00	62.00	68.00	76.00
PCM (powertrain control module) KNOCK_3 (Knock sensor 3) (Undefined / Not Used)	COUNT	KS21 Sensor	999.00	84.00	64.00	62.00
PCM (powertrain control module) KNOCK_4 (Knock sensor 4) (Undefined / Not Used)	COUNT	KS22 Sensor	999.00	60.00	47.00	64.00

Latest Misfire Cycle) (Undefined / Not Used)						
PCM (powertrain control module) O2S11_CUR (Exhaust Gas Oxygen Sensor Current Bank 1 Sensor 1) (mA)	mA	HO2S11 Sensor	(A)	switching (C)	switching (C)	switching (C)
PCM (powertrain control module) O2S11_HTR (Commanded duty cycle for the (O2S11) heater output.) (%)	%	HO2S11 Sensor	20	73	25	24
PCM (powertrain control module) O2S11_IMPED ((O2S11) sensor impedance is expressed as a voltage.) (V)	VOLTS	HO2S11 Sensor	5.00	1.01	1.05	1.04
PCM (powertrain control module) O2S11_TR (Oxygen Sensor Trim Circuit Resistance 11 - NTK sensor) (Ohm)	Ohms	HO2S11 Sensor	0.00	101,000.00	101,000.00	101,000.00
PCM (powertrain control module) O2S12 (Heated Exhaust Gas Oxygen Sensor (bank 1, sensor 2)) (V)	VOLTS	HO2S12 Sensor	(A)	switching (D)	switching (D)	switching (D)
PCM (powertrain control module) O2S21_HTR (Commanded duty cycle for the (O2S21) heater output.) (%)	%	HO2S21 Sensor	20	73	25	24
PCM (powertrain control module) O2S21_IMPED ((O2S21) sensor impedance is expressed as a voltage.) (V)	VOLTS	HO2S21 Sensor	5.00	1.05	1.04	1.05