

PID	Description	Ford Units
APP2	Accelerator Pedal Position Sensor 2	Volts
APP_MAXDIFF	Maximum Difference Between APP1 And APP2	Degrees
APP_MODE	Accelerator Pedal Position Mode	Pedal Position
AXLE	Axle Ratio	Ratio
B+	Battery Voltage	Volts
BARO	Barometric Pressure	Frequency, Pressure
BARO_V	Barometric Pressure	Volts
BRKOV RD_POSS	Number Of Drive Cycles In Which Brake Override Accelerator Action Possible	Numeric Value
BRKOV R_ACTION	Number Of Drive Cycles Where Brake Override Accelerator Action Occurred	Numeric Value
CAC_T	Charge Air Cooler Temperature	Degrees
CAC_V	Charge Air Cooler Voltage	Volts
CACC_FAN	Charge Air Cooler Cooling Fan Speed Commanded	Percent
CACC_FANSTAT	Charge Air Cooler Cooling Fan Output Status	Status
CACCT	Charge Air Cooler Coolant Temperature Sensor	Degrees
CACCT_V	Charge Air Cooler Coolant Temperature Sensor Input Voltage	Volts
CAT_EVAL	Catalyst Evaluated	Yes, No
CHT	Cylinder Head Temperature	Volt, Degrees
CHT2	Cylinder Head Temperature 2	Degrees
CHT2_V	Cylinder Head Temperature 2 Voltage	Volts
CLRDIST	Distance Since DTCs Cleared	Miles
CLRW RMUP	Number Of Warm-Ups Since DTCs Cleared	Count
CPP	Clutch Pedal Position Switch Input	On, Off
CPP_BOT	Clutch Pedal At Or Near Bottom Of Travel	Yes, No
CPP_PERCENT	Clutch Pedal Position Sensor Input	Percent
CPP/PNP	Clutch Pedal Position, Park Neutral Position Switch Input	Neutral, Drive
CRNKCAS_PRS	Crankcase Pressure (Gauge) Measured	Pressure
CRNKCAS_P_V	Crankcase Pressure Sensor Circuit Input Voltage	Volts
CYL_1_DEACT_DC	Cylinder 1 Deactivation Solenoid Duty Cycle - Commanded	Percent
DECHOKE	Crank Fueling Disabled	Yes, No
DIST_AEIS	Distance Since Automatic Engine Idle Shutdown Occurred	Miles
DIST_BRKOV RD	Distance Since Brake Override Accelerator Action Occurred	Miles
DPFEGR	Delta Feedback Pressure Exhaust Gas Recirculation	Volts
EBP	Exhaust Pressure Sensor	Pressure
ECT	Engine Coolant Temperature	Volts, Degrees
ECT1	Engine Coolant Temperature Sensor 1	Degrees
ECT1_V	Engine Coolant Temperature Sensor 1	Volts
EGRMC1F	EGR Motor Control Fault	Fault, No Fault
EGRMC2F	EGR Motor Control Fault	Fault, No Fault
EGRMC3F	EGR Motor Control Fault	Fault, No Fault
EGRMC4F	EGR Motor Control Fault	Fault, No Fault

PID	Description	Ford Units
EGRMDS	Electric EGR Motor Commanded In Steps	On, Off
EGRPCT	Commanded EGR	Percent
EGRT12	Exhaust Gas Recirculation Temperature Sensor Bank 1, Sensor 2	Volts, Degrees
EGRVPDES	EGR Valve Position Desired	Percent
EGR_EVAL	EGR Evaluated	Yes, No
EGR_STEP	EGR Valve Motor Position	Position
EGT11	Exhaust Gas Temperature Sensor Bank 1, Sensor 1	Volts, Degrees
EGT21	Exhaust Gas Temperature Sensor Bank 2, Sensor 1	Volts, Degrees
EONV_RDY	EVAP Monitor Test Ready At Next Key Off	Ready, Not Ready
EQ_RAT11	Equivalence Ratio Lambda Bank 1, Sensor 1	Ratio
EQ_RAT21	Equivalence Ratio Lambda Bank 2, Sensor 1	Ratio
ETC_ACT	Electronic Throttle Control Actual	Degrees
ETC_DSD	Electronic Throttle Control Desired	Degrees
ETC_TRIM	Electronic Throttle Control Trim	Degrees
EVAP_LDP_CMD	Evaporative System Leak Detection Pump Commanded State	On/Off
EVAP_LDP_PRS	Evaporative System Vapor Pressure Gauge - Measured	Pressure
EVAP_LDP_PSV	Evaporative System Leak Detection Pump Pressure Sensor Input Voltage	Volts
EVAP_SW_VLV	Evaporative System Switching Valve Control Duty Cycle - Commanded	Percent
EVAP020C	Evaporative Emissions Monitor	Yes, No
EVAP020D	Evaporative Emissions Monitor	Allow, Disallow
EVAP020R	Evaporative Emissions Monitor	Ready, Not Ready
EVAPCP	Evaporative Emissions Canister Purge Valve	Percent On, Off
EVAPCV	Evaporative Emissions Canister Purge Vent Control	Percent On, Off
EVAPCV_F	Evaporative Emissions Canister Purge Vent Fault	Fault, No Fault
EVAPSOAK	Evaporative Emissions Monitor Soak Conditions Are Met	Yes, No
EVAPSTA	Evaporative Emissions Monitor Completed Cycle	Status
EVBV	Evaporative Vapor Blocking Valve	Percent
EVAP_ACTIVE	Evaporative Emissions Activation Switch Position At Start Detection	Yes, No
EVAP_EVAL	Evaporative Emissions Monitor Evaluated	Yes, No
EVAP_SWITCH	Evaporative Emissions Actual Switch	Open, Closed
EVMV	Electronic Vapor Management Valve Commanded Current	Current
FAN	Engine Cooling Fan Operation	On, Off
FANDC	Variable Speed Fan Duty Cycle	Percent
FAN_DSD	Fan Speed Desired	Percent
FANSS	Fan Speed Sensor Signal	RPM
FANVAR	Variable Speed Fan Output	Percent
FF_INF	Inferred Flex Fuel Percentage	Percent
FF_LRND	Inferred Flex Fuel Learned	Yes, No
FLI	Fuel Level Indicator Input	Percent
FLP	Low Side Fuel Pressure	Pressure

PID	Description	Ford Units
FP	Fuel Pump	Percent On, Off
FPM	Fuel Pump Secondary Monitor	Percent On, Off
FPM2	Fuel Pump Secondary 2 Monitor	Percent On, Off
FPM_STAT	Fuel Pump Monitor Status	Fault, No Fault
FRP	Fuel Rail Pressure Input	Volts, Pressure
FRP_DSD	Fuel Rail Pressure Desired	Pressure
FRT	Fuel Rail Temperature	Degrees, Volts
FTP	Fuel Tank Pressure Input	Volts, Pressure
FTP_H2O	Fuel Tank Pressure Input	Pressure
FTP_INF	Inferred Fuel Tank Pressure	Pressure
FUELPW1	Injector Pulse Width Bank 1	Time
FUELPW2	Injector Pulse Width Bank 2	Time
FUELSYS	Fuel System Status	Open Loop, Closed Loop
FUELSYS_A_PCTB1	Fuel System A Use Percentage Bank 1 - Direct Injection	Percent
FUELSYS_A_PCTB2	Fuel System A Use Percentage Bank 2 - Direct Injection	Percent
FUELSYS_B_PCTB1	Fuel System B Use Percentage Bank 1 - Port Fuel Injection	Percent
FUELSYS_B_PCTB2	Fuel System B Use Percentage Bank 2 - Port Fuel Injection	Percent
F_VCV	Fuel Volume Control Valve	Percent
GEAR	Transmission Gear Status	Gear
GPF_A_GAUGE	Particulate Filter A Gauge Pressure	Pressure
GPF_A_V	Particulate Filter Pressure Sensor A Voltage	Volts
GPF_B1_INP	Particulate Filter Bank 1 Inlet Pressure	Pressure
HFC	Fan Control High Speed	On, Off
HTR11	Bank 1 Sensor 1 HO2S Heater Control	On, Off
HTR11F	Bank 1 Sensor 1 HO2S Heater Circuit Fault	Fault, No Fault
HTR12	Bank 1 Sensor 2 HO2S Heater Control	On, Off
HTR12F	Bank 1 Sensor 2 HO2S Heater Circuit Fault	Fault, No Fault
HTR21	Bank 2 Sensor 1 HO2S Heater Control	On, Off
HTR21F	Bank 2 Sensor 1 HO2S Heater Circuit Fault	Fault, No Fault
HTR22	Bank 2 Sensor 2 HO2S Heater Control	On, Off
HTR22F	Bank 2 Sensor 2 HO2S Heater Circuit Fault	Fault, No Fault
HTRCM11	Bank 1 Sensor 1 O2S Heater Circuit Current	Current
HTRCM12	Bank 1 Sensor 2 O2S Heater Circuit Current	Current
HTRCM21	Bank 2 Sensor 1 O2S Heater Circuit Current	Current
HTRCM22	Bank 2 Sensor 2 O2S Heater Circuit Current	Current
HTRX1	HO2S Sensor 1 (Upstream) Heater Control	On, Off
HTRX2	HO2S Sensor 2 (Downstream) Heater Control	On, Off
HO2S11	Bank 1 Sensor 1 HO2S Input	Volts
HO2S12	Bank 1 Sensor 2 HO2S Input	Volts
HO2S21	Bank 2 Sensor 1 HO2S Input	Volts

PID	Description	Ford Units
HO2S22	Bank 2 Sensor 2 HO2S Input	Volts
IAC	Idle Air Control	Percent
IACRIM	Short Term Airflow Trim	Numeric Value
IAT	Intake Air Temperature Input	Degrees, Volts
IAT2	Intake Air Temperature Sensor 2 Input	Degrees, Volts
IGN_R/S	Ignition Switch Run/Start	On, Off
IMRC	Intake Manifold Runner Control	On, Off
IMRC1M	Intake Manifold Runner Control Bank 1 Monitor	Volts
IMRC2M	Intake Manifold Runner Control Bank 2 Monitor	Volts
IMTV	Intake Manifold Tuning Valve Control	Percent
INJ1F-10F	Fuel Injector Primary Fault (Cylinders 1-10)	Fault, No Fault
INJPWR_M	Injectors Circuit Voltage Monitor	Volts
KNOCK_1	Knock Sensor 1 Signal	Count
KNOCK_2	Knock Sensor 2 Signal	Count
KNOCK_3	Knock Sensor 3 Signal	Count
KNOCK_4	Knock Sensor 4 Signal	Count
LFC	Fan Control Low Speed	On, Off
LOAD	Calculated Engine Load	Percent
LONGFT1	Long Term Fuel Trim Bank 1	Percent
LONGFT2	Long Term Fuel Trim Bank 2	Percent
MAF	Mass Airflow Rate Input	Frequency, Volts, Mass Flow
MAP	Intake Manifold Absolute Pressure	Frequency, Volts, Pressure
MAP_DMD	Manifold Absolute Pressure Demanded	Pressure
MAP_HR	Intake Manifold Absolute Pressure High Resolution	Pressure
MFC	Medium Fan Control	On, Off
MIL	Malfunction Indicator Lamp Control	On, Off
MIL_DIS	Distance Since MIL Was Activated	Miles
MISFIRE	Misfire Status	Yes, No
MP_LRN	Learned Misfire Correction Profile	Yes, No
NM	Number Of Misfires	Count
NUM	Misfire Events During Latest Misfire Cycle	Count
O2BANK1	Bank 1 O2S Status	Rich, Lean
O2BANK2	Bank 2 O2S Status	Rich, Lean
O2S11	Bank 1 Sensor 1 O2S Input	Volts
O2_DS_DISBL	Downstream Oxygen Sensor Fuel Control Disabled	Yes, No
O2_DS1_ERR	Downstream Closed Loop Input Error Bank 1	Volts
O2_DS2_ERR	Downstream Closed Loop Input Error Bank 2	Volts
O2S11_CUR	Bank 1 Sensor 1 Current	Current
O2S11_HTR	Commanded Duty Cycle For The O2S11 Heater Output	Percentage
O2S11_IMPED	O2S11 Sensor Impedance	Volts

PID	Description	Ford Units
O2S11_READY	O2S11 Is Warm And Ready To Operate	Yes, No
O2S11_STAT	O2S11 Status	Fault, No Fault
O2S11_TR	O2 Sensor Trim Circuit Resistance 11	Resistance
O2S12	Bank 1 Sensor 2 O2S Input	Volts
O2S21	Bank 2 Sensor 1 O2S Input	Volts
O2S21_CUR	Bank 2 Sensor 1 Current	Current
O2S21_HTR	Commanded Duty Cycle For The O2S21 Heater Output	Percentage
O2S21_IMP	O2S21 Sensor Impedance	Volts
O2S21_READY	O2S21 Is Warm And Ready To Operate	Yes, No
O2S21_STAT	O2S21 Status	Fault, No Fault
O2S21_TR	O2 Sensor Trim Circuit Resistance 21	Resistance
O2S22	Bank 2 Sensor 2 O2S Input	Volts
O2S_EVAL	Oxygen Sensor Circuits Evaluated	Yes, No
O2SHTR_EVAL	Oxygen Sensor Heater Circuits Evaluated	Yes, No
OSS	Output Shaft Speed	RPM
PF_REGEN_PCT	Particulate Filter Pressure Bank 1, Sensor 1	Percentage
PTO	Power Take Off	On, Off
PTOLOAD	Power Take Off Engage Input	Yes, No
PTOIR_V	Power Take Off RPM Select Input	Volts
PTOIL	Power Take Off Indicator Lamp	On, Off
RO2FT1	Rear O2 Fuel Trim - Bank 1	Percentage
RO2FT2	Rear O2 Fuel Trim - Bank 2	Percentage
RPM	Engine Speed Based Upon CKP Input	RPM
RPMDSD	RPM Desired	RPM
SHRTFT	Short Term Fuel Trim	Percent
SHRTFT1	Short Term Fuel Trim Bank 1	Percent
SHRTFT2	Short Term Fuel Trim Bank 2	Percent
SPARK_ACTUAL	Spark Advance Actual	Degrees
SPARKADV	Spark Advance	Degrees
SPKDUR_1-8	Spark Duration (Cylinders 1-8)	Time
SS_OUTOP	Stop Start Coordination Out Of Operation	Status
SS_START_ERR	Stop Start Coordination Start Error	Status
SS_STOP_ERR	Stop Start Coordination Stop Error	Status
STARTER_CNTS	Starter Motor Activation Counter	Count
STRT_RLY	Starter Relay	Enabled, Disabled
SYNC	CMP And CKP Synchronized	Yes, No
TCBP	Measured Boost At Throttle Inlet Pressure Sensor	Pressure
TCBP_V	Throttle Inlet Pressure Sensor Voltage	Volts
THROTTLE_CMD	Commanded Throttle Actuator Control	Percent
TORQUE	Net Torque Into Torque Converter	Torque
TP	Throttle Position Input	Volts, Percent

PID	Description	Ford Units
TPCT	Lowest Closed Throttle Voltage	Volts
TP_MAXDIFF	Maximum Angle Difference Between TP1 And TP2	Degrees
TPMODE	Throttle Position	Closed, Part, Wide Open Throttle
TP1	Throttle Position 1	Volts, Percent
TP2	Throttle Position 2	Volts, Percent
TP_B	Absolute Throttle Position B	Percent
TP1_ADP_CLSD	Throttle Position 1 Adaption Voltage Closed Stop	Volts
TP1_ADP_LIMP	Throttle Position 1 Adaption Voltage At Limp Home	Volts
TP1_ADP_MINAIR	Throttle Position 1 Adaption Volt Minimum Airflow	Volts
TP2_ADP_CLSD	Throttle Position 2 Adaption Voltage Closed Stop	Volts
TP2_ADP_LIMP	Throttle Position 2 Adaption Voltage At Limp Home	Volts
TQ_CNTRL	Torque Fuel, Spark Limiting Status	Status
TRIP CNT	OBD II Trips Completed	Count
TURBO_BP1_STAT	Turbocharger Bypass 1 Status	Fault, No Fault
TURBO_BP2_STAT	Turbocharger Bypass 2 Status	Fault, No Fault
TURBO_INLET	Turbocharger Inlet Pressure	Pressure
TURBO_INLET_V	Turbocharger Inlet Sensor Voltage	Volts
TURBO_BPASS	Turbocharger Bypass Valve	Percent
TURBO_BPASS_2	Turbocharger Bypass Valve 2	Percent
TURBO_OVER	Turbocharger Overboost Condition	Fault, No Fault
TURBO_UNDER	Turbocharger Underboost Condition	Fault, No Fault
TURBO_WGATE	Turbocharger Wastegate	Percent
TWGATE_STAT	Turbocharger Wastegate Status	Fault, No Fault
VCTADV	Variable Camshaft Timing Actual Advance	Degrees
VCTADV2	Variable Camshaft Timing 2 Actual Advance	Degrees
VCTADVERR	Variable Camshaft Timing Advance Error	Degrees
VCTADVERR2	Variable Camshaft Timing 2 Advance Error	Degrees
VCTDC	Variable Camshaft Timing Duty Cycle	Percent
VCTDC2	Variable Camshaft Timing Duty Cycle	Percent
VCT_EXH_ACT1	Actual Exhaust B Camshaft Position Bank 1	Degrees
VCT_EXH_ACT2	Actual Exhaust B Camshaft Position Bank 2	Degrees
VCT_EXH_DC1	Exhaust B Camshaft Position Duty Cycle Bank 1	Percent
VCT_EXH_DC2	Exhaust B Camshaft Position Duty Cycle Bank 2	Percent
VCT_EXH_DIF1	Exhaust B Camshaft Desired Minus Actual Bank 1	Degrees
VCT_EXH_DIF2	Exhaust B Camshaft Desired Minus Actual Bank 2	Degrees
VCT_EXH_DSD	VCT Exhaust Angle Desired	Degrees
VCT_EXH_DSD1	VCT Exhaust Angle Desired Bank 1	Degrees
VCT_INT_ACT1	Actual Intake A Camshaft Position Bank 1	Degrees
VCT_INT_ACT2	Actual Intake A Camshaft Position Bank 2	Degrees
VCT_INT_DC1	Intake A Camshaft Position Duty Cycle Bank 1	Percent

PID	Description	Ford Units
VCT_INT_DC2	Intake A Camshaft Position Duty Cycle Bank 2	Percent
VCT_INT_DIF1	Intake A Camshaft Desired Minus Actual Bank 1	Degrees
VCT_INT_DIF2	Intake A Camshaft Desired Minus Actual Bank 2	Degrees
VCT_INTK_DSD	VCT Intake Angle Desired	Degrees
VCT_INTK_DSD1	VCT Intake Angle Desired Bank 1	Degrees
VCTSYS	Variable Cam Timing System Status	Open, Closed
VPWR	Vehicle Power Voltage	Volts
VREF	Vehicle Reference Voltage	Volts
VSS	Vehicle Speed	Speed
WGATE_A_POS_PCT	Turbocharger Wastegate Motor 1	Percent
WGATE_B_POS_PCT	Turbocharger Wastegate Motor 2	Percent
WGATE_PRES	Wastegate Control Absolute Pressure Sensor	Pressure
WGATE_PRES_F	Wastegate Control Pressure Sensor Status	Fault, No Fault
WGATE_V	Wastegate Control Pressure Sensor Voltage	Volts
WGATE_VAC_DSD	Desired Wastegate Control Vacuum	Pressure
WGATE_VAC_INF	Wastegate Control Vacuum Inferred	Pressure

Quick Test Description

Quick Test

The quick test is divided into 3 specialized tests:

1. Key On Engine Off (KOEO) On Demand Self-Test
2. Key On Engine Running (KOER) On Demand Self-Test
3. Continuous Memory Self-Test

The quick test checks the integrity and function of the electronic engine control (EEC) system and outputs the test results when requested by the scan tool. The quick test also provides a quick check of the powertrain control system, and is usually carried out at the start of each diagnostic procedure with all accessories off. The quick test is also carried out at the end of most pinpoint tests for verification of the repair and to make sure no other concerns are incurred while repairing a previous concern. A system pass is displayed when no diagnostic trouble codes (DTCs) are output and a scan tool communication error does not exist. System pass means that hardware monitored by the PCM is functioning within the normal operating limits. Only a system pass, a DTC, or an incomplete on board diagnostic (OBD) drive cycle is displayed.

For applications that use a stand alone transmission control module (TCM) the PCM does not output TCM DTCs. For TCM self-test and diagnostics, refer to the Workshop Manual Section 307-01 Automatic Transmission.

Key ON Engine OFF (KOEO) On Demand Self-Test

The KOEO on demand self-test is a functional test of the PCM carried out on demand with the ignition ON and the engine OFF. This test carries out checks on certain sensor and actuator circuits. A concern must be present at the time of testing for the KOEO self-test to detect the concern. When a concern is detected, a DTC is output on the data link at the end of the test as requested by the scan tool.

Key ON Engine Running (KOER) On Demand Self-Test

The KOER on demand self-test is a functional test of the PCM carried out on demand with the ignition ON, the engine running and the vehicle stopped. A check of certain inputs and outputs is made during operating conditions and at a normal operating temperature. The brake pedal position, transmission control, and the power steering tests are part of the KOER on demand self-test and must be carried out during this operation if applicable. These are described below. A concern must be present at the time of testing for the KOER on demand self-test to detect the concern. When a concern is detected, a DTC is output on the data link at the end of the test as requested by the scan tool.

Brake Pedal Position (BPP) Test

The BPP test checks the ability of the EEC system to detect a change of state in the BPP switch. The brake pedal is briefly applied and released on all vehicles equipped with a BPP input. This is done during a KOER on demand self-test.

Continuous Memory Self-Test

The continuous memory self-test is a functional test of the PCM carried out under any condition (engine running or OFF) with the ignition ON. Unlike the KOEO and KOER self-tests, which can only be activated on demand, the continuous memory self-test is always active. A concern does not need to be present when accessing continuous memory self-test DTCs, making the test valuable when diagnosing intermittent concerns. The vehicle may need to be driven or the OBD drive cycle completed to allow the PCM to detect a concern. Refer to [On Board Diagnostic \(OBD\) Drive Cycle](#) in this section for more information. When a concern is stored in memory, a DTC is output on the data link when requested by the scan tool.

There are two types of continuous DTCs. The first type is an emission related code which illuminates the malfunction indicator lamp (MIL) in the instrument cluster. The second is a non emission related, non-MIL DTC which does not illuminate the instrument cluster indicator.

For emission related MIL DTCs, the PCM stores the DTC in continuous memory when a concern is detected for the first time. At this point the DTC does not illuminate the MIL and is considered a pending code. The purpose of pending codes is to assist in repair verification by reporting a pending DTC after one drive cycle. If the same concern is detected after the next drive cycle, the emission related MIL DTC illuminates the MIL and sets both a confirmed MIL DTC and a permanent DTC. The MIL remains illuminated even if the concern is intermittent. A permanent DTC is stored until three consecutive

passing drive cycles have been completed after a repair and the MIL turns off, or after a request to clear DTCs has been made using the scan tool and the next monitoring cycle has completed and passed for that DTC.

Confirmed emission related MIL DTCs and any non-emission related, non-MIL DTCs are erased approximately 40 vehicle warm-up cycles after the concern was last detected, or if the DTCs are cleared by the scan tool.

Pending emission related MIL DTCs that never detect a concern on a second consecutive drive cycle (and never illuminate the MIL) are not stored in memory for any number of vehicle warm-up cycles; they are immediately cleared when the next monitoring cycle has completed and passed for that DTC, or until a request to clear DTCs has been made by the scan tool.

Any scan tool that meets OBD requirements can access the continuous memory to retrieve emission related MIL DTCs. However, not all scan tools access pending and non-emission related, non-MIL DTCs in the same way.

During most diagnostic procedures in this manual, it is required that all DTCs be retrieved and cleared. Permanent DTCs cannot be directly cleared by the scan tool. When a scan tool clears DTCs, pending and confirmed DTCs are immediately cleared. Permanent DTCs will not clear until the next monitoring cycle has completed and passed for that DTC. For additional information, refer to Section 1, [Powertrain Control Software](#), Permanent Diagnostic Trouble Code (DTC).

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