

**Haynes**
shows you how

BMW 3-Series 320i & 320xi (12-14), 325i, 325xi, 330i & 330xi (06) & 328i & 328xi (07-14) Haynes Online Manual

3 Obtaining and clearing Diagnostic Trouble Codes (DTCs)

03:35

Caution:

This video is for familiarization purposes only. Read below for specific information on your vehicle.

All models covered by this manual are equipped with on-board diagnostics. When the PCM/DME recognizes a malfunction in a monitored emission or engine control system, component or circuit, it turns on the Malfunction Indicator Light (MIL) on the dash. The PCM/DME will continue to display the MIL until the problem is fixed and the Diagnostic Trouble Code (DTC) is cleared from the PCM's memory. You'll need a scan tool to access any DTCs stored in the PCM/DME.

Before outputting any DTCs stored in the PCM/DME, thoroughly inspect ALL electrical connectors and hoses. Make sure that all electrical connections are tight, clean and free of corrosion. And make sure that all hoses are correctly connected, fit tightly and are in good condition (no cracks or tears).

Accessing the DTCs

1 The Diagnostic Trouble Codes (DTCs) can only be accessed with a code reader or scan tool. Professional scan tools are expensive, but relatively inexpensive generic code readers or scan tools (see illustrations 2.4a and 2.4b) are available at most auto parts stores. Simply plug the connector of the scan tool into the diagnostic connector (see illustration) . Then follow the instructions included with the scan tool to extract the DTCs.

3.1 To access the DLC in the driver's kick panel, remove the cover, then pull out the dust cover over the connector



2 Once you have outputted all of the stored DTCs, look them up on the accompanying DTC chart.

3 After troubleshooting the source of each DTC, make any necessary repairs or replace the defective component(s).

Clearing the DTCs

4 Clear the DTCs with the code reader or scan tool in accordance with the instructions provided by the tool's manufacturer.

Diagnostic Trouble Codes

5 The accompanying tables are a list of the Diagnostic Trouble Codes (DTCs) that can be accessed by a do-it-yourselfer working at home (there are many, many more DTCs available to professional mechanics with proprietary scan tools and software, but those codes cannot be accessed by a generic scan tool). If, after you have checked and repaired the connectors, wire harness and vacuum hoses (if applicable) for an emission-related system, component or circuit, the problem persists, have the vehicle checked by a dealer service department or other qualified repair shop.

OBD-II trouble codes

Note:

Not all trouble codes apply to all models.

Note:

Cylinders 1 through 3 are referred to as Bank 1, and cylinders 4 through 6 are referred to as Bank 2.

Code	Probable cause
P0010	Intake camshaft position actuator circuit open
P0011	Intake camshaft position timing over-advanced
P0012	Intake camshaft position timing over-retarded
P0013	Exhaust camshaft position actuator circuit open
P0014	Exhaust camshaft position timing over-advanced
P0015	Exhaust camshaft position timing over-retarded
P0016	Intake camshaft position sensor correlation
P0017	Exhaust camshaft position sensor correlation
P0030	Heated oxygen sensor, control circuit (Bank 1, sensor 1)
P0031	Heated oxygen sensor, circuit low (Bank 1, sensor 1)
P0032	Heated oxygen sensor, circuit high (Bank 1, sensor 1)
P0033	Turbocharger bypass valve control circuit problem
P0034	Turbocharger bypass valve control circuit - low
P0035	Turbocharger bypass valve control circuit - high
P0036	Heated oxygen sensor, control circuit (Bank 1, sensor 2)
P0037	Heated oxygen sensor, circuit low (Bank 1, sensor 2)
P0038	Heated oxygen sensor, circuit high (Bank 1, sensor 2)
P0040	Upstream oxygen sensors swapped (crossed wiring harnesses)
P0041	Downstream oxygen sensors swapped (crossed wiring harnesses)
P0050	Oxygen sensor heater control circuit (Bank 2, sensor 1)
P0051	Oxygen sensor heater control circuit low (Bank 2, sensor 1)
P0052	Oxygen sensor heater control circuit high (Bank 2, sensor 1)
P0053	Oxygen sensor heater, resistance (Bank 1, sensor 1)
P0056	Oxygen sensor heater, control circuit (Bank 2, sensor 2)
P0057	Oxygen sensor heater control circuit low (Bank 2, sensor 2)
P0058	Oxygen sensor heater control circuit high (Bank 2, sensor 2)
P0059	Oxygen sensor heater, resistance (Bank 2, sensor 1)
P0070	Ambient air temperature sensor, circuit
P0071	Ambient air temperature sensor, circuit range/performance
P0072	Ambient air temperature sensor, circuit low
P0073	Ambient air temperature sensor, circuit high

P0090	Fuel Pressure regulator 1, control circuit open
P0091	Fuel Pressure regulator 1, control circuit low
P0092	Fuel Pressure regulator 1, control circuit high
P0100	Mass Air Flow (MAF) or volume, A circuit
P0101	Mass Air Flow (MAF) or volume, A circuit range/performance
P0102	Mass Air Flow (MAF) sensor circuit, low input
P0103	Mass Air Flow (MAF) sensor circuit, high input
P0104	Mass Air Flow (MAF) sensor circuit, intermittent failure
P0111	Intake Air Temperature (IAT) sensor, bank 1, circuit low input
P0112	Intake Air Temperature (IAT) sensor circuit, low input
P0113	Intake Air Temperature (IAT) sensor circuit, high input
P0114	Intake Air Temperature (IAT) sensor circuit, intermittent failure
P0116	Engine Coolant Temperature (ECT) circuit range/performance problem
P0117	Engine Coolant Temperature (ECT) sensor circuit, low input
P0118	Engine Coolant Temperature (ECT) sensor circuit, high input
P0119	Engine Coolant Temperature (ECT) sensor circuit, intermittent failure
P0121	Throttle Position (TP) or APP sensor, circuit out of range or performance problem
P0122	Throttle Position (TP) or APP sensor, circuit, low input
P0123	Throttle Position (TP) or APP sensor circuit, high input
P0124	Throttle position sensor/switch – circuit intermittent
P0125	Insufficient coolant temperature for closed loop fuel control
P0128	Coolant temperature below thermostat regulated temperature
P0131	Upstream oxygen sensor circuit problem (Bank 1, sensor 1)
P0132	Upstream oxygen sensor circuit, high voltage (Bank 1, sensor 1)
P0133	Upstream oxygen sensor circuit, slow response (Bank 1, sensor 1)
P0134	Upstream oxygen sensor circuit, no activity (Bank 1, sensor 1)
P0135	Upstream oxygen sensor heater circuit problem (Bank 1)
P0136	Downstream oxygen sensor circuit problem (Bank 2)
P0138	Downstream oxygen sensor circuit, high voltage (Bank 2)

P0151	Upstream oxygen sensor circuit, low voltage (Bank 2, sensor 1)
P0152	Upstream oxygen sensor circuit, high voltage (Bank 2, sensor 1)
P0153	Upstream oxygen sensor circuit, slow response (Bank 2, sensor 1)
P0155	Upstream oxygen sensor heater circuit problem (Bank 2, sensor 1)
P0157	Downstream oxygen sensor circuit, low voltage (Bank 2, sensor 2)
P0158	Downstream oxygen sensor circuit, high voltage (Bank 2, sensor 2)
P0160	Oxygen sensor circuit, no activity (Bank 2, sensor 2)
P0161	Downstream oxygen sensor, heater circuit problem (Bank 2, sensor 2)
P0171	System too lean (Bank 1)
P0172	System too rich (Bank 1)
P0174	System too lean (Bank 2)
P0175	System too rich (Bank 2)
P0190	Fuel Rail Pressure (FRP) sensor, A circuit malfunction
P0192	Fuel Rail Pressure (FRP) sensor circuit, low input
P0193	Fuel Rail Pressure (FRP) sensor circuit, high input
P0196	Engine Oil Temperature sensor circuit range/performance problem
P0197	Engine Oil Temperature sensor circuit, low input
P0198	Engine Oil Temperature sensor circuit, high input
P02AA	Cylinder number 5, fuel trim at maximum
P02AB	Cylinder number 5, fuel trim at minimum
P02AE	Cylinder number 6, fuel trim at maximum
P02AF	Cylinder number 6, fuel trim at minimum
P02A2	Cylinder number 3, fuel trim at maximum
P02A3	Cylinder number 3, fuel trim at minimum
P02A6	Cylinder number 4, fuel trim at maximum
P02A7	Cylinder number 4, fuel trim at minimum
P0201	Injector no. 1 circuit malfunction
P0202	Injector no. 2 circuit malfunction
P0203	Injector no. 3 circuit malfunction
P0204	Injector no. 4 circuit malfunction
P0205	Injector no. 5 circuit malfunction
P0206	Injector no. 6 circuit malfunction
P0221	Throttle Position (TP) or APP sensor B circuit, range/performance problem

P0222	Throttle Position (TP) or APP sensor B circuit, low input
P0223	Throttle Position (TP) or APP sensor B circuit, high input
P0230	Fuel pump primary circuit malfunction
P0234	Engine overboost condition
P0261	Cylinder 1 injector circuit low
P0262	Cylinder 1 injector circuit high
P0264	Cylinder 2 injector circuit low
P0265	Cylinder 2 injector circuit high
P0267	Cylinder 3 injector circuit low
P0268	Cylinder 3 injector circuit high
P0270	Cylinder 4 injector circuit low
P0271	Cylinder 4 injector circuit high
P0273	Cylinder 5 injector circuit low
P0274	Cylinder 5 injector circuit high
P0276	Cylinder 6 injector circuit low
P0277	Cylinder 6 injector circuit high
P0297	Vehicle overspeed condition
P0298	Engine oil over-temperature condition
P0300	Random misfire detected
P0301	Cylinder no. 1 misfire detected
P0302	Cylinder no. 2 misfire detected
P0303	Cylinder no. 3 misfire detected
P0304	Cylinder no. 4 misfire detected
P0305	Cylinder no. 5 misfire detected
P0306	Cylinder no. 6 misfire detected
P0310	Misfire detection monitor
P0315	PCM unable to learn crankshaft pulse wheel tooth spacing
P0316	Misfire occurred during first 1000 engine revolutions
P0320	Ignition engine speed input circuit malfunction
P0325	Knock sensor 1 circuit malfunction
P0326	Knock sensor 1 circuit range/performance
P0330	Knock sensor 2 circuit malfunction
P0331	Knock sensor 2 circuit range/performance
P0340	Camshaft Position (CMP) sensor A circuit performance (Bank 1, or single sensor)
P0341	Camshaft Position (CMP) sensor A circuit intermittent (Bank 1, or single sensor)
P0350	Ignition coil primary or secondary circuit malfunction

P0351	Ignition coil A primary or secondary circuit malfunction
P0352	Ignition coil B primary or secondary circuit malfunction
P0353	Ignition coil C primary or secondary circuit malfunction
P0354	Ignition coil D primary or secondary circuit malfunction
P0355	Ignition coil E primary or secondary circuit malfunction
P0356	Ignition coil F primary or secondary circuit malfunction
P0370	Timing reference, high signal A resolution
P0373	Timing reference, high signal A resolution erratic
P0420	Catalyst system efficiency below threshold (Bank 1)
P0430	Catalyst system efficiency below threshold (Bank 1)
P0440	EVAP control system, incorrect flow
P0441	EVAP control system, incorrect purge flow
P0442	EVAP control system, small leak detected
P0443	EVAP control system, canister purge valve circuit open
P0444	EVAP control system, canister purge valve circuit malfunction
P0445	EVAP control system, canister purge valve circuit shorted
P0446	EVAP control system canister vent solenoid circuit malfunction
P0451	Fuel tank pressure sensor circuit out of range or performance problem
P0452	Fuel tank pressure sensor circuit, low input
P0453	Fuel tank pressure sensor circuit, high input
P0454	Fuel tank pressure sensor circuit, noisy
P0455	EVAP control system, big leak detected
P0456	EVAP control system, very small leak detected
P0457	EVAP control system, leak detected (fuel filler neck cap loose or off)
P0458	EVAP control system, purge control valve circuit low
P0458	EVAP control system, purge control valve circuit high
P0460	Fuel level sensor circuit malfunction
P0461	Fuel level sensor circuit range or performance problem
P0462	Fuel level sensor circuit, low input
P0463	Fuel level sensor circuit, high input
P0481	High Fan Control (HFC) primary circuit failure
P0482	Medium Fan Control (MFC) primary circuit failure
P0500	Vehicle Speed Sensor (VSS) malfunction
P0501	Vehicle Speed Sensor (VSS) range/performance problem
P0503	Vehicle Speed Sensor (VSS), intermittent malfunction

P0505	Idle Air Control (IAC) system malfunction
P0506	Idle Air Control (IAC) rpm lower than expected
P0507	Idle Air Control (IAC) rpm higher than expected
P0511	Idle Air Control (IAC) circuit malfunction
P0512	Starter request circuit
P0520	Engine oil pressure switch, circuit
P0521	Engine oil pressure switch, range/performance
P0522	Engine oil pressure switch, circuit open
P0523	Engine oil pressure switch, high
P0524	Engine oil pressure switch, pressure too low
P0532	Air conditioning pressure sensor circuit, low voltage
P0533	Air conditioning pressure sensor circuit, high voltage
P0534	Low air conditioning cycling period
P0537	Air conditioning evaporator temperature circuit, low input
P0538	Air conditioning evaporator temperature circuit, high input
P0552	Power Steering Pressure (PSP) sensor circuit malfunction
P0553	Power Steering Pressure (PSP) sensor circuit malfunction
P0562	System voltage low
P0563	System voltage high
P0571	Brake switch, A circuit
P0579	Cruise control multifunction input A circuit range or performance problem
P0581	Cruise control multifunction input A circuit, high
P0583	Cruise control vacuum control circuit - high
P0597	Thermostat heater control circuit, open
P0598	Thermostat heater control circuit, low
P0599	Thermostat heater control circuit, high
P0600	Serial communication link (PCM) error
P0602	Control module programming error
P0603	Powertrain Control Module (PCM) Keep-Alive-Memory (KAM) test error
P0605	Powertrain Control Module (PCM) Read-Only-Memory (ROM) error
P0606	Powertrain Control Module (PCM) internal communication error
P0611	Fuel injector control module performance
P0620	Generator control circuit failure
P0622	Generator field terminal circuit failure

P062F	Powertrain Control Module (PCM) EEPROM error
P0634	PCM/PCM/TCM internal temperature too high
P0645	Air conditioning clutch relay, primary circuit malfunction
P0646	Air conditioning clutch relay, circuit low
P0647	Air conditioning clutch relay, primary circuit high
P0660	Intake manifold tuning valve control circuit open (Bank 1)
P0663	Intake manifold tuning valve control circuit open (Bank 2)
P0668	PCM/TCM internal temperature sensor, circuit too low
P0669	PCM/TCM internal temperature sensor, circuit too high
P0668	PCM/TCM internal temperature sensor, circuit too high
P0686	PCM power relay, circuit low
P0691	Fan 1 control, circuit low
P0692	Fan 1 control, circuit high
P0700	Transmission control system, MIL request
P0703	Brake Pedal Position (BPP) switch circuit input malfunction
P0831	Clutch pedal position switch malfunction, circuit low
P0832	Clutch pedal position switch malfunction, circuit high