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Service Category: Engine/Hybrid System	Section: Engine Control	
Model Year: 2008	Model: LX570	Doc ID: RM000000PDR044X
Title: 3UR-FE ENGINE CONTROL: SFI SYSTEM: CHECKING MONITOR STATUS (2008 LX570)		

CHECKING MONITOR STATUS

The purpose of the monitor result (mode 06) is to allow access to the results of on-board diagnostic monitoring tests of specific components/systems that are not continuously monitored. Examples are catalysts, evaporative emissions (EVAP) and thermostats.

The monitor result allows the OBD II scan tool to display the monitor status, test value, minimum test limit and maximum test limit. These data are displayed after the vehicle has been driven to run the monitor.

When the test value is not between the minimum and maximum test limits, the ECM (PCM) interprets this as a malfunction. If the test value is on the borderline of the test limits, the component is likely to malfunction in the near future.

Perform the following procedures to view the monitor status. Although these procedures refer to the Lexus/Toyota diagnostic tester, the monitor status can be checked using a generic OBD II scan tool. Refer to your scan tool operator's manual for specific procedural information.

1. PERFORM MONITOR DRIVE PATTERN

- Connect the Techstream to the DLC3.
- Turn the engine switch on (IG) and the Techstream on.
- Clear the DTCs  .
- Run the vehicle in accordance with the applicable drive pattern described in Readiness Monitor Drive Pattern  . Do not turn the engine switch off.

HINT:

The test results will be lost if the engine switch is turned off.

2. ACCESS MONITOR RESULT

- Enter the following menus: Powertrain / Engine and ECT / Monitor / Result. The monitor status appears after the component name.
 - Pass: The component is functioning normally.
 - Fail: The component is malfunctioning.
- Confirm that the component is either Pass or Fail.
- Select the component and press Enter. The accuracy test value appears if the monitor status is either Pass or Fail.

3. CHECK COMPONENT STATUS

- Compare the test value with the minimum test limit (Min Limit) and maximum test limit (Max Limit).
- If the test value is between the minimum and maximum test limits, the component is functioning normally. If not, the component is malfunctioning. The test value is usually not near the test limits. If the test value is on the borderline of the test limits, the component is likely to malfunction in the near future.

HINT:

The monitor result might on rare occasions be Pass even if the malfunction indicator lamp (MIL) is illuminated. This indicates the system malfunctioned on a previous driving cycle. This might be caused by an intermittent problem.

4. MONITOR RESULT INFORMATION

If you use a generic scan tool, multiply the test value by the scaling value listed below.

A/F Sensor (for Bank 1 Sensor 1)

MONITOR ID	TEST ID	SCALING	UNIT	DESCRIPTION
\$01	\$8E	Multiply by 0.001	V	A/F sensor deterioration level
\$01	\$91	Multiply by 0.004	mA	A/F sensor current

A/F Sensor (for Bank 2 Sensor 1)

MONITOR ID	TEST ID	SCALING	UNIT	DESCRIPTION
\$05	\$8E	Multiply by 0.001	V	A/F sensor deterioration level
\$05	\$91	Multiply by 0.004	mA	A/F sensor current

HO2 Sensor (for Bank 1 Sensor 2)

MONITOR ID	TEST ID	SCALING	UNIT	DESCRIPTION
\$02	\$07	Multiply by 0.001	V	Minimum sensor voltage
\$02	\$08	Multiply by 0.001	V	Maximum sensor voltage
\$02	\$8B	Multiply by 0.001	Seconds	0.35 to 0.2 V sensor switch time
\$02	\$8D	Multiply by 0.001	Seconds	Duration that sensor voltage drops to 0.2 V during fuel cut
\$02	\$8F	Multiply by 0.0003	g	Maximum oxygen storage capacity

HO2 Sensor (for Bank 2 Sensor 2)

MONITOR ID	TEST ID	SCALING	UNIT	DESCRIPTION
\$06	\$07	Multiply by 0.001	V	Minimum sensor voltage
\$06	\$08	Multiply by 0.001	V	Maximum sensor voltage
\$06	\$8B	Multiply by 0.001	Seconds	0.35 to 0.2 V sensor switch time
\$06	\$8D	Multiply by 0.001	Seconds	Duration that sensor voltage drops to 0.2 V during fuel cut
\$06	\$8F	Multiply by 0.0003	g	Maximum oxygen storage capacity

Catalyst (for Bank 1)

MONITOR ID	TEST ID	SCALING	UNIT	DESCRIPTION
\$21	\$A9	Multiply by 0.0003	No dimension	Oxygen storage capacity of catalyst

Catalyst (for Bank 2)

MONITOR ID	TEST ID	SCALING	UNIT	DESCRIPTION
\$22	\$A9	Multiply by 0.0003	No dimension	Oxygen storage capacity of catalyst

EVAP

MONITOR ID	TEST ID	SCALING	UNIT	DESCRIPTION
\$3D	\$C9	Multiply by 0.001	kPa	Test value for small leak (P0456)
\$3D	\$CA	Multiply by 0.001	kPa	Test value for gross leak (P0455)
\$3D	\$CB	Multiply by 0.001	kPa	Test value for leak detection pump stuck OFF (P2401)
\$3D	\$CD	Multiply by 0.001	kPa	Test value for leak detection pump stuck ON (P2402)
\$3D	\$CE	Multiply by 0.001	kPa	Test value for vent valve stuck OFF (P2420)
\$3D	\$CF	Multiply by 0.001	kPa	Test value for vent valve stuck ON (P2419)
\$3D	\$D0	Multiply by 0.001	kPa	Test value for reference orifice low flow (P043E)
\$3D	\$D1	Multiply by 0.001	kPa	Test value for reference orifice high flow (P043F)
\$3D	\$D4	Multiply by 0.001	kPa	Test value for purge VSV stuck closed (P0441)
\$3D	\$D5	Multiply by 0.001	kPa	Test value for purge VSV stuck open (P0441)
\$3D	\$D7	Multiply by 0.001	kPa	Test value for purge flow insufficient (P0441)

Rear Oxygen Sensor Heater

MONITOR ID	TEST ID	SCALING	UNIT	DESCRIPTION
\$42	\$91	Multiply by 0.001	Ohm	Oxygen sensor heater resistance for bank 1 sensor 2
\$46	\$91	Multiply by 0.001	Ohm	Oxygen sensor heater resistance for bank 2 sensor 2

Secondary Air Injection (AIR) - for Bank 1

MONITOR ID	TEST ID	SCALING	UNIT	DESCRIPTION
\$71	\$E1	Multiply by 0.01	g/sec.	Test value of AIR insufficient
\$71	\$E2	Multiply by 0.01	kPa	Test value of AIR pump stuck ON
\$71	\$E3	Multiply by 0.01	kPa	Test value of AIR pump stuck OFF
\$71	\$E4	Multiply by 0.01	kPa	Test value of AIR control valve ON
\$71	\$E5	Multiply by 0.01	kPa	Test value of AIR control valve OFF

Secondary Air Injection (AIR) - for Bank 2

MONITOR ID	TEST ID	SCALING	UNIT	DESCRIPTION
\$72	\$E1	Multiply by 0.01	g/sec.	Test value of AIR insufficient
\$72	\$E2	Multiply by 0.01	kPa	Test value of AIR pump stuck ON
\$72	\$E3	Multiply by 0.01	kPa	Test value of AIR pump stuck OFF
\$72	\$E4	Multiply by 0.01	kPa	Test value of AIR control valve ON
\$72	\$E5	Multiply by 0.01	kPa	Test value of AIR control valve OFF

Misfire

MONITOR ID	TEST ID	SCALING	UNIT	DESCRIPTION
\$A1	\$0B	Multiply by 1	Time	Total EWMA misfire count of all cylinders in last ten driving cycles EWMA: Exponential Weighted Moving Average

MONITOR ID	TEST ID	SCALING	UNIT	DESCRIPTION
\$A1	\$0C	Multiply by 1	Time	- When engine switch is on (IG), total misfire count of all cylinders in last driving cycle is displayed. - While engine is running, total misfire count of all cylinders in current driving cycle is displayed.
\$A2	\$0B	Multiply by 1	Time	Total EWMA misfire count of cylinder 1 in last ten driving cycles
\$A2	\$0C	Multiply by 1	Time	- When engine switch is on (IG), total misfire count of cylinder 1 in last driving cycle is displayed. - While engine is running, total misfire count of cylinder 1 in current driving cycle is displayed.
\$A3	\$0B	Multiply by 1	Time	Total EWMA misfire count of cylinder 2 in last ten driving cycles
\$A3	\$0C	Multiply by 1	Time	- When engine switch is on (IG), total misfire count of cylinder 2 in last driving cycle is displayed. - While engine is running, total misfire count of cylinder 2 in current driving cycle is displayed.
\$A4	\$0B	Multiply by 1	Time	Total EWMA misfire count of cylinder 3 in last ten driving cycles
\$A4	\$0C	Multiply by 1	Time	- When engine switch is on (IG), total misfire count of cylinder 3 in last driving cycle is displayed. - While engine is running, total misfire count of cylinder 3 in current driving cycle is displayed.
\$A5	\$0B	Multiply by 1	Time	Total EWMA misfire count of cylinder 4 in last ten driving cycles
\$A5	\$0C	Multiply by 1	Time	- When engine switch is on (IG), total misfire count of cylinder 4 in last driving cycle is displayed. - While engine is running, total misfire count of cylinder 4 in current driving cycle is displayed.
\$A6	\$0B	Multiply by 1	Time	Total EWMA misfire count of cylinder 5 in last ten driving cycles
\$A6	\$0C	Multiply by 1	Time	- When engine switch is on (IG), total misfire count of cylinder 5 in last driving cycle is displayed. - While engine is running, total misfire count of cylinder 5 in current driving cycle is displayed.
\$A7	\$0B	Multiply by 1	Time	Total EWMA misfire count of cylinder 6 in last ten driving cycles
\$A7	\$0C	Multiply by 1	Time	- When engine switch is on (IG), total misfire count of cylinder 6 in last driving cycle is displayed. - While engine is running, total misfire count of cylinder 6 in current driving cycle is displayed.
\$A8	\$0B	Multiply by 1	Time	Total EWMA misfire count of cylinder 7 in last ten driving cycles

MONITOR ID	TEST ID	SCALING	UNIT	DESCRIPTION
\$A8	\$0C	Multiply by 1	Time	- When engine switch is on (IG), total misfire count of cylinder 7 in last driving cycle is displayed. - While engine is running, total misfire count of cylinder 7 in current driving cycle is displayed.
\$A9	\$0B	Multiply by 1	Time	Total EWMA misfire count of cylinder 8 in last ten driving cycles
\$A9	\$0C	Multiply by 1	Time	- When engine switch is on (IG), total misfire count of cylinder 8 in last driving cycle is displayed. - While engine is running, total misfire count of cylinder 8 in current driving cycle is displayed.

