

2002 MY A/F Sensor Range/Performance Monitor (P1133, P1153)

To return to monitor description, see page [As-22](#).

MONITOR STRATEGY

Required sensors/Components	Main	A/F sensor
	Sub	Crankshaft position sensor and Throttle position sensor and Vehicle speed sensor
Frequency of operation	Once per driving cycle	
Duration	60 to 85 sec.	
MIL operation	2 driving cycles	
Sequence of operation	None	

TYPICAL ENABLING CONDITIONS

Item	Specification	
	Minimum	Maximum
The monitor will run whenever the following DTCs are not present	See page In-39	
A/F sensor status	Activated	
Fuel system status	Closed Loop	
Throttle valve	Open	
Engine RPM	1,600 rpm	3,200 rpm
Vehicle speed	60 km/h (37 mph)	120 km/h (74 mph)
After vehicle has run for 20 sec. under the following conditions:		
Engine RPM	900 rpm	–
Time after engine start	120 sec.	–
Vehicle speed	40 km/h (25 mph)	–

TYPICAL MALFUNCTION THRESHOLDS

Engine Family	Detection Criteria	Threshold
1AZ-FE	Response rate deterioration level	6.5 or more for 5 sec. x 16 times
2AZ-FE Camry and Solara		6.0 or more for 5 sec. x 16 times
2AZ-FE Highlander		5.0 or more for 5 sec. x 16 times
1MZ-FE Camry		6.5 or more for 5 sec. x 16 times (Bank 1) 6.0 or more for 5 sec. x 16 times (Bank 2)
1MZ-FE ES300		6.0 or more for 5 sec. x 16 times
1MZ-FE Solara and Sienna		7.0 or more for 5 sec. x 16 times
1MZ-FE Avalon, Highlander and RX300		4.0 or more for 5 sec. x 16 times
2RZ-FE and 3RZ-FE		5.2 or more for 5 sec. x 16 times
5VZ-FE Tacoma (2WD)		4.0 or more for 5 sec. x 16 times
5VZ-FE 4Runner and Tacoma (4WD)		6.0 or more for 5 sec. x 16 times
5VZ-FE Tundra		4.5 or more for 5 sec. x 16 times

OBD MONITOR DRIVE PATTERNS

See page [In-13](#)

MODE 06 DATA (MONITOR RESULT)

- (a) Checking monitor status (See page [In-43](#))
- (b) Detecting Mode 06 data (See page [In-44](#))