

2002 MY Misfire Monitor (P0300 to P0308)

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MONITOR STRATEGY

Required sensors/Components	Main	Crankshaft position sensor
	Sub	Camshaft position sensor, MAF sensor, Throttle position sensor, ECT sensor, IAT sensor
Frequency of operation	Continuous	
Duration	1,000 rev.	Emission-related-misfire after engine start
	1,000 rev. x 4	Emission-related-misfire while engine running
	200 rev.	Catalyst-damaged-misfire while high engine RPM (3,000 rpm or more)
	200 rev. x 3	Catalyst-damaged-misfire while low engine RPM (less than 3,000 rpm)
MIL operation	2 drive cycles	Emission-related-misfire
	2 drive cycles (MIL flashing immediately)	Catalyst-damaged-misfire
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	
Battery voltage	8 – 11 V	—
ECT	– 10°C (14°F)	—
IAT	– 10°C (14°F)	—
Engine RPM	Refer to the following engine speed chart	
Intake air amount	Greater than specified value (varies with engine RPM)	
Engine RPM fluctuation	Not changing rapidly	
Rough road counter	—	10 times/1,000 rev. (not running on rough road)
Fuel cut	Not operating	
Transient spark retarded	Not commanded	

Engine RPM chart:

Item	Engine family	Criteria	
		Minimum	Maximum
FTP mode (2 or 3 rev. after engine start)	1MZ-FE Solara (M/T)	450 rpm	3,000 rpm
	2ZZ-GE	400 rpm	4,800 rpm
Full range detection mode (2 or 3 rev. after engine start)	1AZ-FE	400 rpm	6,400 rpm
	2AZ-FE	400 rpm	6,200 rpm
	2JZ-GE	450 rpm	6,400 rpm
	1MZ-FE except Solara (M/T)	450 rpm	6,300 rpm
	1NZ-FE	450 rpm	6,400 rpm
	2RZ-FE and 3RZ-FE	400 rpm	5,500 rpm
	2UZ-FE	400 rpm	5,660 rpm
	3UZ-FE GS430, LS430	400 rpm	6,600 rpm
	3UZ-FE SC430	400 rpm	6,300 rpm
	5VZ-FE	450 rpm	5,450 rpm
	1ZZ-FE Corolla	450 rpm	6,200 rpm
	1ZZ-FE Celica and MR2	450 rpm	6,800 rpm

TYPICAL MALFUNCTION THRESHOLDS

Case 1: Emission-related-misfire

Detection criteria	Threshold
Misfire rate every 1,000 rev.	1.0 to 4.5 % (detected 4 times)
Misfire rate during 1,000 rev. after engine start	1.0 to 4.5 % (detected once)

Case 2: Catalyst-damaged-misfire

Detection criteria	Threshold
Misfire count every 200 rev. (while low engine RPM [less than 3,000 rpm])	20 to 220 times* ¹ or more (detected 3 times)
	Paired cylinders misfire 150 times or more* ² (detected 3 times)
Misfire count during 200 rev. (while high engine RPM [3,000 rpm or more])	20 to 220 times* ¹ or more (detected once)
	Paired cylinders misfire 150 times or more* ² (detected once)

*¹ Varies with engine RPM and volume of intake air.

*² For 6-cylinder engine and 8-cylinder engine