

2003 MY for Pressure Control Solenoid "A" Performance (Shift Solenoid Valve SL1) Monitor (P0746)

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MONITOR STRATEGY

Required sensors/Components	Main	Shift solenoid valve No.1
	Sub	None
Frequency of operation	Continuous	
Duration	1MZ-FE (HIGH LANDER, RX300)	1 sec.
	1MZ-FE (ES300, CAMRY '03/01 L/O)	0.8 sec.
	2AZ-FE (CAMRY, CAMRY SOLARA)	(A) & OFF malfunction, (A) & ON malfunction (A) 0.85 sec. (A) & ON malfunction (B) 1 sec.
	2AZ-FE (CAMRY Supplement)	OFF malfunction & ON malfunction (A) 0.8 sec. ON malfunction (B) 1 sec.
	1MZ-FE (CAMRY)	OFF malfunction & ON malfunction (A) 0.85 sec. ON malfunction (B) 1 sec.
	2ZZ-GE (CELICA)	(A) & OFF malfunction, (A) & ON malfunction (A) 0.8 sec. (A) & ON malfunction (B) 1 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	
Engine family	Item	Specification	
		Minimum	Maximum
1MZ-FE (HIGH LANDER, RX300, CAMRY)	Condition (A)		
	Engine coolant temperature	60 °C (37 °F) or more	–
	Transmission range	"D"	
	Transmission fluid temperature	–20 °C (–4 °F) or more	–
	Transmission fluid temp. sensor "A" circuit	Not circuit malfunction	
	ECT sensor circuit	Not circuit malfunction	
	Turbine speed sensor circuit	Not circuit malfunction	
	Intermediate shaft speed sensor "A" circuit	Not circuit malfunction	
	Output shaft speed sensor circuit	Not circuit malfunction	
	Pressure control solenoid "A" (SL1) circuit	Not circuit malfunction	
	Pressure control solenoid "B" (SL2) circuit	Not circuit malfunction	
	Shift solenoid "D" (S4) circuit	Not circuit malfunction	
	OFF malfunction		
	ECM selected gear	1st	
	Vehicle speed	10 km/h (6 mph) or more	Less than 40 km/h (30 mph)
	Throttle valve opening angle	4.5 % or more at engine speed 1,900 rpm (condition vary with engine speed)	–
	ON malfunction (A)		
	ECM selected gear	2nd	
	Vehicle speed	10 km/h (6 mph) or more	–
	Throttle valve opening angle	4.5 % or more at engine speed 1,900 rpm (condition vary with engine speed)	–
	ON malfunction (B)		
	ECM lock-up command	OFF	
	ECM selected gear	3rd or 4th	
	ON malfunction (C)		
	Throttle valve opening angle	5.0 % or more at output speed 850 rpm (condition vary with output speed)	–

1MZ-FE (ES300)	Condition (A)		
	Engine coolant temperature	10 °C (6 °F) or more	–
	Transmission range	"D"	
	Transmission fluid temperature	–20 °C (–4 °F) or more	–
	Transmission fluid temperature sensor "A" circuit	Not circuit malfunction	
	ECT sensor circuit	Not circuit malfunction	
	Turbine speed sensor circuit	Not circuit malfunction	
	Intermediate shaft speed sensor "A" circuit	Not circuit malfunction	
	Output speed sensor circuit	Not circuit malfunction	
	Pressure control solenoid "A" (SL1) circuit	Not circuit malfunction	
	Pressure control solenoid "B" (SL2) circuit	Not circuit malfunction	
	Pressure control solenoid "C" (SL3) circuit	Not circuit malfunction	
	Shift solenoid "D" (S4) circuit	Not circuit malfunction	
	Shift solenoid "E" (SR) circuit	Not circuit malfunction	
	Torque converter clutch solenoid (DSL) circuit	Not circuit malfunction	
	OFF malfunction		
	ECM selected gear	1st	
	Vehicle speed	–	Less than 40 km/h (30 mph)
	Calculated load value	19.5 % or more	–
	Throttle valve opening angle	4.5 % or more at engine speed 1,900 rpm (condition vary with engine speed)	–
	ON malfunction (A)		
	ECM selected gear	2nd	
	ON malfunction (B)		
	Throttle valve opening angle	5.0 % or more at output speed 850 rpm (condition vary with output speed)	–

Component T/M Outputs – Solenoid

2AZ-FE	Condition (A)		
	Engine coolant temperature	60 °C (140 °F) or more	–
	Transmission range	"D"	
	Transmission fluid temperature	–20 °C (–4 °F) or more	–
	Transmission fluid temperature sensor "A" circuit	Not circuit malfunction	
	ECT sensor circuit	Not circuit malfunction	
	Turbine speed sensor circuit	Not circuit malfunction	
	Intermediate shaft speed sensor "A" circuit	Not circuit malfunction	
	Output speed sensor circuit	Not circuit malfunction	
	Pressure control solenoid "A" (SL1) circuit	Not circuit malfunction	
	Pressure control solenoid "B" (SL2) circuit	Not circuit malfunction	
	Shift solenoid "D" (S4) circuit	Not circuit malfunction	
	Electronic throttle system	Not circuit malfunction	
	OFF malfunction		
	ECM selected gear	1st	
	Vehicle speed	10 km/h (6 mph) or more	Less than 40 km/h (30 mph)
	Throttle valve opening angle	3.5 % or more at engine speed 1,900 rpm (condition vary with engine speed)	–
	ON malfunction (A)		
	ECM selected gear	2nd	
	Vehicle speed	10 km/h (6 mph) or more	–
	Throttle valve opening angle	3.5 % or more at engine speed 1,900 rpm (condition vary with engine speed)	–
	ON malfunction (B)		
	ECM lock-up command	OFF	
	ECM selected gear	3rd or 4th	

2ZZ-GE (CELICA)	Condition (A)		
	Engine coolant temperature	60 °C (140 °F) or more	–
	Transmission range	"D"	
	Transmission fluid temperature	–20 °C (–4 °F) or more	–
	Transmission fluid temperature sensor "A" circuit	Not circuit malfunction	
	ECT sensor circuit	Not circuit malfunction	
	Turbine speed sensor circuit	Not circuit malfunction	
	Intermediate shaft speed sensor "A" circuit	Not circuit malfunction	
	Output speed sensor circuit	Not circuit malfunction	
	Pressure control solenoid "A" (SL1) circuit	Not circuit malfunction	
	Pressure control solenoid "B" (SL2) circuit	Not circuit malfunction	
	Shift solenoid "D" (S4) circuit	Not circuit malfunction	
	Electronic throttle system	Not circuit malfunction	
	OFF malfunction		
	ECM selected gear	1st	
	Vehicle speed	10 km/h (6 mph) or more	Less than 40 km/h (30 mph)
	Throttle valve opening angle	4.5 % or more at engine speed 1,900 rpm (condition vary with engine speed)	–
	ON malfunction (A)		
	ECM selected gear	2nd	
	Vehicle speed	10 km/h (6 mph) or more	–
	Throttle valve opening angle	4.5 % or more at engine speed 1,900 rpm (condition vary with engine speed)	–
	ON malfunction (B)		
	ECM lock-up command	OFF	
	ECM selected gear	3rd or 4th	

Component T/M Outputs – Solenoid

1MZ-FE (CAMRY '03/01 L/O)	Condition (A)		
	Engine coolant temperature	10 °C (6 °F) or more	–
	Transmission range	"D"	
	Transmission fluid temperature	–20 °C (–4 °F) or more	–
	Transmission fluid temperature sensor "A" circuit	Not circuit malfunction	
	ECT sensor circuit	Not circuit malfunction	
	Turbine speed sensor circuit	Not circuit malfunction	
	Intermediate shaft speed sensor "A" circuit	Not circuit malfunction	
	Output speed sensor circuit	Not circuit malfunction	
	Pressure control solenoid "A" (SL1) circuit	Not circuit malfunction	
	Pressure control solenoid "B" (SL2) circuit	Not circuit malfunction	
	Pressure control solenoid "C" (SL3) circuit	Not circuit malfunction	
	Shift solenoid "D" (S4) circuit	Not circuit malfunction	
	Shift solenoid "E" (SR) circuit	Not circuit malfunction	
	Torque converter clutch solenoid (DSL) circuit	Not circuit malfunction	
	OFF malfunction		
	ECM selected gear	1st	
	Vehicle speed	–	Less than 40 km/h (30 mph)
	Throttle valve opening angle	4.5 % or more at engine speed 1,900 rpm (condition vary with engine speed)	–
	ON malfunction (A)		
	ECM selected gear	2nd	
	ON malfunction (B)		
	Throttle valve opening angle	0.5 % or more at output speed 850 rpm (condition vary with output speed)	–

TYPICAL MALFUNCTION THRESHOLDS

Engine family	Detection criteria	Threshold
1MZ-FE (ES300, CAMRY '03/01 L/O)	Following condition met a or (b. and c.)	
	a. = (A) & OFF malfunction	
	Input speed/Intermediate shaft speed (NT/NC) It is necessary 2 judgments/driving cycle 1st judgment; temporary flag ON 2nd judgment; pending fault code ON	$1.49 \leq \text{NT/NC} < 1.63$
	b. = (A) & ON malfunction (A)	
	Input speed/Intermediate shaft speed (NT/NC)	$2.72 \leq \text{NT/NC} < 2.86$
	c. = (A) & ON malfunction (B)	
	Input speed/Intermediate shaft speed (NT/NC)	$2.72 \leq \text{NT/NC} < 2.86$
1MZ-FE (Except ES300, CAMRY '03/01 L/O)	Following condition met a. or (b. or c.)	
	It is necessary 2 judgments/driving cycle 1st judgment; temporary flag ON 2nd judgment; pending fault code ON	
	a. = (A) & OFF malfunction	
	Input speed/Intermediate shaft speed (NT/NC)	$1.49 \leq \text{NT/NC} < 1.63$
	b. = (A) & ON malfunction (A)	
	Input speed/Intermediate shaft speed (NT/NC)	$2.72 \leq \text{NT/NC} < 2.86$
	c. = (A) & ON malfunction (B)	
	NE – NT	250 rpm or more