

ENGINE OPERATING CONDITION

NOTICE: The values given below for "Normal Condition" are representative values, so a vehicle may still be normal even if its value varies from those listed here. So do not decide whether a part is faulty or not solely according to the "Normal Condition" here.

CARB Mandated Signals

TOYOTA hand-held tester display	Measurement Item	Normal Condition*
FUEL SYS #1	Fuel System Bank 1 OPEN: Air-fuel ratio feedback stopped CLOSED: Air-fuel ratio feedback operating	Idling after warming up: CLOSED
CALC LOAD	Calculator Load: Current intake air volume as a proportion of max. intake air volume	Idling: 13.8 ~ 19.3% Racing without load (2,500 rpm): 17.6 ~ 25.2%
COOLANT TEMP	Engine Coolant Temp. Sensor Value	After warming up: 80 ~ 95°C (176 ~ 203°F)
SHORT FT #1	Short-term Fuel Trim Bank 1	0 ± 20%
LONG FT # 1	Long-term Fuel Trim Bank 1	0 ± 20%
ENGINE SPD	Engine Speed	Idling: 650 ± 50 rpm
VEHICLE SPD	Vehicle speed	Vehicle stopped: 0 km/h (0 mph)
IGN ADVANCE	Ignition Advance Ignition Timing of Cylinder No.1	Idling: BTDC 0 ~ 11°
INTAKE AIR	Intake Air Temp. Sensor Value	Equivalent to ambient temp.
MAF	Air Flow Rate Through Mass Air Flow Meter	Idling: 4.3 ~ 6.1 gm/sec Racing without load (2,500 rpm): 21.2 ~ 30.4 gm/sec
THROTTLE POS	Voltage Output of Throttle Position Sensor Calculated as a Percentage 0 V → 0%, 5 V → 100%	Throttle fully closed: 7 ~ 11% fully open: 65 ~ 75%
02S B1, S1	Voltage Output of Oxygen Sensor Bank 1, Sensor 1	Idling: 0.1 ~ 0.9 V
02FT B1, S1	Oxygen Sensor Fuel Trim Bank 1, Sensor 1 (Same as SHORT FT # 1)	0 ± 20%
02S B1, S2	Voltage Output of Oxygen Sensor Bank 1, Sensor 2	Driving (50 km/h, 31 mph): 0.1 ~ 0.9 V

TOYOTA Enhanced Signals

TOYOTA hand-held tester display	Measurement Item	Normal Condition*
MISFIRE RPM	Engine RPM for first misfire range	Misfire 0: 0 RPM
MISFIRE LOAD	Engine load for first misfire range	Misfire 0: 0 g/r
INJECTOR	Fuel injection time for cylinder No. 1	Idling: 2.0 ~ 3.5 ms
IAC STEP POS	Intake Air Control Valve Step Position Opening position step motor type IAC valve	Idling: 10 ~ 50 step
STARTER SIG	Starter Signal	Cranking: ON
CTP SW	Closed Throttle Position Switch Signal	Throttle fully closed: ON
A/C SIG	A/C Switch Signal	A/C ON: ON
PNP SW	Park/Neutral Position Switch Signal	P or N position: ON
STOP LIGHT SW	Stop Light Switch Signal	Stop light switch ON: ON
FC IDL	Fuel Cut Idle: Fuel cut when throttle valve fully closed, during deceleration	Fuel cut operating: ON
FC TAU	Fuel Cut TAU: Fuel cut during very light load	Fuel cut operating: ON
CYL # 1 CYL # 6	Ratio of revolution variation for each cylinder when variation is large	0%
IGNITION	Ignition rate for all cylinders every 1,000 revolutions	0 ~ 3,000

*: If no conditions are specifically stated for "Idling", it means the shift lever is at N or P position, the A/C switch is OFF and all accessory switches are OFF.

TOYOTA Enhanced Signals (Cont'd)

TOYOTA hand-held tester display	Measurement Item	Normal Condition*
EGRT GAS	EGR Gas Temperature Sensor Value	EGR not operating: Temperature between intake air temp. and engine coolant temp.
EGR SYSTEM	EGR System Operating Condition	Idling: OFF
FUEL PRES UP VSV	Fuel Pressure Up VSV Signal	High temp. restarting: ON
FUEL PUMP	Fuel Pump Signal	Idling: ON
TOTAL FT B1	Total Fuel Trim Bank 1: Average value for fuel trim system of bank 1	Idling: 0.8 ~ 1.2
02 LR B1, S1	Oxygen Sensor Lean Rich Bank 1, Sensor 1 Response time for oxygen sensor output to switch from lean to rich	Idling after warmed up: 0 ~ 1,000 msec.
02 RL B1, S1	Oxygen Sensor Lean Rich Bank 1, Sensor 1 Response time for oxygen sensor output switch from rich to lean	Idling after warmed up: 0 ~ 1,000 msec.

*: If no conditions are specifically stated for "Idling", it means the shift lever is at N or P position, the A/C switch is OFF and all accessory switches are OFF.