

K - SENSOR RANGE CHARTS

1994 Toyota Celica

1994 ENGINE PERFORMANCE
Toyota Sensor Operating Range Charts
Celica

INTRODUCTION

Sensor operating range information can help determine if a sensor is out of calibration. An out-of-calibration sensor may not set a trouble code, but it may cause driveability problems.

NOTE: Unless stated otherwise in testing procedure, perform all voltage tests using a Digital Volt-Ohmmeter (DVOM) with a minimum 10-megohm input impedance.

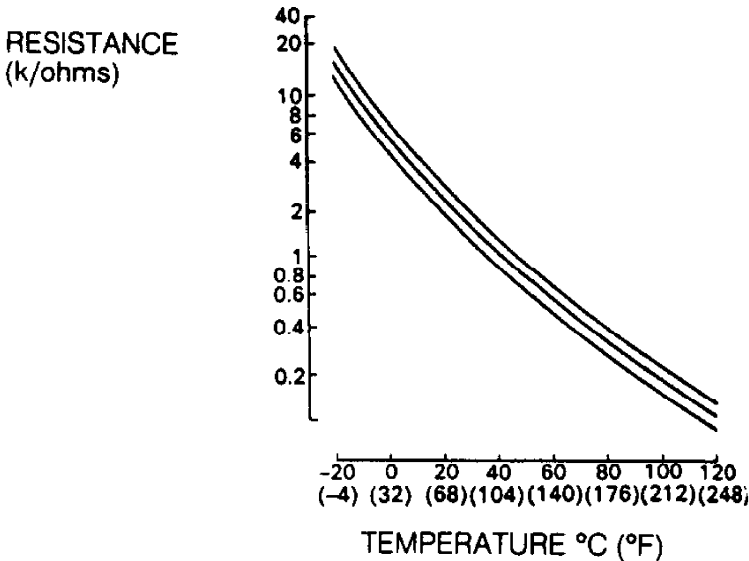
INTAKE AIR TEMPERATURE SENSOR

NOTE: Intake air temperature sensor may be also identified using appropriate illustration in E - THEORY/OPERATION article.

1) Ensure ignition is off. Disconnect electrical connector from intake air temperature sensor. Intake air temperature sensor is located in air intake, near air filter.

2) Remove intake air temperature sensor. Place threaded end of intake air temperature sensor and thermometer in container of water. Attach ohmmeter between intake air temperature sensor electrical terminals.

3) Heat water and note that resistance is within specification in relation to temperature. See Fig. 1. Replace intake air temperature sensor if defective.

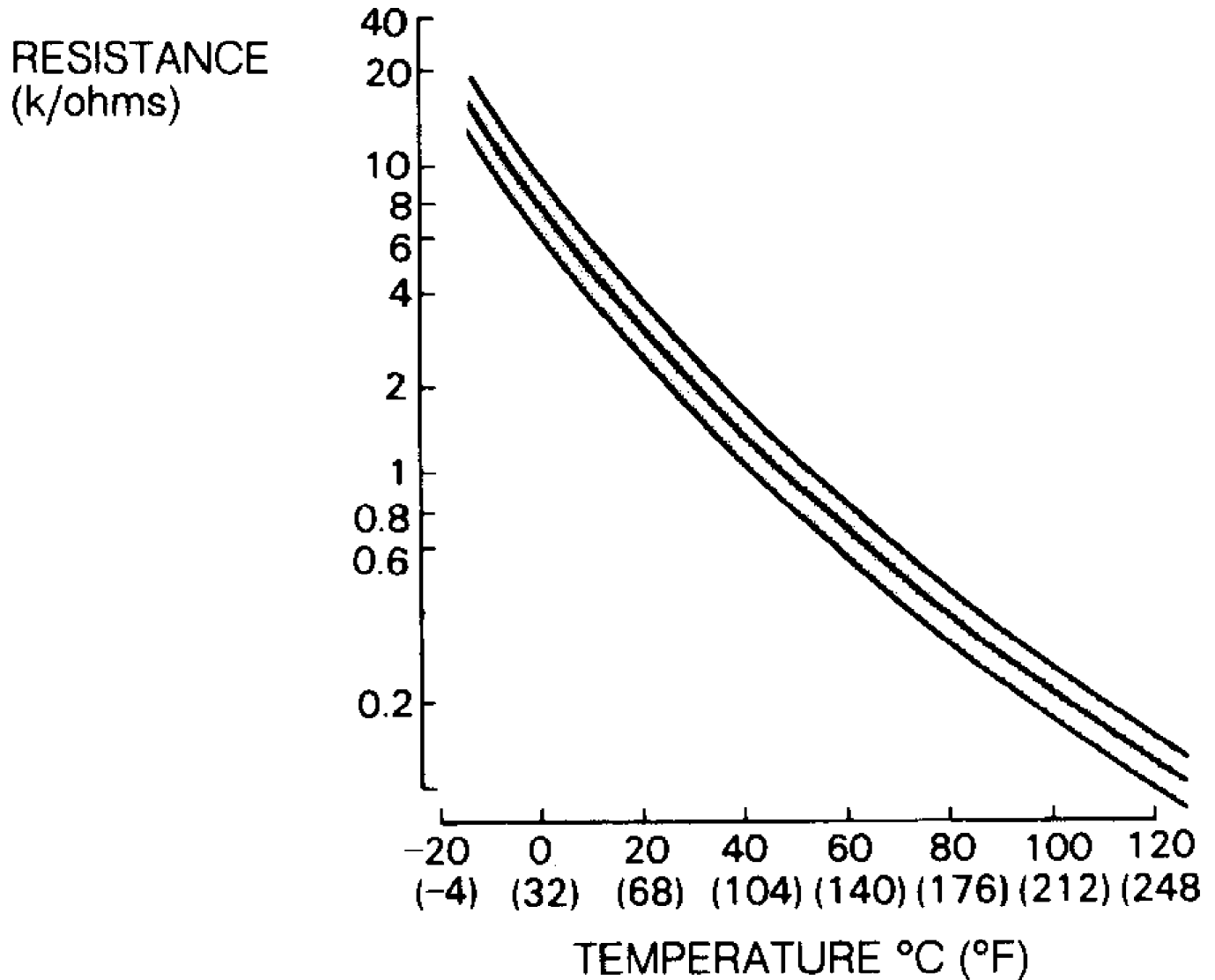


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Fig. 1: Checking Intake Air Temperature Sensor
Courtesy of Toyota Motor Sales, U.S.A., Inc.

ENGINE COOLANT TEMPERATURE SENSOR

Measure coolant temperature sensor resistance between sensor terminals. For resistance specifications, see Fig. 2.



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Fig. 2: Checking Engine Coolant Temperature Sensor
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

EGR GAS TEMPERATURE SENSOR

EGR GAS TEMPERATURE SENSOR SPECIFICATIONS TABLE (1)

Temperature °F (°C)	k/ohms
122 (50)	64-97
212 (100)	11-16
302 (150)	2-4

(1) - For terminal identification and testing, see the
 I - SYSTEM/COMPONENT TESTS article.

MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR

NOTE: MAP sensor may also be identified using appropriate illustration in E - THEORY/OPERATION article. The MAP sensor has a vacuum hose connected to it and may be identified by wire colors. See appropriate wiring diagram in L - WIRING DIAGRAMS article.

MAP SENSOR LOCATIONS TABLE

Application	Location
Celica	Passenger's Side Rear Corner Of Engine Compartment, On Firewall, Near Wiper Motor

1) The MAP sensor may also be referred to as a vacuum sensor. Ensure ignition is off. To check MAP sensor supply voltage, disconnect electrical connector from MAP sensor. See MAP SENSOR LOCATIONS table.

2) Turn ignition on. Using voltmeter, measure voltage between terminals VC or VCC and E2 of electrical connector on wiring harness. The VC or VCC and E2 terminals are the 2 outer terminals on all models. Voltage should be within specification. See MAP SENSOR SUPPLY VOLTAGE SPECIFICATIONS table.

3) If supply voltage is not within specification, check wiring circuit. See appropriate wiring diagram in L - WIRING DIAGRAMS article. If supply voltage is correct, turn ignition off. Reinstall electrical connector on MAP sensor.

4) To check MAP sensor output voltage, turn ignition on. Disconnect MAP sensor vacuum hose from intake manifold. Connect voltmeter to terminals PIM and E2 of Engine Control Module (ECM).

MAP SENSOR SUPPLY VOLTAGE SPECIFICATIONS TABLE

Application	Voltage
Celica	4.50-5.50

MAP SENSOR OUTPUT VOLTAGE DROP SPECIFICATIONS TABLE

Applied Vacuum In. Hg	Output Voltage Drop
3.943-.5
7.877-.9
11.81	1.1-1.3
15.75	1.5-1.7
19.69	1.9-2.1

SUB-OXYGEN SENSOR HEATER

NOTE: Sub-oxygen sensor heater may be used only on California applications on some models. See OXYGEN SENSOR APPLICATION table.

OXYGEN SENSOR APPLICATION TABLE

Application	Main Oxygen Sensor	Sub-Oxygen Sensor	Sensor Heater
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1.8L (7A-FE) X X
 2.2L (5S-FE) X (1) X

(1) - Applies to California models.

THROTTLE POSITION SENSOR

NOTE: For terminal identification and testing procedures, see
 I - SYSTEM/COMPONENT TESTS article.

TPS RESISTANCE SPECIFICATIONS TABLE

Application	Clearance In. (mm)	Terminals	Ohmmeter Reading
1.8L (7A-FE) (1)	0 (0)	VTA & E2	200-5700
	.016 (.41)	IDL & E2	2300 Or Less
	.035 (.89)	IDL & E2	No Continuity
	Fully Open	VTA & E2	2000-10,200
2.2L (5S-FE) (1)	0 (0)	VC & E2	2500-5900
	.020 (.51)	VTA & E2	200-5700
	.028 (.71)	IDL & E2	2300 Or Less
	Fully Open	IDL & E2	No Continuity
		VTA & E2	2000-10,200
		VC & E2	2500-5900

(1) - Apply vacuum to throttle opener before checking TPS.