83–609 Testing ambient, in-car temperature sensor and potentiometer (temperature dial) without tester

Data

	In-car temperature sensor			Ambient temperature sensor			Potentiometer
Connections in male plug	4 and 5			2 and 3			9 and 10
Resistance (ohms) at the following sensor temperatures:							
Sensor Temperature °C (°F)	In-car temperature sensor Ω nom.	max.	min.	Ambient temperature sensor Ω nom.	max.	min.	Potentiometer [1] nom. Ω
18 (64)	2300	2500	2100	390	415	362	$300 \begin{smallmatrix}+50\\-30\end{smallmatrix}$ at temperature dial adjustment 65 °F
19 (66)	2200	2400	2000	376	400	349	
20 (68)	2110	2310	1910	363	388	337	
21 (70)	2030	2220	1830	350	375	325	
22 (72)	1950	2130	1740	338	362	314	
23 (74)	1870	2050	1660	326	350	304	900 at temperature dial adjustment 75 °F
24 (76)	1790	1970	1590	314	339	294	
25 (78)	1720	1900	1510	303	328	283	
26 (79)	1650	1820	1440	293	317	274	
27 (80)	1580	1760	1370	282	307	265	
28 (81)	1510	1690	1300	273	298	257	$1480 \begin{smallmatrix}+140\\-110\end{smallmatrix}$ at temperature dial adjustment 85 °F
29 (84)	1450	1620	1230	263	288	248	
30 (86)	1390	1560	1170	254	280	241	
31 (88)	1340	1500	1110	246	272	235	
32 (90)	1290	1450	1050	238	265	227	
33 (92)	1250	1400	1000	232	250	222	
34 (93)	1190	1360	960	225	248	212	
35 (96)	1140	1310	910	218	240	205	
36 (97)	1090	1270	870	211	232	198	
37 (98)	1040	1230	830	204	224	191	
38 (100)	990	1180	780	197	216	184	
39 (102)	940	1140	740	190	208	177	
40 (104)	900	1100	700	184	200	170	

[1]) Ambient temperatures have no influence on specified ohm values. For checking potentiometer, adjust to 900 by turning temperature dial. Hold potentiometer shaft in place by means of adjusting wrench and set temperature dial to 75 °F by rotating on shaft (refer to 83–611). Then check values at temperature dial setting of 65 °F and 85 °F.

To check temperature sensor and potentiometer, disconnect tester from system and determine specified resistance via connections in male plug for tester (refer to table).

With warm engine it is recommended to remove ambient temperature sensor during test. With in-car temperature sensor, the temperature is measured directly in sensor.