

the combustion chamber. To achieve a richer air/fuel ratio, the ECM extends the injector opening time. As the engine warms up the air/fuel ratio is leaned off.

The input to the sensor is a 5V reference voltage supplied from the voltage divider circuit within the ECM. The ground from the sensor is also connected to the ECM which measures the returned current and calculates a resistance figure for the sensor which relates to the coolant temperature.

The following table shows CHT values and the corresponding sensor resistance and voltage values.

**Coolant Temperature Sensor Response**

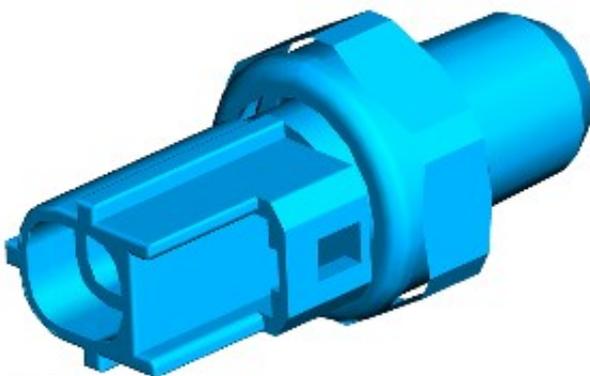
Temperature (Degrees Celsius)	Resistance (Kohms)	Voltage (Volts)
-40	925	4.54
-30	496	4.46
-20	277	4.34
-10	160	4.15
0	96	3.88
10	59	3.52
20	37	3.09
30	24	2.62
40	16	2.15
50	11	1.72
60	7.5	1.34
70	5.6	1.04
80	3.8	0.79
90	2.9	0.64
100	2.08	0.49
110	1.56	0.38
120	1.19	0.29
130	0.918	0.22
140	0.673	0.17
150	0.563	0.14

If the CHT sensor fails, the following symptoms may be observed:

- Difficult cold start.
- Difficult hot start.
- Engine performance compromised.
- Temperature gauge inoperative or inaccurate reading.

In the event of CHT sensor signal failure, the ECM applies a default value of 80°Celsius (176°F) coolant temperature for Fueling purposes. The ECM will also permanently operate the cooling fan at all times when the ignition is switched on, to protect the engine from overheating.

**OIL PRESSURE SWITCH**



E86095

The oil pressure switch, located in the oil cooler assembly, connects a ground input to the instrument cluster when oil pressure is present. The switch operates at a pressure of 0.15 to 0.41 bar (2.2 to 5.9 Psi).

**FUEL RAIL PRESSURE SENSOR**