6 Cooling system electrical switch/sensor - testing, removal and installation

Testing

1 Testing should be entrusted to a BMW dealer or suitably-equipped specialist.

Removal and installation

> Warning:
> Refer to the **Warnings** given in Section 1 of this Chapter before proceeding.

Radiator outlet thermostatic switch

> **Note:**
> Not all models are equipped with a radiator outlet thermostatic switch.

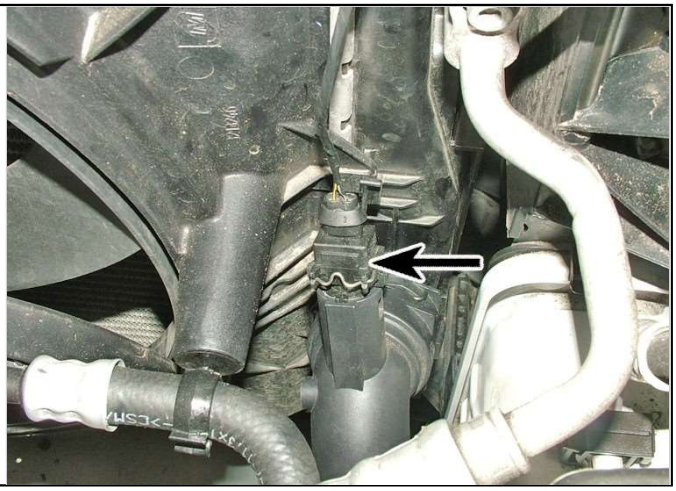
2 The switch is located in the radiator lower hose. The engine and radiator should be cold before removing the switch.

3 Disconnect the negative battery cable (see Chapter 5).

4 Either drain the cooling system to below the level of the switch (see Chapter 1), or have ready a suitable plug which can be used to plug the switch aperture in the radiator while the switch is removed. If a plug is used, take great care not to damage the radiator, and do not use anything which will allow foreign matter to enter the radiator.

5 Disconnect the electrical connector from the switch **(see illustration)** .

6.5 Radiator outlet thermostatic switch



6 Release the retaining clip, and remove the switch and sealing washer.

7 Installation is the reverse of removal. Use a new sealing washer. Refill the cooling system (see Chapter 1).

8 Start the engine and run it until it reaches normal operating temperature, then continue to run the engine and check that the cooling fan comes on and functions correctly.

Coolant temperature sensor

9 Either partially drain the cooling system to just below the level of the sensor (see Chapter 1), or have ready a suitable plug which can be used to plug the sensor aperture while it is removed. If a plug is used, take great care not to damage the sensor unit aperture, and do not use anything which will allow foreign matter to enter the cooling system.

10 Remove the mounting bolts and remove the air intake duct from the radiator support **(see illustration 3.2)** . Disconnect the intake hose as the duct is removed.

11 The sensor is screwed into the front side of the cylinder head. Release the clip and disconnect the wiring from the sensor.

12 Unscrew the sensor unit from the cylinder head **(see illustration)** .

6.12 Coolant temperature sensor location

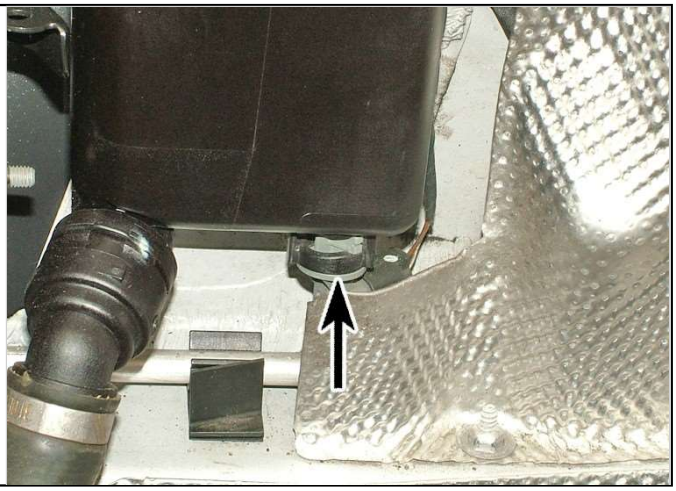
13 Apply a small amount of sealant to the sensor unit threads and install the sensor, tightening it to the specified torque.

14 Reconnect the wiring connector, then refill the cooling system (see Chapter 1). Check for leaks.

Coolant level sensor

15 The level sensor is mounted in the base of the coolant expansion tank. Disconnect the level sensor electrical connector **(see illustration)** .

6.15 The level switch is located at the base of the expansion tank



16 Remove the retaining bolts and raise the coolant tank. There's no need to disconnect the hoses.

17 Tilt the expansion tank so the sensor is uppermost, then rotate the sensor counterclockwise and pull it from the tank.

18 Installation is the reverse of removal. If necessary, add coolant (see Chapter 1).