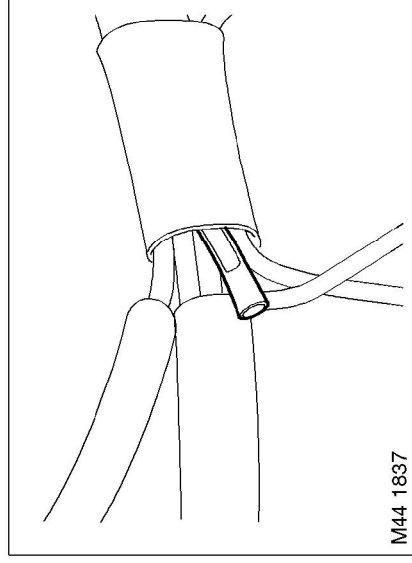


## AUTOMATIC TRANSMISSION – ZF 5HP24

### *Transmission Temperature Sensor*



The temperature sensor is located inside the wiring harness in the fluid pan and is connected to the EAT ECU with two wires. The sensor is a Positive Temperature Co-efficient (PTC) sensor which has a semi-conductor material which increases its resistance as the temperature increases.

The sensor receives a predetermined current from the EAT ECU on one of the wires and is connected to earth via the ECU on the second wire. The EAT ECU measures the returned voltage and using this information calculates the fluid temperature.

In the case of low fluid temperatures, the EAT ECU prohibits torque converter lock-up to promote faster fluid warm up. In the case of high fluid temperatures, the EAT ECU increases the converter lock-up control and modifies the shift programme to reduce fluid temperature.

If the temperature sensor fails, the EAT ECU uses a programmed default temperature value. The default value is derived from the engine coolant temperature sensor and received on the CAN from the ECM. A fault code is stored in the ECM which can be retrieved using TestBook.

The temperature sensor has a semi-conductor material with resistance to temperature values as shown in the following table.

#### **Temperature Sensor Resistance Values**

| <b>Temperature</b> | <b>Resistance</b> |
|--------------------|-------------------|
| 0°C (32°F)         | 820 Ω             |
| 20°C (68°F)        | 962 Ω             |
| 40°C (104°F)       | 1118 Ω            |
| 60°C (140°F)       | 1289 Ω            |