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› Standard Motor Products Temperature Sensor - TS604 User Manual

Standard Motor Products TS-604

Standard Motor Products Temperature Sensor - TS604

Model: TS-604 | Brand: Standard Motor Products

1. PRODUCT OVERVIEW

The Standard Motor Products TS-604 is a high-quality coolant temperature sensor designed for automotive applications. This sensor plays a critical role in your vehicle's engine management system by accurately measuring the temperature of the engine coolant. This data is then transmitted to the engine control unit (ECU), which uses it to adjust fuel delivery, ignition timing, and cooling fan operation, ensuring optimal engine performance and efficiency.



Figure 1.1: Side view of the TS-604 Coolant Temperature Sensor, showing the threaded metal body and black electrical connector.

2. SAFETY INFORMATION

Always prioritize safety when working on your vehicle. Failure to follow these guidelines may result in injury or damage to the vehicle.

- Ensure the engine is completely cool before beginning any work on the cooling system. Hot coolant can cause severe burns.
- Disconnect the vehicle's battery (negative terminal first) to prevent electrical shorts and accidental engine starting.
- Wear appropriate personal protective equipment, including safety glasses and gloves, to protect against coolant exposure and sharp edges.
- Handle engine coolant with care. It is toxic and should be disposed of properly according to local regulations. Do not

pour coolant down drains.

- Refer to your vehicle's specific service manual for detailed instructions and torque specifications relevant to your make and model.

3. PACKAGE CONTENTS

Upon opening the package, verify that all components are present and undamaged.

- 1 x Standard Motor Products TS-604 Coolant Temperature Sensor

4. INSTALLATION GUIDE

Installation of the coolant temperature sensor typically requires basic mechanical knowledge and tools. If you are unsure about any step, it is recommended to seek professional assistance.

1. **Preparation:** Park the vehicle on a level surface and allow the engine to cool completely. Open the hood and locate the coolant temperature sensor. It is typically found on the engine block, cylinder head, or thermostat housing.
2. **Disconnect Battery:** Disconnect the negative (-) terminal of the vehicle's battery to prevent accidental electrical issues.
3. **Drain Coolant:** Place a suitable drain pan under the radiator drain cock or lower radiator hose. Carefully open the drain cock or disconnect the hose to drain a sufficient amount of coolant to bring the level below the sensor's location.
4. **Remove Old Sensor:** Disconnect the electrical connector from the old sensor. Using an appropriately sized wrench or sensor socket, carefully unscrew and remove the old coolant temperature sensor. Be prepared for a small amount of coolant to spill.
5. **Install New Sensor:** Ensure the new TS-604 sensor has a new O-ring or sealing washer (if applicable). Thread the new sensor into its mounting location by hand to prevent cross-threading. Once hand-tight, use a wrench to tighten it to the manufacturer's specified torque. *Do not overtighten.*
6. **Reconnect Electrical Connector:** Firmly attach the electrical connector to the new sensor until it clicks into place.
7. **Refill Coolant:** Close the radiator drain cock or reattach the lower radiator hose. Refill the cooling system with the correct type and amount of coolant as specified by your vehicle's manufacturer. Bleed any air from the system as per your vehicle's service manual.
8. **Reconnect Battery:** Reconnect the negative (-) terminal of the vehicle's battery.
9. **Test:** Start the engine and allow it to reach operating temperature. Carefully inspect for any coolant leaks around the new sensor. Monitor the temperature gauge to ensure proper operation.



Figure 4.1: View of the electrical connector end of the TS-604 sensor, showing the internal pins for connection to the vehicle's wiring harness.

5. OPERATION

Once correctly installed, the Standard Motor Products TS-604 Coolant Temperature Sensor operates automatically. It continuously monitors the temperature of the engine coolant and sends a corresponding electrical signal to the vehicle's Engine Control Unit (ECU). The ECU uses this real-time temperature data to make precise adjustments to various engine parameters, including fuel injection, ignition timing, and cooling fan activation, ensuring the engine runs efficiently and within optimal temperature ranges.

6. MAINTENANCE

The TS-604 Coolant Temperature Sensor is designed to be a maintenance-free component. However, its longevity and accurate operation are dependent on the overall health of your vehicle's cooling system.

- **Coolant Quality:** Ensure your vehicle's cooling system is filled with the correct type and concentration of coolant as specified by the vehicle manufacturer. Old or contaminated coolant can lead to corrosion and sensor malfunction.
- **Coolant Level:** Regularly check the coolant level in the reservoir and radiator. Low coolant levels can expose the sensor to air, leading to inaccurate readings or overheating.
- **System Integrity:** Periodically inspect cooling system hoses, clamps, and the radiator for leaks or damage. A properly sealed system is crucial for accurate temperature sensing.

7. TROUBLESHOOTING

A faulty coolant temperature sensor can manifest in various ways. Common symptoms include:

- Check Engine Light (CEL) illumination with a diagnostic trouble code (DTC) related to coolant temperature.
- Inaccurate or erratic temperature gauge readings (e.g., gauge stuck at cold, fluctuating wildly).
- Poor fuel economy or excessive emissions.
- Engine running rough, stalling, or hard starting, especially when cold.
- Cooling fans running constantly or not at all.

Basic Diagnostic Steps:

1. **Check Connections:** Ensure the electrical connector to the sensor is clean, secure, and free of corrosion.
2. **Inspect Wiring:** Look for any visible damage, fraying, or pinches in the wiring harness leading to the sensor.
3. **Scan for Codes:** Use an OBD-II scanner to retrieve any stored diagnostic trouble codes. These codes can provide specific information about the sensor's circuit or performance.
4. **Consult Service Manual:** Refer to your vehicle's service manual for specific diagnostic procedures, including testing sensor resistance at various temperatures, and expected voltage readings.

If these steps do not resolve the issue, or if you are uncomfortable performing diagnostics, it is recommended to consult a certified automotive technician.

8. SPECIFICATIONS

Attribute	Value
Brand	Standard Motor Products
Model Number	TS-604
Item Dimensions (L x W x H)	1.5 x 1.2 x 2.9 inches
Material	Metal
Item Weight	0.96 ounces (27.22 g)
Output Type	Electrical Signal
Upper Temperature Rating	125 Degrees Celsius
UPC	707390316529

9. WARRANTY AND SUPPORT

For information regarding the warranty coverage for your Standard Motor Products TS-604 Coolant Temperature Sensor, please refer to the warranty documentation provided with your purchase or visit the official Standard Motor Products website. Warranty terms and conditions may vary.

For technical support, installation assistance, or any product-related inquiries, please contact Standard Motor Products customer service directly. Contact information can typically be found on their official website or product packaging.

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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