

[Manuals.plus](#) /

› [Standard Motor Products](#) /

› Standard Motor Products Throttle Position Sensor TH251 User Manual

## Standard Motor Products TH251

# Standard Motor Products Throttle Position Sensor

## MODEL: TH251

User Manual

### 1. Introduction

This manual provides essential information for the proper installation, operation, and maintenance of your Standard Motor Products Throttle Position Sensor (TPS) Model TH251. Please read this manual thoroughly before attempting any installation or service to ensure safe and correct usage.

The Throttle Position Sensor is a critical component in your vehicle's engine management system, providing the Engine Control Unit (ECU) with information about the throttle valve's position. This data is vital for accurate fuel delivery and ignition timing.

### 2. Product Overview

The Standard Motor Products TH251 Throttle Position Sensor is designed to meet or exceed OEM specifications, ensuring reliable performance and accurate readings. It is engineered for durability and precise fitment in compatible vehicle applications.



Figure 2.1: Standard Motor Products TH251 Throttle Position Sensor. This image shows the sensor unit, which is a small black component with mounting holes, connected to a black electrical wiring harness that terminates in a multi-pin connector.

### 3. Installation

**Important Safety Notice:** Installation of automotive components should only be performed by qualified personnel with appropriate tools and safety equipment. Disconnect the vehicle's battery before beginning any work to prevent electrical hazards.

1. **Preparation:** Ensure the vehicle's engine is cool. Locate the existing throttle position sensor on the throttle body.
2. **Disconnect Battery:** Disconnect the negative terminal of the vehicle's battery.
3. **Remove Old Sensor:** Carefully disconnect the electrical connector from the old TPS. Remove any mounting screws or clips securing the sensor to the throttle body. Gently pull the old sensor away from its mounting location.
4. **Inspect Mounting Surface:** Clean the mounting surface on the throttle body to ensure proper seating of the new sensor.
5. **Install New Sensor:** Align the new Standard Motor Products TH251 sensor with the throttle shaft and mounting holes. Ensure the sensor engages correctly with the throttle shaft. Secure the sensor with the appropriate mounting screws or clips, tightening them to the manufacturer's specified torque.
6. **Connect Electrical Connector:** Reconnect the electrical connector to the new TPS, ensuring it clicks securely into place.
7. **Reconnect Battery:** Reconnect the negative terminal of the vehicle's battery.

8. **Test Operation:** Start the vehicle and check for proper throttle response and any diagnostic trouble codes (DTCs). It may be necessary to perform a throttle body relearn procedure, depending on the vehicle manufacturer's specifications. Consult your vehicle's service manual for specific procedures.

## 4. Operation

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The Throttle Position Sensor (TPS) is a potentiometer that measures the angular position of the throttle plate. As the accelerator pedal is pressed, the throttle plate opens, and the TPS sends a varying voltage signal to the Engine Control Unit (ECU).

The ECU uses this signal to:

- Determine engine load and driver demand.
- Adjust fuel injection quantity.
- Control ignition timing.
- Manage automatic transmission shift points.
- Activate idle speed control and wide-open throttle (WOT) enrichment.

A properly functioning TPS ensures smooth engine operation, optimal fuel efficiency, and correct power delivery across the entire throttle range.

## 5. Maintenance

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Throttle Position Sensors are generally maintenance-free components. However, regular inspection of the sensor and its wiring harness can help prevent potential issues.

- **Visual Inspection:** Periodically inspect the sensor and its electrical connector for signs of damage, corrosion, or loose connections. Ensure the wiring harness is not frayed or pinched.
- **Cleaning:** While not typically required, if the throttle body is being cleaned, ensure no cleaning agents come into direct contact with the TPS, as this could damage internal components.
- **Connection Integrity:** Ensure the electrical connector is firmly seated and free from dirt or debris.

If any damage or excessive wear is observed, consider replacing the sensor to maintain optimal engine performance.

## 6. Troubleshooting

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Symptoms of a faulty Throttle Position Sensor can include:

- Hesitation or stumbling during acceleration.
- Rough idle or stalling.
- Surging or bucking at steady speeds.
- Check Engine Light (CEL) illuminated with TPS-related diagnostic trouble codes (e.g., P0120, P0121, P0122, P0123).
- Poor fuel economy.
- Automatic transmission shifting issues.

### Troubleshooting Steps:

1. **Check for DTCs:** Use an OBD-II scanner to retrieve any stored diagnostic trouble codes.
2. **Inspect Wiring:** Visually inspect the TPS wiring harness and connector for any signs of damage, corrosion, or loose connections.
3. **Voltage Check:** With the ignition on and engine off, use a multimeter to check the voltage output from the TPS as the throttle is slowly opened and closed. The voltage should increase smoothly without any drops or spikes. Consult your

vehicle's service manual for expected voltage ranges.

4. **Resistance Check:** If applicable, check the resistance across the TPS terminals using a multimeter. The resistance should change smoothly as the throttle is opened and closed.

If the sensor fails these tests or if symptoms persist after verifying other components, replacement of the TPS may be necessary.

7. Specifications

| Attribute                   | Detail                  |
|-----------------------------|-------------------------|
| Brand                       | Standard Motor Products |
| Model Number                | TH251                   |
| Item Dimensions (L x W x H) | 4 x 2 x 5 inches        |
| Item Weight                 | 1 Pounds                |
| UPC                         | 091769525309            |
| Manufacturer                | Standard Motor Products |
| Date First Available        | November 11, 2005       |

8. Warranty Information

Standard Motor Products provides a limited warranty on its products. For specific warranty terms, conditions, and duration applicable to the TH251 Throttle Position Sensor, please refer to the official Standard Motor Products website or contact their customer service directly. Retain your proof of purchase for warranty claims.

9. Technical Support

For technical assistance, installation questions, or troubleshooting beyond the scope of this manual, please contact Standard Motor Products customer support. You can typically find contact information on their official website or product packaging.

When contacting support, please have the following information ready:

- Product Model Number: TH251
- Vehicle Make, Model, and Year
- Description of the issue

ASK A QUESTION ABOUT THIS MANUAL

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.

Name

Anonymous

## Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

## Question

Example: How do I reset this device or fix this error?

## Details

Model number, symptoms, what you tried, or the section of the manual you are using.

**Submit question**