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## Standard Motor Products TS382

# Standard Motor Products TS382 Temp Sender/Sensor Instruction Manual

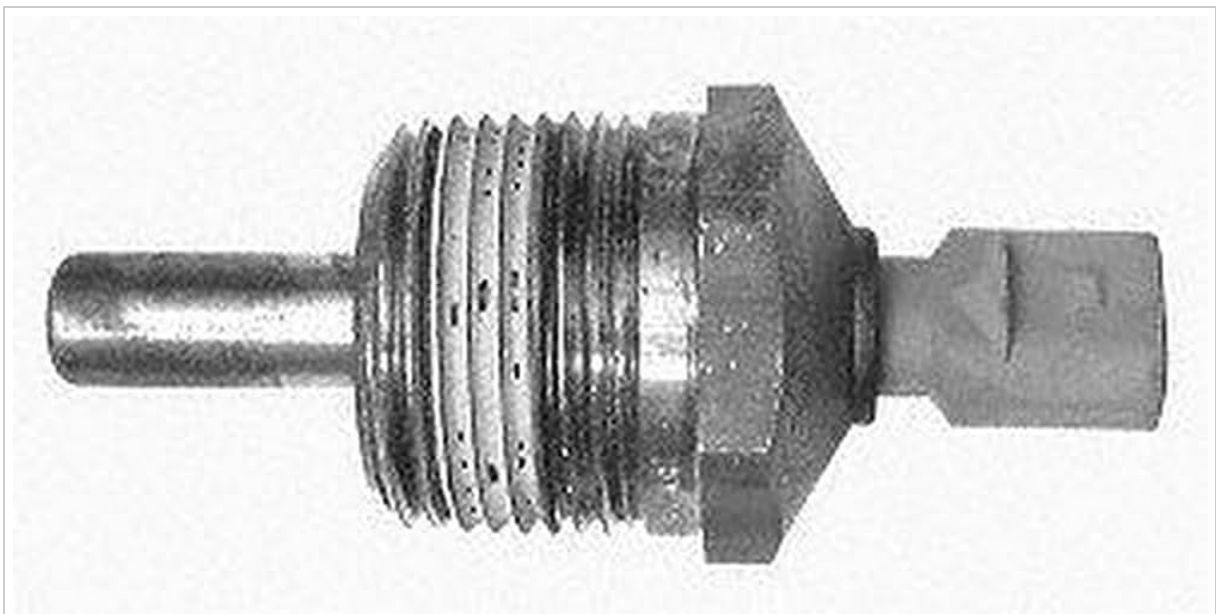
Model: TS382

## 1. INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of the Standard Motor Products TS382 Temp Sender/Sensor. Please read these instructions carefully before proceeding with installation or use to ensure correct function and safety.

## 2. PRODUCT OVERVIEW

The Standard Motor Products TS382 is a robust coolant temperature sender/sensor designed for automotive applications. Its primary function is to measure the temperature of the engine coolant and transmit this data to the vehicle's engine control unit (ECU) or dashboard gauge. Accurate temperature readings are crucial for optimal engine performance, fuel efficiency, and to prevent overheating.



**Figure 1:** The Standard Motor Products TS382 Temp Sender/Sensor, featuring a threaded metal body for secure mounting and an

This sensor is constructed from durable metal, ensuring longevity and reliable performance in demanding engine environments. It features a surface mount design and provides an analog output signal.

### 3. SAFETY INFORMATION

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Always observe the following safety precautions when working on a vehicle:

- Ensure the vehicle's engine is off and has cooled down completely before beginning any work. Hot engine components and fluids can cause severe burns.
- Disconnect the vehicle's battery to prevent electrical shorts or accidental engine starting.
- Wear appropriate personal protective equipment (PPE), including safety glasses and gloves.
- Refer to the vehicle manufacturer's service manual for specific instructions and torque specifications related to your vehicle model.
- Handle automotive fluids, such as engine coolant, responsibly. Dispose of them according to local regulations.

### 4. INSTALLATION

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Installation of the TS382 Temp Sender/Sensor typically involves replacing an existing sensor. If you are unsure about any step, it is recommended to seek assistance from a qualified automotive technician.

1. **Preparation:** Park the vehicle on a level surface, engage the parking brake, and ensure the engine is cool. Disconnect the negative terminal of the battery.
2. **Locate the Old Sensor:** Consult your vehicle's service manual to identify the exact location of the coolant temperature sender/sensor. It is typically found on the engine block, cylinder head, or thermostat housing.
3. **Drain Coolant (if necessary):** Depending on the sensor's location, you may need to drain a portion of the engine coolant to prevent spillage when removing the old sensor. Place a suitable container beneath the drain plug.
4. **Disconnect Electrical Connector:** Carefully disconnect the electrical connector from the old sensor.
5. **Remove Old Sensor:** Use an appropriately sized wrench or sensor socket to unscrew and remove the old sensor. Be prepared for some coolant to escape.
6. **Inspect Mounting Area:** Clean the sensor mounting hole and inspect the threads for any damage.
7. **Install New Sensor:** Apply a small amount of thread sealant (if recommended by the vehicle manufacturer) to the threads of the new TS382 sensor. Carefully thread the new sensor into the mounting hole by hand to avoid cross-threading.
8. **Tighten Sensor:** Tighten the sensor to the vehicle manufacturer's specified torque. Overtightening can damage the sensor or engine component.
9. **Reconnect Electrical Connector:** Firmly connect the electrical connector to the new sensor.
10. **Refill Coolant:** If coolant was drained, refill the cooling system to the appropriate level with the correct type of coolant for your vehicle. Bleed any air from the system as per your vehicle's service manual.
11. **Reconnect Battery:** Reconnect the negative battery terminal.
12. **Test:** Start the engine and check for leaks around the new sensor. Monitor the engine temperature gauge to ensure it is functioning correctly.

### 5. OPERATION

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The Standard Motor Products TS382 Temp Sender/Sensor operates as a thermistor, which is a type of resistor whose resistance is highly dependent on temperature. As the engine coolant temperature changes, the resistance of the sensor changes accordingly. This change in resistance alters the voltage signal sent to the vehicle's ECU or

temperature gauge.

- **Cold Engine:** When the engine is cold, the sensor's resistance is high, resulting in a specific voltage signal.
- **Warm Engine:** As the engine warms up and coolant temperature increases, the sensor's resistance decreases, causing the voltage signal to change.
- **ECU Interpretation:** The ECU interprets these voltage changes to determine the engine's operating temperature. This information is used to adjust fuel injection, ignition timing, and cooling fan operation.
- **Gauge Display:** The signal is also used to drive the temperature gauge on the vehicle's dashboard, providing the driver with a visual indication of engine temperature.

The TS382 is designed to provide accurate and consistent temperature readings within its specified operating range of approximately -40 to 250 degrees Celsius.

## 6. MAINTENANCE

The Standard Motor Products TS382 Temp Sender/Sensor is a sealed unit and generally requires no routine maintenance. However, periodic checks can help ensure its continued reliability:

- **Visual Inspection:** During routine engine checks, visually inspect the sensor and its electrical connector for any signs of damage, corrosion, or loose connections.
- **Coolant Leaks:** Check for any coolant leaks around the sensor's mounting point. Address any leaks promptly to prevent damage to the sensor or other engine components.
- **Wiring Integrity:** Ensure the wiring leading to the sensor is intact and free from cuts, abrasions, or heat damage.

## 7. TROUBLESHOOTING

If you suspect an issue with your coolant temperature sender/sensor, consider the following common symptoms and potential solutions:

| Symptom                                                             | Possible Cause                                                                       | Action                                                                                                                                                                        |
|---------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Engine temperature gauge reads incorrectly (too high/low, erratic)  | Faulty sensor, poor electrical connection, low coolant level, air in cooling system. | Check coolant level and bleed air. Inspect sensor wiring and connector. Test sensor resistance with a multimeter (refer to vehicle specifications). Replace sensor if faulty. |
| Check Engine Light (CEL) illuminated with temperature-related codes | Sensor malfunction, wiring issue, ECU fault.                                         | Retrieve diagnostic trouble codes (DTCs) using an OBD-II scanner. Diagnose based on specific codes. Inspect wiring. Test or replace sensor.                                   |
| Engine running rich or lean, poor fuel economy                      | Inaccurate temperature readings affecting fuel mixture.                              | Verify sensor operation. If sensor is providing incorrect data, replace it.                                                                                                   |
| Cooling fan not operating correctly                                 | Sensor not sending correct temperature signal to ECU.                                | Confirm sensor functionality. Check fan relay and motor.                                                                                                                      |

For complex issues or if troubleshooting steps do not resolve the problem, consult a professional automotive technician.

## 8. SPECIFICATIONS

|                             |                                        |
|-----------------------------|----------------------------------------|
| Brand                       | Standard Motor Products                |
| Model Number                | TS382                                  |
| Product Type                | Auto Part (Coolant Temperature Sensor) |
| Material                    | Metal                                  |
| Style                       | Robust                                 |
| Mounting Type               | Surface Mount                          |
| Output Type                 | Analog                                 |
| Measuring Range (Estimated) | -40 to 250 degrees Celsius             |
| Item Dimensions (L x W x H) | 3 x 2 x 5 inches                       |
| Item Weight                 | 1.92 ounces (0.12 Pounds)              |
| UPC                         | 091769325602                           |

## 9. WARRANTY AND SUPPORT

Standard Motor Products offers a limited warranty on its products. For specific warranty terms and conditions, please refer to the official Standard Motor Products website or contact their customer support directly. Keep your proof of purchase for warranty claims.

For technical assistance or further inquiries, please visit the [Standard Motor Products website](#) or contact their customer service department.