

Mopar 56027872

Mopar 56027872 Air Charge Temperature Sensor User Manual

Official Instructions for Installation, Operation, and Maintenance

PRODUCT OVERVIEW

The Mopar 56027872 Air Charge Temperature (ACT) Sensor is an Original Equipment Manufacturer (OEM) part designed to accurately measure the temperature of the air entering your vehicle's engine. This critical data is used by the engine control unit (ECU) to optimize fuel delivery and ignition timing, ensuring efficient engine operation and performance. This sensor is manufactured to meet precise specifications for fit, form, and function, ensuring compatibility and reliable performance for your specific vehicle.



Figure 1: Front view of the Mopar 56027872 Air Charge Temperature Sensor. This image shows the sensor's main body, threaded section, and the white tip with air vents.

PACKAGE CONTENTS

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

- 1 x Mopar 56027872 Air Charge Temperature Sensor



Figure 2: Side view of the Mopar 56027872 Air Charge Temperature Sensor, highlighting the electrical connector and threaded base.

SETUP AND INSTALLATION

Installation of the Air Charge Temperature Sensor typically involves replacing an existing sensor. It is recommended that installation be performed by a qualified technician. Always refer to your vehicle's specific service manual for detailed instructions and safety precautions.

Safety Precautions:

- Ensure the vehicle's engine is off and cool before beginning any work.
- Disconnect the negative terminal of the vehicle's battery to prevent accidental electrical shorts.
- Wear appropriate personal protective equipment (PPE), such as gloves and eye protection.

Installation Steps:

1. Locate the existing Air Charge Temperature Sensor in your vehicle. Its location varies by vehicle model and engine type, but it is commonly found in the intake manifold or air intake tube.
2. Carefully disconnect the electrical connector from the old sensor.
3. Using an appropriate wrench or socket, unscrew and remove the old sensor. Be prepared for a small amount of fluid leakage if the sensor is installed in a coolant passage (though less common for ACT sensors).
4. Inspect the mounting area for any debris or damage. Clean if necessary.
5. Apply a small amount of thread sealant (if recommended by your vehicle's manual) to the threads of the new Mopar 56027872 sensor.
6. Carefully thread the new sensor into its mounting location by hand to prevent cross-threading.
7. Tighten the sensor to the manufacturer's specified torque using a wrench or socket. Avoid overtightening.
8. Reconnect the electrical connector to the new sensor, ensuring it clicks securely into place.
9. Reconnect the negative terminal of the vehicle's battery.
10. Start the engine and check for proper operation and any diagnostic trouble codes (DTCs).



Figure 3: Angled view of the Mopar 56027872 Air Charge Temperature Sensor, showing the overall compact design.

OPERATING PRINCIPLES

The Mopar 56027872 Air Charge Temperature Sensor operates as a thermistor, which is a type of resistor whose resistance is highly dependent on temperature. As the temperature of the incoming air changes, the sensor's resistance changes accordingly. The vehicle's Engine Control Unit (ECU) monitors this resistance change and converts it into a temperature reading. This temperature data is crucial for the ECU to calculate the correct air density, which in turn affects the amount of fuel injected and the ignition timing for optimal combustion and emissions control.

MAINTENANCE

The Mopar 56027872 Air Charge Temperature Sensor is designed for long-term reliability and typically requires minimal maintenance. However, periodic inspection can help ensure its continued proper function.

Inspection:

- Visually inspect the sensor and its electrical connector for any signs of damage, corrosion, or loose connections during routine vehicle maintenance.
- Ensure the sensor's tip is free from excessive carbon buildup or debris, which could affect its accuracy.

If any issues are observed, consult a qualified automotive technician for diagnosis and potential replacement.

TROUBLESHOOTING

Malfunctions of the Air Charge Temperature Sensor can lead to various engine performance issues. Common symptoms and troubleshooting steps are outlined below. Always consult a professional technician for accurate diagnosis and repair.

Common Symptoms of a Faulty ACT Sensor:

- Check Engine Light (CEL) illuminated with related diagnostic trouble codes (DTCs) such as P0110, P0111, P0112, P0113.
- Poor fuel economy.
- Rough idle or stalling.
- Reduced engine performance or power.

- Difficulty starting the engine, especially in extreme temperatures.

Basic Troubleshooting Steps:

1. **Check Electrical Connection:** Ensure the sensor's electrical connector is securely attached and free from corrosion or damage. Disconnect and reconnect it to ensure a good contact.
2. **Visual Inspection:** Inspect the sensor for any visible signs of physical damage, cracks, or excessive contamination on the sensor tip.
3. **Scan for DTCs:** 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 testing procedures for the ACT sensor, which may involve checking resistance values at different temperatures using a multimeter.

If troubleshooting indicates a faulty sensor, replacement with a genuine Mopar part is recommended to restore proper vehicle operation.

Specifications

The following specifications apply to the Mopar 56027872 Air Charge Temperature Sensor:

Attribute	Value
Brand	Mopar
Model Number	56027872
Part Type	Air Charge Temperature Sensor
Item Weight	1.34 ounces
Product Dimensions (L x W x H)	6 x 4 x 4 inches
Mounting Type	Flange Mount
Output Type	Digital
Measurement Accuracy	High
Upper Temperature Rating	200 Degrees Celsius

Warranty and Support

Specific warranty information for the Mopar 56027872 Air Charge Temperature Sensor is typically provided at the point of purchase or through authorized Mopar dealerships. For detailed warranty terms and conditions, please refer to your purchase documentation or contact an authorized Mopar service center.

For technical support or assistance with installation, it is recommended to consult a certified automotive technician or contact Mopar directly through their official website or customer service channels.

Additional Mopar Information



Figure 4: Mopar brand logo alongside associated vehicle brands: Chrysler, Dodge, Jeep, and Ram.



Figure 5: An example of a Mopar performance air intake system installed in a vehicle's engine bay, showcasing Mopar's commitment to quality parts.



Figure 6: A selection of various Mopar automotive parts, including a wheel, brake rotor, and oil filter, representing the wide range of genuine Mopar components available.