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› [Universal 180°F Degree Turn-On Dual Electric Radiator Cooling Fan Thermostat Temp Sensor Switch 3/8" or 1/2" Inch NPT Sleeve Fitting Thread-in Brass Probe for Cars Trucks RVs](#)

### American Volt AV-1022

## Universal Electric Radiator Cooling Fan Thermostat Temp Sensor Switch User Manual

Brand: American Volt | Model: AV-1022

### 1. INTRODUCTION AND PRODUCT OVERVIEW

This manual provides detailed instructions for the installation, operation, and maintenance of your American Volt Universal Electric Radiator Cooling Fan Thermostat Temp Sensor Switch. This product is designed to automatically control electric cooling fans in automotive applications based on engine or fluid temperature.

The kit includes two temperature sensor switches, each featuring a brass thread-in probe compatible with 3/8" and 1/2" NPT threaded ports. The switch is engineered to activate (ground) the cooling fan when the temperature reaches 180°F and deactivate it when the temperature drops to 165°F, ensuring optimal engine cooling.

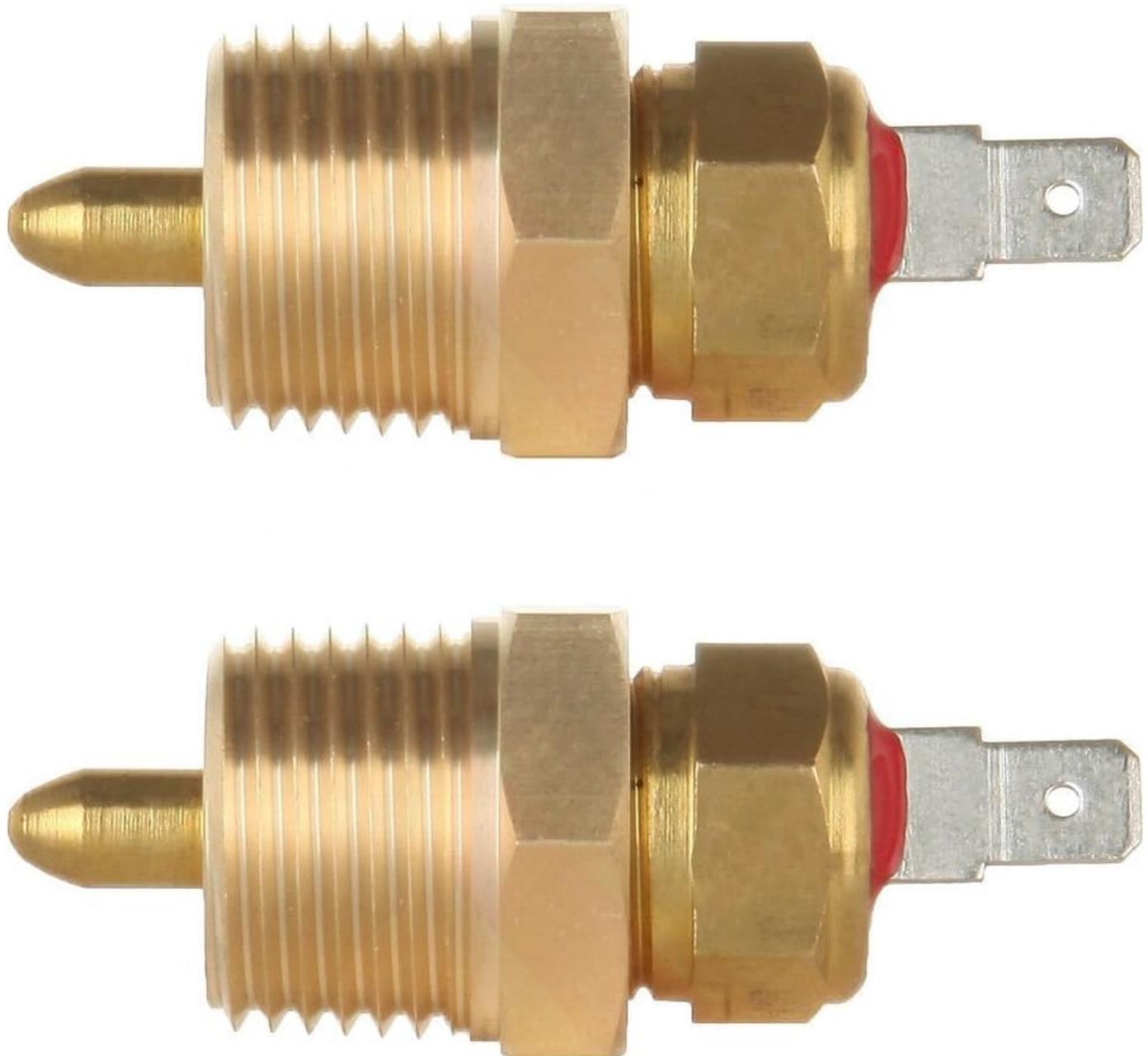


Image 1.1: Two American Volt Universal Electric Radiator Cooling Fan Thermostat Temp Sensor Switches. These are the primary components of the product, showing their brass construction and electrical terminals.

## 2. PRODUCT FEATURES

- **Dual Pack:** Includes two automotive engine grounding fan temperature switches.
- **Temperature Activation:** Grounds the fan at 180°F and turns off at 165°F.
- **Versatile Probe:** Brass thread-in temperature probe with 3/8" and 1/2" NPT adapter.
- **Universal Application:** Suitable for any application with a 1/2" NPT threaded port.
- **Flexible Mounting:** Threads into engine block, radiator, manifold, water outlet, or other suitable locations.
- **Fluid Compatibility:** Capable of measuring the temperature of various liquids, including motor oil.
- **Included Connectors:** Comes with 2 insulated female wire connectors for ease of installation.

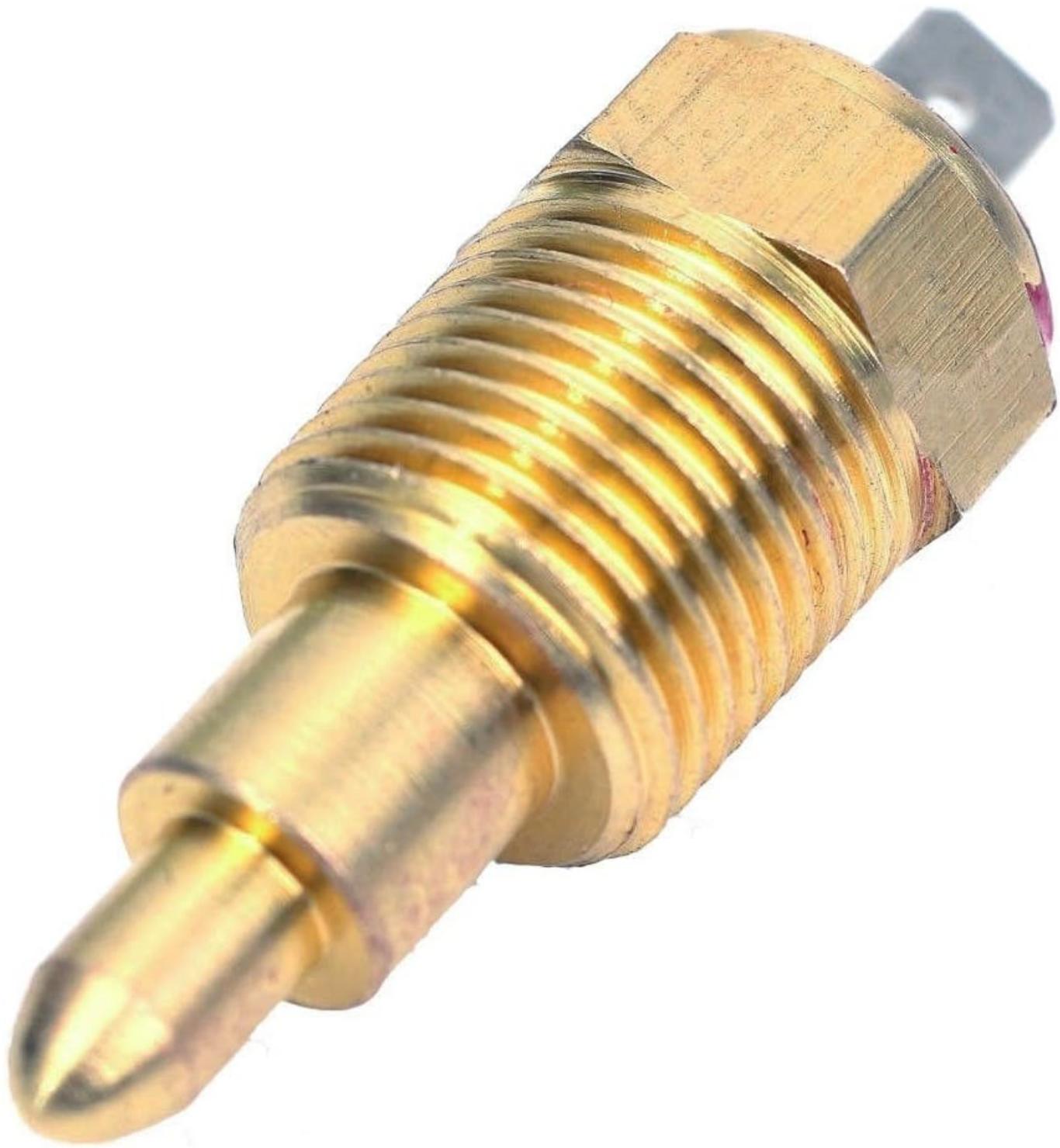


Image 2.1: Detailed view of a single American Volt temperature sensor switch. This image highlights the brass probe and the threaded body, which allows for secure installation into various automotive components.

### 3. SPECIFICATIONS

Specification	Value
Operation Mode	Automatic
Operating Voltage	12 Volts (DC)
Contact Type	Normally Open
Connector Type	Screw

Specification	Value
Terminal	Screw
Circuit Type	1-way
Mounting Type	Threaded Mount
Contact Material	Brass
International Protection Rating	IP00
Number of Positions	2
Lower Temperature Rating (Turn-Off)	165 Degrees Fahrenheit
Upper Temperature Rating (Turn-On)	180 Degrees Fahrenheit
Unit Count	2.0 Count
Manufacturer Part Number	AV-1022

## 4. SETUP AND INSTALLATION

Proper installation is crucial for the correct operation of the temperature sensor switch. Always disconnect the vehicle's battery before beginning any electrical work.

### 4.1. Choosing an Installation Location

The sensor can be threaded into any suitable 1/2" NPT port that accurately reflects the temperature of the fluid you wish to monitor. Common locations include:

- Engine block
- Radiator (in-tank or hose adapter)
- Intake manifold
- Water outlet

Ensure the chosen location allows the brass probe to be fully immersed in the fluid for accurate temperature readings. If your port is 3/8" NPT, use the provided adapter.

#### NPT - American Standard Pipe Thread/Taper Guide\*\*

NPT is not a measured size, it is rather an industry call out size.  
The NPT call out designation is not the true thread diameter inside or out.  
See graphic and use the thread conversion chart to find your NPT size.

Pipe Size	Actual Outside Pipe Diameter OD (Inches)
1/16" NPT	0.313" (approx 5/16")
1/8" NPT	0.405" (approx 13/32")
1/4" NPT	0.540" (approx 1/2")
3/8" NPT	0.675" (approx 5/8")
1/2" NPT	0.840" (approx 7/8")
3/4" NPT	1.050" (approx 1-1/16")
1" NPT	1.315" (approx 1-5/16")

MALE PIPE/PIPE FITTING  
MEASURE O.D.  
0.675" (5/8")  
Pipe Size = 3/8" NPT

Image 4.1: NPT - American Standard Pipe Thread/Taper Guide. This guide helps in identifying the correct NPT size for your application, ensuring a proper fit for the sensor switch.

### 4.2. Mechanical Installation

1. Ensure the engine and cooling system are cool to prevent burns.
2. Drain a small amount of coolant if installing directly into the cooling system to prevent spills.
3. Apply a suitable thread sealant (e.g., PTFE tape or liquid thread sealant) to the threads of the sensor probe.

4. Carefully thread the sensor into the chosen port. Do not overtighten, as this can damage the sensor or the port. Tighten until snug and leak-free.
5. Refill any drained coolant and check for leaks.

### 4.3. Electrical Wiring

The sensor switch operates by providing a ground signal to activate a relay, which in turn powers the electric cooling fan. Refer to the wiring diagram below for proper connections.

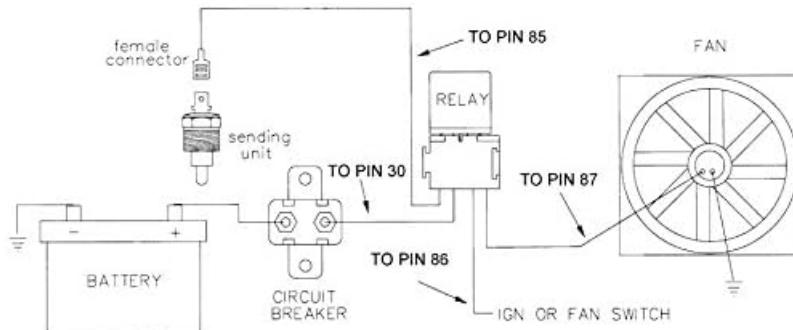


Image 4.2: Typical Wiring Diagram for Electric Cooling Fan Thermostat Switch. This diagram illustrates how to connect the temperature sensor switch to a relay, circuit breaker, battery, and the electric fan for automatic operation.

1. **Connect to Sensor:** Use the provided insulated female wire connectors to attach a wire to the single terminal on the temperature sensor switch.
2. **Connect to Relay:** Connect the other end of this wire to the appropriate terminal on your fan relay (typically pin 85 or the coil ground terminal).
3. **Power and Fan Connections:** Follow the relay manufacturer's instructions for connecting the relay to the battery (via a circuit breaker), ignition/fan switch (if applicable), and the electric cooling fan. Ensure all connections are secure and properly insulated.
4. **Grounding:** Ensure the fan and battery have proper chassis grounds. The sensor switch provides a ground signal to the relay.

**Important:** Always use an appropriately rated circuit breaker or fuse in the main power line to protect the circuit.

## 5. OPERATING INSTRUCTIONS

Once properly installed and wired, the American Volt temperature sensor switch operates automatically. There are no user-adjustable settings.

- When the fluid temperature reaches approximately **180°F (82°C)**, the sensor switch will close its internal contacts, providing a ground signal to the connected relay. This will activate the electric cooling fan.
- The cooling fan will continue to run until the fluid temperature drops to approximately **165°F (74°C)**. At this point, the sensor switch will open its contacts, interrupting the ground signal and deactivating the cooling fan.

This cycle will repeat as necessary to maintain the desired operating temperature range for your cooling system.

## 6. MAINTENANCE

The American Volt temperature sensor switch is designed for long-term, maintenance-free operation. However, periodic checks can help ensure continued reliability:

- **Visual Inspection:** Periodically inspect the sensor and its wiring for any signs of corrosion, damage, or loose connections.
- **Fluid Leaks:** Check around the sensor's threaded connection for any signs of coolant or fluid leaks. Tighten if necessary, but do not overtighten.

- **Electrical Connections:** Ensure the female wire connector remains securely attached to the sensor terminal.
- **Cleanliness:** Keep the sensor and surrounding area free of excessive dirt, grease, or debris.

## 7. TROUBLESHOOTING

If your electric cooling fan is not operating as expected with the temperature sensor switch, consider the following troubleshooting steps:

Problem	Possible Cause	Solution
Fan does not turn on at 180°F	No power to relay; Faulty relay; Open circuit in wiring; Sensor not reaching temperature; Faulty sensor	Check circuit breaker/fuse; Test relay operation; Inspect all wiring connections (refer to Image 4.2); Verify engine/fluid temperature with a separate gauge; Test sensor continuity (should show continuity when hot); Replace faulty component.
Fan runs continuously	Sensor stuck closed (grounded); Wiring shorted to ground; Faulty relay	Disconnect sensor wire from relay; if fan stops, sensor is faulty. If fan continues, check wiring for shorts or replace relay.
Inaccurate temperature readings	Sensor not fully immersed in fluid; Air pocket around sensor; Incorrect sensor type	Ensure sensor probe is fully submerged; Bleed cooling system to remove air; Verify correct sensor for application.
Fluid leaks around sensor	Insufficient thread sealant; Overtightened/damaged threads	Remove, reapply thread sealant, and reinstall; Inspect threads for damage; Replace sensor or port if threads are stripped.

If troubleshooting steps do not resolve the issue, it is recommended to consult a qualified automotive technician.

## 8. WARRANTY INFORMATION

Specific warranty details for American Volt products are typically provided at the point of purchase or on the manufacturer's official website. Please retain your proof of purchase for any warranty claims. For the most current and detailed warranty information, please refer to the American Volt official website or contact their customer support directly.

## 9. SUPPORT

For technical assistance, product inquiries, or support, please contact American Volt customer service. Visit the official American Volt website for contact information, FAQs, and additional resources.

**American Volt Store:** [Visit the American Volt Store on Amazon](#)

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## Related Documents - AV-1022

	<p><a href="#">How to Access AViPAS Cameras via IP - Network Configuration Guide</a></p> <p>Step-by-step guide to accessing AViPAS IP cameras by connecting them directly to your computer via Ethernet, with detailed network configuration instructions for Windows and macOS.</p>
	<p><a href="#">Manuel d'utilisation Téléviseur Couleur JVC AV-21DX3, AV-21LX2, AV-21WX3, AV-25KX3, AV-25LX3, AV-29LX2, AV-29WX3</a></p> <p>Découvrez comment utiliser et configurer votre téléviseur couleur JVC (modèles AV-21DX3, AV-21LX2, AV-21WX3, AV-25KX3, AV-25LX3, AV-29LX2, AV-29WX3) avec ce manuel d'instructions complet. Apprenez les consignes de sécurité, les connexions, les réglages initiaux, l'utilisation de la télécommande et le dépannage.</p>
	<p><a href="#">Parker Pargrip PFA Tube Fittings: Specifications and Assembly Instructions</a></p> <p>Comprehensive guide to Parker Pargrip PFA tube fittings, detailing assembly procedures, product specifications, dimensions, and part numbers for a wide range of fittings including adaptors, connectors, tees, and reducers.</p>
	<p><a href="#">JVC Color Television User's Guide - Models AV-36150 to AV-27150</a></p> <p>Comprehensive user manual for JVC Color Televisions, covering setup, connections, remote controls, menu functions, safety precautions, troubleshooting, warranty, and specifications for models AV-36150, AV-36120, AV-35155, AV-32150, AV-32120, AV-32115, and AV-27150.</p>
	<p><a href="#">Nissan Audio Visual, Navigation &amp; Telephone System Service Manual</a></p> <p>This service manual from K ELECTRICAL provides detailed technical information for Nissan's Audio Visual, Navigation, and Telephone Systems. It covers system descriptions, component locations, wiring diagrams, troubleshooting, and removal/installation procedures for audio, navigation, and related components like AUDIOPILOT™ and BOSE systems.</p>
	<p><a href="#">Etekcity Lasergrip 1022 Infrared Thermometer User Manual and Specifications</a></p> <p>Detailed user manual and specifications for the Etekcity Lasergrip 1022 infrared thermometer, covering operation, safety, features, and technical details.</p>