

A19AAT Type Cooling Thermostats for Portable Applications

Application

IMPORTANT: The A19AAT type thermostats are intended to control equipment under normal operating conditions. Where failure or malfunction of an A19AAT thermostat could lead to an abnormal operating condition that could cause personal injury or damage to the equipment or other property, other devices (limit or safety controls) or systems (alarm or supervisory) intended to warn of or protect against failure or malfunction of the A19AAT thermostat must be incorporated into and maintained as part of the control system.

The A19AAT type thermostats are single-stage cooling controls with Single-Pole, Single-Throw (SPST) switches that open on temperature drop.

The A19AAT type thermostats are designed to override on-board refrigerator thermostats and provide accurate temperature control outside of the range of the on-board thermostats.

The A19AAT-2 model thermostat has an adjustable 20 to 80°F (-7 to 27°C) set point range, a fixed differential, and is enclosed in a rugged steel NEMA 1 enclosure.

Installation

Parts Included

Parts included with an A19AAT type thermostat are:

- one beaded-chain mounting hanger with sleeves and snap plugs, and mounting-hanger assembly instructions
- one factory-installed set point adjustment knob
- one pre-wired 6 ft. extension cord with a polarized, grounded, in-series, male plug and female plug-end that is mounted to the control with a strain relief fitting

Dimensions

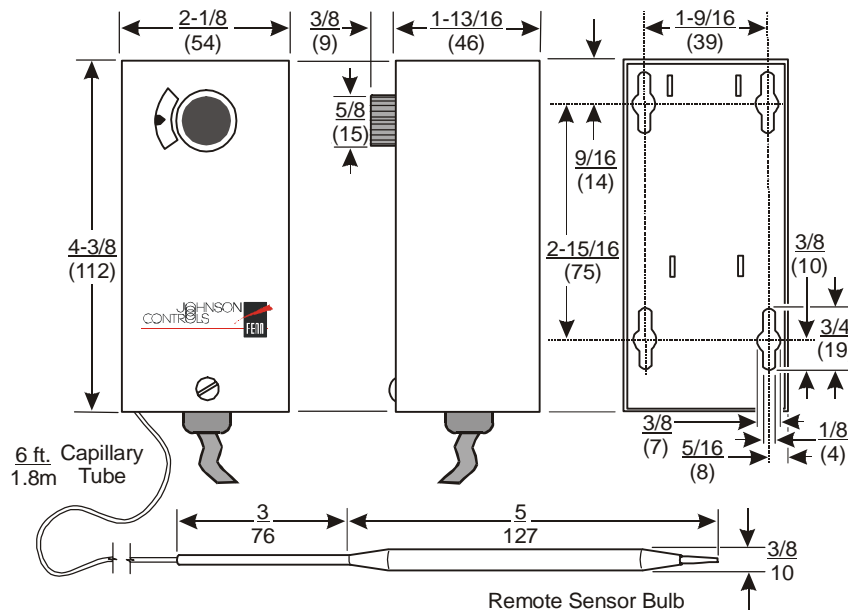


Figure 1: A19AAT-2C Model Thermostat Dimensions, in. (mm)

Mounting



WARNING: Risk of Electric Shock

Unplug the thermostat from the power receptacle before removing the thermostat cover. Contact with internal components carrying hazardous voltage can cause electric shock and may result in severe personal injury or death.

Mount the thermostat in an accessible location where the control body, electrical cord, capillary tube and sensing element are not subject to damage.

Mount the thermostat to a flat, vertical surface through the mounting holes in back of the case or hang the thermostat from a sturdy support using the beaded-chain assembly included with the thermostat.

Refer to the assembly instruction included with the beaded-chain hanger assembly.

IMPORTANT: Mounting an A19AAT type thermostat on a rough or uneven surface may warp the control case and cause the thermostat to operate out of the intended temperature range. When mounting to rough or uneven surfaces, use only the top two mounting holes at the back of the thermostat. To avoid warping the thermostat case, do not over tighten the mounting screws.

Protecting the Capillary Tube and Sensing Bulb

Observe the following Caution statements when installing the thermostat and mounting the remote sensor bulb.



CAUTION: Risk of Environmental and Property Damage

Avoid sharp bends in capillary tubes. Sharp bends can damage the capillary tubes and may result in release of the chemical charge in the sensing element or restrictions of flow, which may result in damage to the environment or property.



CAUTION: Risk of Environmental and Property Damage

Coil and secure excess capillary tubing away from contact with sharp or abrasive objects or surfaces. Vibration and sharp or abrasive objects in contact with capillary tubes can cause damage that may result in release of the chemical charge in the sensing element, which may result in damage to the environment or property.



CAUTION: Risk of Property Damage

Do not dent or deform the sensing bulb. Dents or deformations in the sensing bulb can change the control calibration and may cause the control to operate at temperatures other than the set point, which may result in property damage.

Wiring

Observe the following safety statements and see the wiring diagram in Figure 2 when powering the thermostat and adjusting the thermostat's set point stop. Do not change or alter the factory wiring of the A19AAT type thermostat in any way.



WARNING: Risk of Electric Shock

Unplug the thermostat from the power receptacle before removing the thermostat cover. Contact with internal components carrying hazardous voltage can cause electric shock and may result in severe personal injury or death.

IMPORTANT: Plug the A19AAT type thermostat into a polarized, earth ground receptacle or socket only.

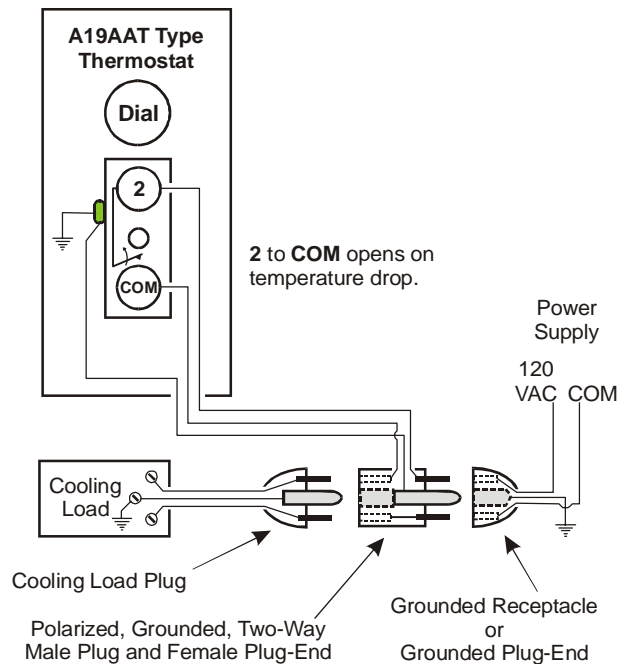


Figure 2: Wiring for the A19AAT Type Thermostat

Setup and Adjustments

The A19AAT type thermostats are designed to override the on-board thermostat on 120 VAC refrigerators and maintain a temperature set point above the range of the on-board thermostat.

On refrigerator control applications:

1. Adjust the refrigerator's on-board thermostat to the coldest setting.
2. Plug the refrigerator's plug into the thermostat's female plug end and plug the male plug into a polarized, grounded 120 VAC receptacle.
3. Adjust the A19AAT thermostat set point.

IMPORTANT: Do not use the freezer portion of a refrigerator when using an A19AAT type thermostat to override a refrigerator's on-board thermostat. On override applications the freezer compartment of the refrigerator may not adequately freeze products in the freezer compartment.

Adjusting the Thermostat Set Point

Adjust the set point using the external adjustment knob. The set point adjustment range on the A19AAT-2C model thermostat is 20 to 80°F (-7 to 27°C).

The thermostat temperature differential is factory set at 3.5°F (2C°) and is not adjustable.

Adjusting the Set Point Stop

A19AAT type thermostats have an adjustable set point stop that may be set to limit the low cutout temperature adjustment. See Figure 3.



WARNING: Risk of Electric Shock

Unplug the thermostat from the power receptacle before removing the thermostat cover. Contact with internal components carrying hazardous voltage can cause electric shock and may result in severe personal injury or death.

To adjust and set the set point stop:

1. Disconnect the thermostat plug from the power supply receptacle and remove the thermostat cover.

2. Loosen the set point stop adjustment screw and move it along the set point stop bracket (while adjusting the temperature range dial) until the adjustment screw is positioned in the path of the appropriate set point stop adjustment step (Figure 3).

IMPORTANT: Always retighten the set point stop adjustment screw before putting the thermostat into operation. Failure to retighten the set point stop screw may cause the thermostat to lose calibration.

The set point stop temperature is indicated by the set point indicator.

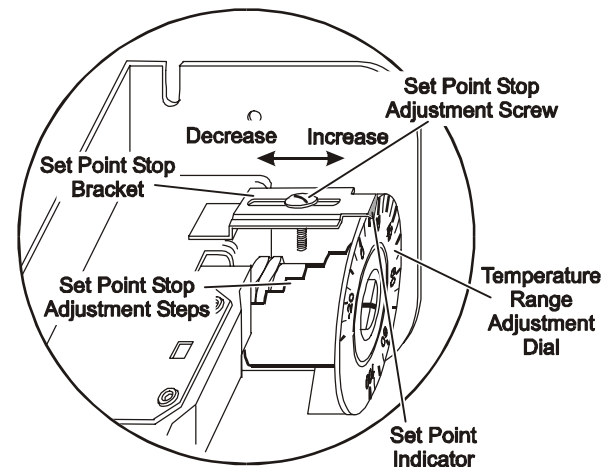


Figure 3: Adjusting the Set Point Stop

Checkout

Before applying power, make sure installation and plug connections are according to job specifications. After completing the necessary checks and adjustments, an operational checkout is required.

Adjust the control set point to put the system in operation and observe at least three complete operating cycles to be sure that all components are functioning correctly.

If the system fails to operate, recheck the wiring, settings, and components.

Repairs and Replacement

Do not make field repairs to A19AAT type thermostats. Contact the nearest Johnson Controls distributor for a replacement thermostat.

Technical Specifications

Product	A19AAT Type Cooling Thermostats for Portable Applications A19AAT-2 Model Cooling Thermostat		
Switch Action	SPST Pennswitch (See Figure 2.)		
Temperature Bulb Style and Capillary Tube Length	Style 1 Remote Sensing Bulb with a 6 ft. (1.8 m) Capillary Tube		
Temperature Range	20 to 80°F; (-7 to 27°C)		
Differential	3.5°F° (2C°) Non-adjustable		
Ambient Temperature	-40 to 140°F; (-40 to 60°C)		
Maximum Allowable Bulb Temperature	140°F (60°C)		
Electrical Ratings	Applied Voltage	120 VAC	
	Motor, Full Load Amperes	15 A	
	Motor, Locked Rotor Amperes	90 A	
	Non-inductive, SPST Watts	1000 W	
	Pilot Duty Volt-Amperes	125 VA	
Case and Cover	NEMA 1 Enclosure: Case, galvanized steel. Cover, galvanized and painted steel		
Dimensions (H x W x D)	4-3/8 x 2-1/8 x 1-13/16 in. (112 x 54 x 46 mm)		
Approx. Shipping Weight	1.6 lb (0.7 kg)		

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, contact Application Engineering at 1-800-275-5676. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.



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Published in U.S.A.
www.johnsoncontrols.com