



A19PC Series Temperature Controls with Type 4X Raintight Enclosures

Product Bulletin

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Application

Important: The A19PC Series Temperature Control with Type 4X Raintight Enclosure is intended to provide an input to equipment under normal operating conditions. Where failure or malfunction of the control could lead to personal injury or property damage to the controlled equipment or other property, additional precautions must be designed into the control system. Incorporate and maintain other devices, such as supervisory or alarm systems or safety or limit controls, intended to warn of or protect against failure or malfunction of the control.

Important : L'A19PC Series Temperature Control with Type 4X Raintight Enclosures est destiné à transmettre des données entrantes à un équipement dans des conditions normales de fonctionnement. Lorsqu'une défaillance ou un dysfonctionnement du control risque de provoquer des blessures ou d'endommager l'équipement contrôlé ou un autre équipement, la conception du système de contrôle doit intégrer des dispositifs de protection supplémentaires. Veiller dans ce cas à intégrer de façon permanente d'autres dispositifs, tels que des systèmes de supervision ou d'alarme, ou des dispositifs de sécurité ou de limitation, ayant une fonction d'avertissement ou de protection en cas de défaillance ou de dysfonctionnement du control.

A19PC series electromechanical temperature controls are designed for use in many agricultural applications. A19PC controls have rugged polycarbonate enclosures and are UL listed as Type 4X and for use in National Electrical Code (NEC) Article 547 Agricultural Environments (ANSI/NFPA 70).

Adjustable A19PC series temperature controls have O-ring sealed external setpoint adjustment knobs and range scales with oversized markings for easy readability in low light. The exposed portion of the liquid expansion sensing elements has been tested according to Article 547 of the NEC.

Important: Do not dent, bend, uncoil, or otherwise alter the position of the sensing element, also known as the coil, which is mounted on the base of A19PC type controls. If you damage the sensing element, you could change the control calibration and you void any warranties on the control.

Operation

When the temperature at the sensing element rises to the setpoint, which you view on the dial setting, the switch between R and Y closes, and the switch between R and B opens on single-pole, double-throw (SPDT) models. See Figures 2, 3, and 4.

Installation

Dimensions

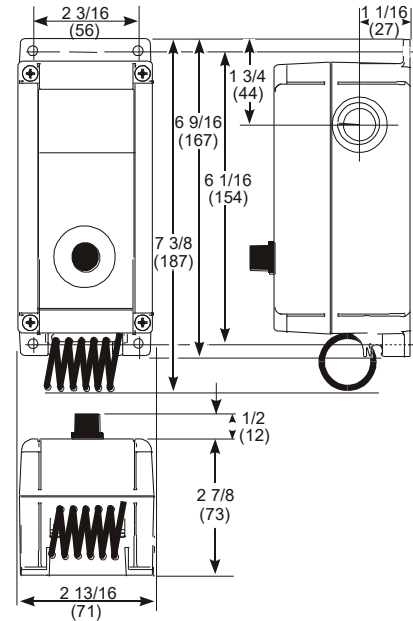


Figure 1: Dimensions for A19PC temperature controls with Type 4X enclosures, in. (mm)

Mounting

Mount the temperature control on a wall where it is exposed to the average temperature of the controlled space. Do not mount the control where unusual heat or cold could affect it, such as directly over an animal stall or in sunlight. Avoid locations near a door, window, or other sources of non-ambient air drafts. Do not mount the control on an outside wall or where temperature at the bulb exceeds 140°F (60°C).

To mount the temperature control to a flat surface, insert screws through the holes in the T19PC's mounting tabs. See Figure 1.

Wiring

WARNING Risk of Electric Shock. Disconnect or isolate all power supplies before making electrical connections. More than one disconnection or isolation may be required to completely de-energize equipment. Contact with components carrying hazardous voltage can cause electric shock and may result in severe personal injury or death.

AVERTISSEMENT Risque de décharge électrique. Débrancher ou isoler toute alimentation avant de réaliser un branchement électrique. Plusieurs isolations et débranchements sont peut-être nécessaires pour couper entièrement l'alimentation de l'équipement. Tout contact avec des composants conducteurs de tensions dangereuses risque d'entraîner une décharge électrique et de provoquer des blessures graves, voire mortelles.

Important: All wiring must conform to all local, national and regional regulations. Use copper conductors only for all wire connections.

Important: Do not use A19 temperature controls on applications where the electrical load across the control's switch could exceed the electrical ratings shown on the temperature control's label.

Important: Use only the terminal screws supplied with the switch. If you use other screws in the switch, you void the warranty, and could damage the switch and cause problems with making secure connections.

There are three 1/2 in. trade-size conduit knockouts on the control. To make wiring connections, complete the following steps:

1. Loosen the four cover screws and remove the cover and knob assembly. Do not remove the knob: it is secured in the cover. Do not damage the O-ring seal.
2. Select the knockout that you want to remove.
3. Place a screwdriver blade on the knockout near the edge.
4. Apply a sharp blow to the screwdriver handle to loosen the knockout.
5. Connect an approved watertight conduit fitting to the conduit.
6. Connect the fitting to the A19PC control enclosure.
Note: For flexible conduits, you can reverse Step 5 and Step 6.
7. Insert the wire through the conduit opening.
8. Make the wiring connections to the screw terminals. See Figures 2, 3, and 4.
9. Ensure that the enclosure O-ring is securely seated in the groove so that it forms a correct seal between the cover and case.
10. Replace cover and knob assembly.
11. Check the alignment of the range adjustment knob.

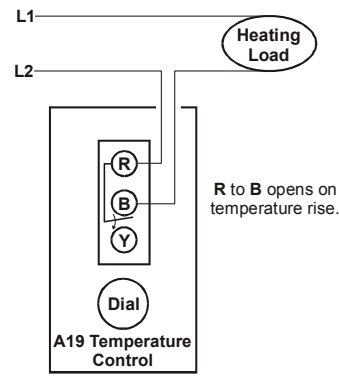


Figure 2: Standard wiring for heating applications

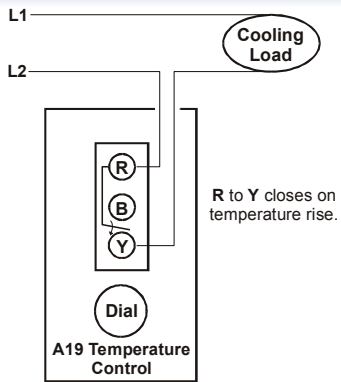


Figure 3: Standard wiring for cooling applications

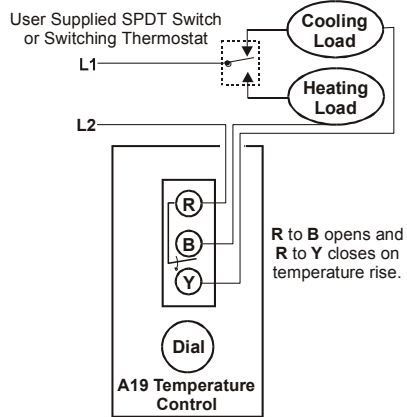


Figure 4: Standard wiring for combination heating and cooling applications

Setup and adjustments

Turn the knob on the front of the temperature control to change the control temperature setpoint.

Checkout

Before you leave the installation, observe at least three complete operating cycles of the controlled equipment to ensure that all components function correctly.

Follow the guidelines below to check for correct A19PRC temperature control operation.

Heating applications:

1. Turn the dial clockwise to a setpoint greater than the space temperature.
2. Check that the heating system cycles on.
3. Turn the dial counterclockwise to a setpoint less than the space temperature.
4. Check that the heating system cycles off.

Cooling or ventilating applications:

1. Turn the dial clockwise to a setpoint greater than the space temperature.
2. Check that the ventilating or cooling system cycles off.
3. Turn the dial counterclockwise to a setpoint less than the space temperature.
4. Check that the ventilating or cooling system cycles on.

If the temperature control does not operate correctly, check the wiring for short circuits and check that the wiring connections are tight.

Repairs and replacement

Do not repair the A19PRC series control in the field. Contact your Johnson Controls® or PENN sales representative or authorized distributor for a replacement control.

Technical specifications

Product	A19PRC type temperature controls with Type 4X raintight enclosures						
Switch contact ratings	Applied VAC	24	120	208	240	277	600
	Motor, full load amperes	–	16	9.2	8	–	–
	Motor, locked rotor amperes	–	96	55.2	48	–	–
	Non-inductive, single-pole, single-throw (SPST) amperes	–	22	22	22	22	–
	Non-inductive, SPDT amperes	–	16	16	16	16	–
	Pilot duty, volt-amperes	125	125	125	125	125	125
Ambient operating conditions	-26°F to 140°F (-32°C to 60°C)						
Ambient storage conditions	-40°F to 140°F (-40°C to 60°C)						
Shipping weight	1.2 lb (0.54 kg)						
Agency listings	UL Listed; File E6688, CCN XAPX (US) and XAPX7 (Canada) UL Listed as Type 4X and for NEC Article 547 Agricultural Environments						

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