

## A19PRC Type Temperature Controls with NEMA 4X Raintight Enclosures

### Application

**IMPORTANT:** The A19 Type Temperature Control with NEMA 4X Raintight Enclosures 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'A19 Type Temperature Control with NEMA 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.

The A19PRC type electromechanical temperature controls are designed for use in many agricultural applications. The A19PRC controls have rugged Noryl® plastic enclosures and are UL Listed as NEMA Type 4X and for use in National Electrical Code (NEC) Article 547 Agricultural Environments (ANSI/NFPA 70). See Figure 1 and *Technical Specifications*.

The adjustable A19PRC type 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 per Article 547 of the NEC.

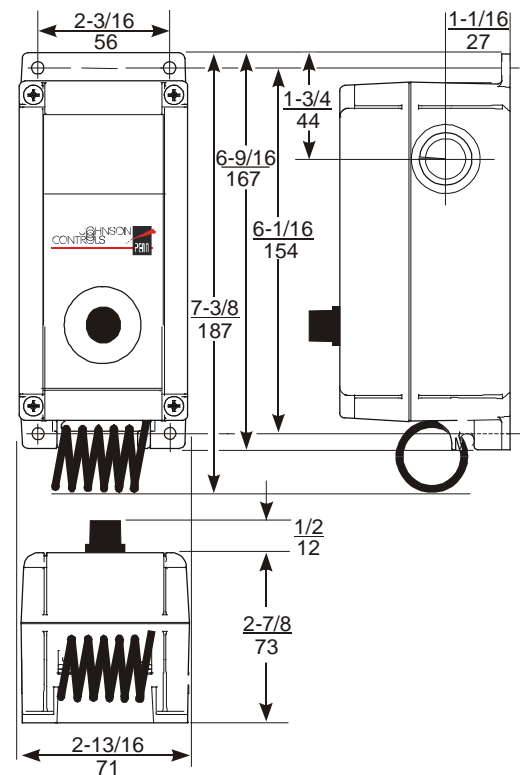
**IMPORTANT:** Do not dent, bend, uncoil, or otherwise alter the position of the sensing element (coil) mounted on the base of the A19PRC type controls. Damaging the sensing element (coil) may change the control calibration and voids any warranties on the control.

### Operation

When the temperature at the sensing element rises to the setpoint (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 A19PRC Temperature Controls with NEMA 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 where it may be affected by unusual heat or cold, 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 on an outside wall or where temperature at the bulb (coil) exceeds 140°F (60°C).

Mount the temperature control to a flat surface with screws through the holes in the mounting ears on the back of the case. 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 may exceed the electrical ratings shown on the temperature control's label.

**IMPORTANT:** Use only the terminal screws furnished with the switch. Using other screws in the switch voids the warranty, may damage the switch, and cause problems in making secure connections.

There are three 1/2 in. (Trade-size) conduit knockouts on the A19PRC NEMA 4X enclosure. To make wiring connections, proceed as follows:

1. Loosen the four cover screws and remove the cover and knob assembly. The knob is secured in the cover and must not be removed. Do not damage the O-ring seal.
2. Select the knockout to be removed. Place a screwdriver blade on the knockout near the edge. Apply a sharp blow to the screwdriver handle to loosen the knockout.

**Note:** For watertight connection to rigid conduit, connect an approved watertight conduit fitting to the conduit first, and then connect the fitting to the A19P control enclosure.

3. Insert wire through conduit opening.
4. Make wiring connections to the screw terminals. See Figures 2, 3, and 4.
5. Ensure that the O-ring seal is properly seated. Replace cover and knob assembly. Check the alignment of the range adjustment knob.

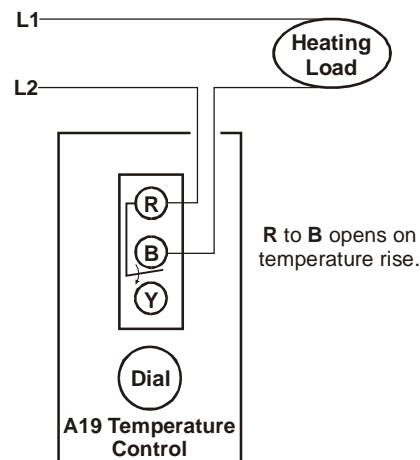
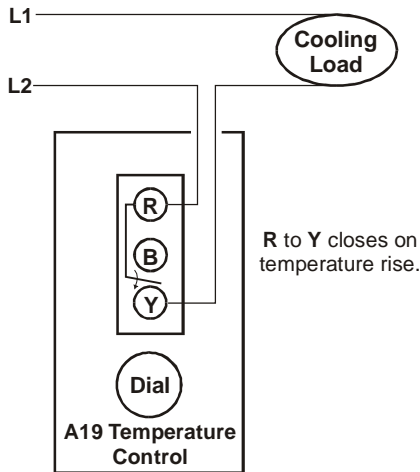


Figure 2: Typical Wiring for Heating Applications



**Figure 3: Typical Wiring for Cooling Applications**

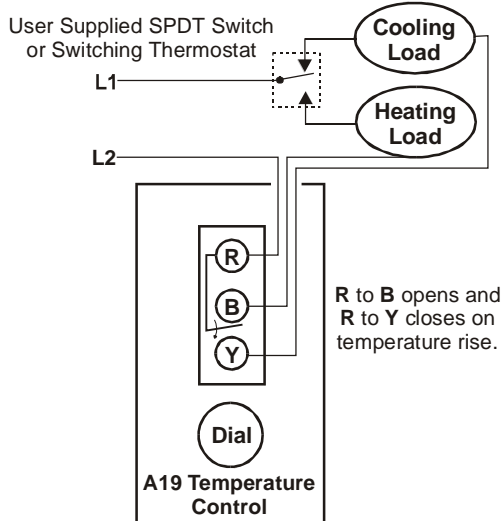
For Heating applications: turn the dial clockwise to a setpoint greater than the space temperature, and the heating system should cycle on. Turn the dial counterclockwise to a setpoint less than the space temperature, and the heating system should cycle off.

For Cooling or Ventilating applications: turn the dial clockwise to a setpoint greater than the space temperature, and the ventilating or cooling system should cycle off. Turn the dial counterclockwise to a setpoint less than the space temperature, and the ventilating to cooling system should cycle on.

If the temperature control does not operate in the manner described above, check the wiring for short circuits and tightness of wiring connections.

## Repairs and Replacement

The A19PRC controls are not field repairable; do not attempt to repair a control that is not functioning properly. Contact your Johnson Controls/PENN sales representative or authorized distributor for a replacement control.



**Figure 4: Typical 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 leaving the installation, observe at least three complete operating cycles of the controlled equipment to ensure that all components are functioning correctly.

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

## Technical Specifications

Product	A19PRC Type Temperature Controls with NEMA 4X Raintight Enclosures						
<b>Switch Contact Ratings</b>	<b>Applied VAC</b>	<b>24</b>	<b>120</b>	<b>208</b>	<b>240</b>	<b>277</b>	<b>600</b>
	Motor, Full Load Amperes	-	16	9.2	8	-	-
	Motor, Locked Rotor Amperes	-	96	55.2	48	-	-
	Non-inductive, SPST Amperes	-	22	22	22	22	-
	Non-inductive, SPDT Amperes	-	16	16	16	16	-
	Pilot Duty Volt-Amperes	125	125	125	125	125	125
<b>Ambient Operating Conditions</b>	-26 to 140°F; (-32 to 60°C)						
<b>Ambient Storage Conditions</b>	-40 to 140°F; (-40 to 60°C)						
<b>Shipping Weight</b>	1.2 lb (0.54 kg)						
<b>Agency Listings</b>	UL Listed; File E6688, CCN XAPX (US) and XAPX7 (Canada) UL Listed as Type 4X and for NEC Article 547 Agricultural Environments						

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



**Building Efficiency**  
507 E. Michigan Street, Milwaukee, WI 53202

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