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› Johnson Controls A419ABC-1C Electronic Temp Controller User Manual

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Model: A419ABC1C

INTRODUCTION

The Johnson Controls A419ABC-1C is a single-stage, electronic temperature control designed for precise temperature management. It features a Single Pole, Double Throw output relay, making it suitable for various heating and cooling applications. This manual provides essential information for the proper installation, operation, and maintenance of your A419ABC-1C controller.



Figure 1: The Johnson Controls A419ABC-1C Electronic Temperature Controller. The unit is gray, rectangular, and features an LCD display, 'MENU', 'Up', and 'Down' buttons on its front panel. A coiled gray sensor cable with exposed wires at the end is shown next to the controller.

KEY FEATURES

- **Setpoint Range:** -30 to 212°F (-34 to 100°C)
- **Differential Range:** 1 to 30°F (1 to 30°C)
- Suitable for almost any refrigeration or HVAC control-voltage application.
- Easy-to-read Liquid Crystal Display (LCD) for viewing temperature and status.
- Adjustable anti-short cycle delay.
- Temperature offset (setback) function.
- Lockable front-panel touchpad for secure setup and adjustment.
- Light-Emitting Diode (LED) indicates output relay status (On/Off).
- Remote sensing capability with interchangeable sensors.

SETUP AND INSTALLATION

Proper installation is crucial for the safe and effective operation of the A419ABC-1C controller. It is recommended that installation be performed by a qualified technician.

Wiring Instructions

The A419ABC-1C is designed for custom wiring to suit various applications. It does not come with a pre-attached power cord.

Ensure all wiring complies with local electrical codes and safety standards.

1. **Power Supply:** The unit operates on 120V or 220V. Verify your power source matches the unit's requirements.
2. **Grounding:** Always use a 3-wire cord that includes a ground wire. While the internal wiring diagram may not explicitly show a ground connection, proper grounding of your appliance (e.g., refrigerator, freezer) is essential for safety. Ensure the unit itself is bonded to ground if applicable.
3. **Output Relay:** The controller features a Single Pole, Double Throw (SPDT) output relay. This allows for both Normally Open (NO) and Normally Closed (NC) contacts, providing flexibility for heating or cooling applications.
4. **Jumper Wire:** A small jumper wire is typically required to connect the line side terminal block to the load terminal block within the unit. Refer to the detailed wiring diagram provided with your product packaging for specific connections.
5. **Sensor Connection:** Connect the temperature sensor to the designated terminals. The sensor is interchangeable and can be extended several hundred feet using ordinary #14 wire.

Safety Note: Before connecting the controller to any appliance, it is advisable to test your wiring with a low-power device, such as a shop light, to confirm correct operation and prevent damage to your primary appliance.

OPERATING INSTRUCTIONS

The A419ABC-1C features a user-friendly interface for setting and monitoring temperature.

Front Panel Controls

- **LCD Display:** Shows the current temperature and various status indicators.
- **MENU Button:** Used to access and navigate through the controller's settings.
- **Up (▲) and Down (▼) Buttons:** Used to adjust setpoints, differentials, and other parameters.
- **LED Indicator:** Illuminates when the output relay is active (e.g., when heating or cooling is engaged).

Setting Operating Mode (Heating/Cooling)

The A419ABC-1C supports both heating and cooling modes. This selection is typically made via a jumper setting on the internal circuit board. Refer to the detailed wiring diagram for the exact location and procedure for setting the desired mode.

Adjusting Setpoint and Differential

1. Press the **MENU** button to enter the settings menu.
2. Navigate through the options using the **Up (▲)** or **Down (▼)** buttons until you reach the setpoint or differential setting.
3. Press **MENU** again to select the parameter.
4. Use the **Up (▲)** or **Down (▼)** buttons to adjust the value.
5. Press **MENU** to confirm and save the setting.

The adjustable differential range of 1 to 30°F (1 to 30°C) allows for precise temperature control.

MAINTENANCE

The Johnson Controls A419ABC-1C is designed for durability and reliable performance with minimal maintenance.

- **Cleaning:** Keep the unit's exterior clean and free of dust. Use a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Sensor Care:** Ensure the temperature sensor is clean and properly positioned for accurate readings. Avoid physical damage to the sensor cable.
- **Environmental Conditions:** Operate the controller within its specified operating temperature range. Avoid exposure to excessive moisture or extreme temperatures.

- **Inspections:** Periodically inspect wiring connections to ensure they remain secure.

TROUBLESHOOTING

If you encounter issues with your A419ABC-1C controller, refer to the following common troubleshooting steps:

- **No Power/Display Off:**
 - Check the power supply to the unit.
 - Verify all wiring connections are secure and correct, especially the line side input.
- **Incorrect Temperature Reading:**
 - Ensure the temperature sensor is properly connected and not damaged.
 - Check the sensor's placement; it should be in the area where temperature control is desired.
 - Verify the temperature offset (setback) function is not inadvertently active.
- **Controller Not Activating Load (Heating/Cooling):**
 - Check the setpoint and differential settings to ensure they are appropriate for the desired operation.
 - Confirm the operating mode (heating or cooling) is correctly set via the internal jumper.
 - Verify the load wiring (to the appliance) is correct and secure.
 - Check if the anti-short cycle delay is active, which might temporarily prevent activation.
 - Observe the LED indicator; if it's on but the load isn't active, the issue might be with the load or its wiring.
- **Settings Lost After Power Outage:**
 - The A419ABC-1C is designed to retain settings even after a power loss. If settings are lost, it may indicate a fault with the unit's internal memory or a severe power fluctuation.

If problems persist after following these steps, contact Johnson Controls technical support or a qualified service technician.

SPECIFICATIONS

Attribute	Value
Model Number	A419ABC1C
Brand	Johnson Controls
Setpoint Range	-30 to 212°F (-34 to 100°C)
Differential Range	1 to 30°F (1 to 30°C)
Display Type	LCD
Material	Plastic
Color	Gray
Package Dimensions	8.9 x 6.7 x 5.7 inches
Item Weight	11.2 ounces
First Available Date	April 15, 2009

WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please contact Johnson Controls directly. Refer to the official Johnson Controls website or the documentation included with your purchase for the most current contact details and warranty terms.

Extended protection plans may be available from third-party providers. Please review the terms and conditions of any such plans carefully.

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Name

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question