A421 Series Electronic Temperature Controls

Description

The A421 Series Electronic Temperature Controls are single-stage controls with a single-pole, double-throw (SPDT) output relay.

A421 Controls feature a bright backlit LCD with adjustable brightness and a three-button touchpad interface that can be set up to restrict user adjustments. An LED indicates the output relay's On/Off status. Standard A421 Series control modules have simple On and Off temperature settings for heating or cooling, an adjustable anti-short cycle delay, temperature setback, and sensor offset capability. The temperature control range is -40 to 212°F or -40 to 100°C.

The A421 controls are available either in Type 1 (NEMA), IP20 (CE), high-impact plastic enclosures suitable for surface or DIN rail mounting or in Type 4X (NEMA), IP67 (CE) watertight, corrosion resistant surface mount enclosures.

Refer to the *A421 Series Electronic Temperature Controls Product Bulletin (LIT-12011972)* for important product application information.

Applications

The A421 Electronic Temperature Control can be used to control a wide variety of single-stage refrigeration or HVAC equipment.

Sample temperature control applications include:

- temperature monitoring and alarming
- on/off control of boilers and chillers
- boiler and chiller pump control
- heating and cooling control
- floating temperature control of damper and valve actuators
- cooling tower fan control based on water temperature
- supply, makeup, and mixed air temperature control
- temperature actuated valve control
- supply and makeup air damper and fan control
- condenser fan control based on condenser temperature

Features

- easy-to-read, bright, adjustable backlit LCD screen displays the temperature, parameters, and status clearly and allows you to adjust LCD brightness for the ambient light conditions. Custom icons on the display provide visual cues on system and control status.
- basic and advanced programming menus allow you to easily set up your control application on the LCD using a simple three-button touchpad interface.
- adjustable On and Off temperature setpoints enable easy to set up cooling or heating control applications on the three-button touchpad, eliminating the need to remove the cover and reposition jumpers for reverse or direct control actions.
- high and low temperature setpoint adjustment stops allow you to set up your application for your desired range of adjustment and restrict user adjustment to just the desired temperature adjustment range.
- displayed temperature offset allows you to adjust the displayed temperature to the actual sensed temperature in applications where the resistance error in long sensor cable leads cause a deviation in the displayed temperature from the actual sensed temperature.
- adjustable anti-short cycle delay keeps the output relay Off after the Off setpoint is reached for a user-defined time delay, which helps avoid short cycling, hard starts, and nuisance overload outages on compressors and other inductive applications.
- temperature setback/offset control enables the control to shift the On and Off setpoint values by a user-defined offset when an external switch closes the binary input control circuit. Using a switching timer enables you to set up occupied/unoccupied temperature setback schedules for your applications.
- high-impact, thermoplastic Type 1/IP20 or Type 4X (NEMA)/IP66 watertight, corrosion-resistant enclosures increase application options, allowing surface and snap-fit DIN rail mount, or watertight surface mount.

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- parameter adjustment restriction allows you to lock the control's setup parameters and restrict user adjustments to just the On and Off temperature setpoint values within your defined setpoint adjustment range.
- low- and line-voltage control models provide industry standard control voltage options for most refrigeration and HVAC control applications.

Repair Information

If the A421 Series Electronic Temperature Control fails to operate within its specifications, replace the unit. For a replacement A421 Control, contact the nearest Authorized Johnson Controls/PENN® Distributer or Sales Representative.