A421 Series Electronic Temperature Controls with Cycle Timer Catalog Page

LIT-1900936

2020-04-14

Description

The A421 Series Standard Electronic Temperature Controls are single-stage, electronic temperature controls with a single-pole, double-throw (SPDT) output relay. The controls feature an adjustable backlit LCD for viewing the temperature and status of other functions, and a three-button touchpad for setup and adjustment. An LED indicates the On/Off status of the output relay. The A421 Controls with cycle timer can be powered with either 120 VAC or 240 VAC.

The A421 Control with Cycle Timer is a free-cooling, duty-cycle ventilation control. This control provides timed-ventilation and overcooling protection.

A421 Control with Cycle Timer also provides sensor offset capability and restricted user adjustment. The temperature control range is -40°F to 212°F or -40°C to 100°C.

The A421 Controls are available in Type 1/IP20 high-impact plastic enclosures suitable forsurface or DIN rail mounting and Type 4X/IP66 watertight, corrosion-resistant surface mount enclosures.

Refer to the *A421 Series Electronic Temperature Controls Product Bulletin (LIT-12012249)* for important product application information.

The control housing base on the Type 4X/IP66 models can be easily rotated 180° relative to the control housing cover and LCD, allowing you to bring the electrical connection to either the top or bottom of the mounted control.

A421ABT, A421AET

Applications

The A421 equipped with Cycle Timer is used in agricultural and related applications where free-cooling and ventilation are needed.

Features and benefits

Control front panel LCD

Displays the temperature, parameters, and status. You can adjust the backlight brightness for ambient light conditions. Custom icons display the system and control status.

Basic and Advanced programming menu

Provides two levels of parameter adjustment and control setup. You can set up advanced features in one menu and easily adjust basic parameters in the other menu.

Free-cooling and ventilation

Adjust for free-cooling and timed-ventilation, and provides over-cooling protection.

On/Off temperature adjustment

Adjust the On/Off temperature values.

Switch-activated override

Override the control using a switch connected to the binary input. Closing the switch turns the relay on. Normal control action is resumed when the switch is opened.

Adjustable sensor offset

Adjust the displayed temperature to the actual sensed temperature.

Optional restricted adjustment mode

Restrict the On/Off adjustment to your defined temperature range.

Sensor failure mode

Run the control continuously in the event of a sensor or sensor wire failure or to shut it down.

Backlight brightness level

Adjust the brightness of the backlighting of the LCD screen. The backlight brightness level is applied during normal operation. When you set up or adjust the parameters, the LCD automatically goes to the brightest level.

Repair information

Do not attempt to repair or recalibrate the A421 Series Electronic Temperature Control. In case of a defective or improperly functioning control, contact your nearest authorized Johnson Controls® or PENN® distributor or sales representative. When contacting your Johnson Controls/PENN distributor, have the model number of the control available. This number can be found on the label inside the cover of the control.

Ordering information

Contact your nearest Johnson Controls or PENN distributor or sales representative to order sensors, mounting hardware, and other accessories used to install A421 Controls. Contact your local Johnson Controls or PENN representative for more information on options available for high-volume purchase models with specific application requirements.

Selection charts

Table 1: A421 Series Electronic Temperature Control with Cycle Timer

Product code	Description
A421ABT-02C	Line-Voltage Type 1 Electronic Temperature Control with Cycle Timer: Type 1 (NEMA), IP20 standard enclosure for DIN rail and surface-mount applications. Rated for 120/240 VAC. Includes A99 positive temperature coefficient (PTC) sensor with 6.6 ft (2.0 m) cable.
A421AET-01C	Line-Voltage Type 4X Electronic Temperature Control with Cycle Timer: Type 4X (NEMA), IP66 watertight enclosure forsurface-mount applications. Rated for 120/240 VAC. Includes an A99BB-25C temperature sensor with 9 7/8 in. (0.25 m) cable.

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Table 2: A99 Temperature Sensors

Product code[1]	Description
A99BA-200C	PTC temperature sensor: Standard probe 2 in. (5.1 cm) with 6.6 ft (2.0 m) shielded polyvinyl chloride (PVC) cable; ambient operating temperature range: -40°F to 212°F (-40°C to 100°C)
A99BB-25C	PTC temperature sensor: Standard probe 2 in. (5.1 cm) with 9 7/8 in. (0.25 m) PVC cable; ambient operating temperature range: -40°F to 212°F (-40°C to 100°C)
A99BB-200C	PTC temperature sensor: Standard probe 2 in. (5.1 cm) with 6.6 ft (2.0 m) PVC cable; ambient operating temperature range: -40°F to 212°F (-40°C to 100°C)
A99BB-300C	PTC temperature sensor: Standard probe 2 in. (5.1 cm) with 9.8 ft (3.0 m) PVC cable; ambient operating temperature range: -40°F to 212°F (-40°C to 100°C)
A99BB-400C	PTC temperature sensor: Standard probe 2 in. (5.1 cm) with 13.1 ft (4.0 m) PVC cable; ambient operating temperature range: -40°F to 212°F (-40°C to 100°C)
A99BB-600C	PTC temperature sensor: Standard probe 2 in. (5.1 cm) with 19.7 ft (6.0 m) PVC cable; ambient operating temperature range: -40°F to 212°F (-40°C to 100°C)
A99BC-25C [1]	PTC temperature sensor: Standard probe 2 in. (5.1 cm) with 9 7/8 in. (0.25 m) high-temperature silicon cable; ambient operating temperature range: -40°F to 248°F (-40°C to 100°C)
A99BC-100C[1]	PTC temperature sensor: Standard probe 2 in. (5.1 cm) with 3.3 ft (1.0 m) high-temperature silicon cable; ambient operating temperature range: -40°F to 248°F (-40°C to 120°C)
A99BC-300C[1]	PTC temperature sensor: Standard probe 2 in. (5.1 cm) with 9.8 ft (3.0 m) high-temperature silicon cable; ambient operating temperature range: -40°F to 248°F (-40°C to 120°C)
A99BC-500C[1]	PTC temperature sensor: Standard probe 2 in. (5.1 cm) with 16.4 ft (5.0 m) high-temperature silicon cable; ambient operating temperature range: -40°F to 248°F (-40°C to 120°C)

Table 2: A99 Temperature Sensors

Product code[1]	Description
A99BC-1500C[1]	PTC temperature sensor: Standard probe 2 in. (5.1 cm) with 49.2 ft (15.0 m) high-temperature silicon cable; ambient operating temperature range: -40°F to 248°F (-40°C to 120°C)
A99CB-200C	PTC temperature sensor: Extended probe 6 in. (15.2 cm) with 6.6 ft (2.0 m) PVC cable; ambient operating temperature range: -40°F to 212°F (-40°C to 100°C)
A99CB-600C	PTC temperature sensor: Extended probe 6 in. (15.2 cm) with 19.7 ft (6.0 m) PVC cable; ambient operating temperature range: -40°F to 212°F (-40°C to 100°C)

1   When any A99 Series Temperature Sensor is connected to a standard A421 Control model, the range of displayed temperature values is -40°F to 212°F or -40°C to 100°C.

Table 3: Accessories

Product code	Description
BKT287-1R	12 in. (305 mm) long DIN rail section
BKT287-2R	36 in. (914 mm) long DIN rail section
PLT344-1R	Two end clamps for DIN rail sections
A99-CLP-1	Surface mounting clip for A99B and A99C Series Temperature Sensors
SHL10-603R	Sun shield for A99B and A99C Series Temperature Sensors
BOX10A-603R	PVC enclosure for A99B and A99C Series Temperature Sensors
WEL11A-601R	Brass and copper immersion well for applying sensor in fluid applications
TE-6300W-102	Stainless steel immersion well for applying A99 sensors in fluid applications. (A99CB Type sensors with extended probe are recommended for use with this immersion well.)

Technical specifications

Table 4: A421 Series Electronic Temperature Control Technical Specifications

Specification	Description
Power consumption	1.8 VA maximum
Supply power	110/120 or 208/230/240 VAC, 50/60 Hz
Ambient conditions	Type 1/IP20: Operating: -40°F to 150°F (-40°C to 66°C), 0% to 95% RH noncondensing Shipping and storage: -40°F to 185°F (-40°C to 85°C), 0% to 95% RH noncondensing
	Type 4X/IP66: Operating: -40°F to 140°F (-40°C to 60°C) Shipping and storage: -40°F to 140°F (-40°C to 60°C)

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Table 4: A421 Series Electronic Temperature Control Technical Specifications

Specification	Description
Temperature control range	-40°F to 212°F or (-40°C to 100°C)
Sensor type	A99 PTC temperature sensor: 1,035 ohm at 77°F (25°C)
Sensor offset range	±5ºF or ±3ºC
Enclosure material	Type 1, IP20 high-impact thermoplastic or Type 4X, IP66 watertight, corrosion-resistant, high-impact thermoplastic ⓘ **Note:** To maintain type 4X / IP66 rating, tighten enclosure screws to: 10-12 in·lb
Compliance	**North America:** cULus Listed; UL 60730, File E27734; FCC Compliant to CFR47, Part 15, Subpart B, Class B Industry Canada (IC) Compliant to Canadian ICES-003, Class B limits
C E	**Europe:** CE Mark – Johnson Controls declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC Directive; Low Voltage Directive.
	Australia/NZ: RCM Emissions Compliant

The performance specifications are nominal and conform to acceptable industry standards. Johnson Controls shall not be liable for damages resulting from misapplication or misuse of its products.

Product warranty

This product is covered by a limited warranty, details of which can be found at www.johnsoncontrols.com/buildingswarranty.

Software terms

Use of the software that is in (or constitutes) this product, or access to the cloud, or hosted services applicable to this product, if any, is subject to applicable terms set forth at www.johnsoncontrols.com/techterms. Your use of this product constitutes an agreement to such terms.

Single point of contact

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