

A419 Series Electronic Temperature Controls with NEMA 1 or NEMA 4X Watertight Enclosures

Description

The A419 Series controls are single-stage, electronic temperature controls with a Single Pole, Double Throw output relay. They feature a lockable front-panel touchpad for setup and adjustment, and an LCD for viewing the temperature and status of other functions. An LED indicates the controls' output relay (On/Off) status. The A419 controls are available in 24 VAC or 120/240 VAC models.

The A419 controls have heating and cooling modes, adjustable setpoint and differential, an adjustable anti-short cycle delay, and a temperature offset (setback) function. The setpoint range is -30 to 212°F (-34 to 100°C). The controls feature remote sensing capability and interchangeable sensors. The A419 controls are available in either NEMA 1 high-impact plastic enclosure suitable for surface or DIN rail mounting, or NEMA 4X Watertight surface-mount enclosures.

Applications

The A419 can be used to control a wide variety of single-stage refrigeration or HVAC equipment. Typical applications include:

- freezer control in convenience stores
- reach-in coolers
- supermarket display cases for produce or meats
- restaurant or convenience store walk-in coolers
- boiler control
- compressor lockout (disables the compressor when temperature exceeds limits)
- condenser fan cycling
- pump control for cooling towers
- space and return air temperature

Features

- low- and line-voltage models provide options for almost any refrigeration or HVAC control-voltage application
- easy-to-read LCD displays the sensed temperature and control-function status clearly, and custom icons on the display indicate the control and system status at a glance
- 30° (F° or C°) temperature differential adjustment range allows precise (1F° or C°) temperature differential settings that are much tighter than electromechanical controls
- Adjustable Anti-Short Cycle Delay (0 to 12 Minutes in 1-Minute Increments) ensures that the output relay remains off for a user-set time delay, and helps avoid hard starts, nuisance overload outages, and unnecessary equipment wear
- Temperature Offset Function shifts the cut-in and cut-out setpoints by an adjustable offset when a user-installed, external switch closes the A419 control's binary input circuit
- high-impact thermoplastic type NEMA 1 allows surface or snap-fit DIN rail mount; LEXAN® 950 high-impact thermoplastic type NEMA 4X enclosures allow watertight surface mount
- lockable front-panel touchpad allows easy setup and adjustment of the A419 control setpoint, differential, and other functions; a concealed jumper locks the touchpad to deter unauthorized adjustment of the control settings



A419 Control and Sensor

Selection Chart

A419 Series Electronic Temperature Control with NEMA 1 or NEMA 4X Watertight Enclosure

Code Number	Item	Lead Length	Description
A419ABC-1C ¹	Line Voltage, NEMA 1 Enclosure Electronic Temperature Control with Display	6-1/2 ft (2 m)	Supply Voltage: 120 or 240 VAC Range: -30 to 212°F (-34 to 100°C) Differential: 1 to 30F° (1 to 30C°)
A419ABC-2C ¹	Line Voltage, NEMA 1 Enclosure Electronic Temperature Control with Display	9-3/4 ft (3 m)	
A419ABC-3C ¹	Line Voltage, NEMA 1 Enclosure Electronic Temperature Control with Display	13 ft (4 m)	
A419ABC-4C ¹	Line Voltage, NEMA 1 Enclosure Electronic Temperature Control with Display	19-1/2 ft (5 m)	
A419AEC-1C ¹	Line Voltage, NEMA 4X Enclosure Electronic Temperature Control with Display	9-3/4 in. (0.25 m)	
A419AEC-2C ¹	Line Voltage, NEMA 4X Enclosure Electronic Temperature Control with Display	6-1/2 ft (2 m)	Supply Voltage: 24 VAC, Class 2 Range: -30 to 212°F (-34 to 100°C) Differential: 1 to 30F° (1 to 30C°)
A419GBF-1C ¹	24 VAC, NEMA 1 Enclosure Electronic Temperature Control with Display	6-1/2 ft (2 m)	
A419GEF-1C ¹	24 VAC, NEMA 4X Enclosure Electronic Temperature Control with Display	9-3/4 in. (0.25 m)	

1. A99 Sensor included with all models

A419 Series Electronic Temperature Controls with NEMA 1 or NEMA 4X Watertight Enclosures (Continued)

Accessories and Replacement Parts

Code Number	Item	Description
A99BB-200C	Replacement Temperature Sensors ¹	PTC Sensor with 6-1/2 ft (2 m) Leads
A99BA-200C		PTC Sensor with 6-1/2 ft (2 m) Shielded Leads
A99BB-25C		PTC Sensor with 9 in (0.25 m)
BKT287-1R	Accessory Mounting Hardware	12 in. (305 mm) long DIN Rail
BKT287-2R		36 in. (914 mm) long DIN Rail
PLT344-1R		Two End Clamps for DIN Rail Mounting
CLK350-2	Digital Clock	7-Day Programmable Digital Clock for controlling Temperature Offset Function
WEL11A-601R	Immersion Well	Immersion Well for applying sensor in fluid applications

1. For other available sensors, refer to the [A99B Series Temperature Sensor Catalog Page \(LIT-1900006\)](#).

Technical Specifications and Electrical Ratings

A419 Series Electronic Temperature Controls with NEMA 1 General Purpose or NEMA 4X Watertight, Corrosion-Resistant Enclosures				
Setpoint Range		-30 to 212°F (-34 to 100°C)		
Differential Range		1 to 30F° (1 to 30C°)		
Supply Voltage	24 VAC, 60 Hz, Class 2	A419GBF (NEMA 1 Enclosure Model) A419GEF (NEMA 4X Watertight Enclosure Model)		
	120 or 240 VAC, 60 Hz	A419ABC (NEMA 1 Enclosure Model) A419AEC (NEMA 4X Watertight Enclosure Model)		
Power Consumption		1.8 VA Maximum		
Output Relay Contacts Electrical Ratings	24 VAC models	A419GBF (NEMA 1 Enclosure) A419GEF (NEMA 4X Watertight Enclosure) 100 VA, 30 VAC maximum, Class 2		
	120/240 VAC models	A419ABC (NEMA 1 Enclosure) A419AEC (NEMA 4X Watertight Enclosure)		
	Applied Voltage	120 VAC	208 VAC	240 VAC
	Horsepower N.O. (N.C.)	1 (0.25) hp	1 (0.33) hp	1 (0.5) hp
	Full Load Amperes N.O. (N.C.)	16 (5.8) A	9.2 (4.0) A	8.0 (4.9) A
	Locked Rotor Amperes N.O. (N.C.)	96 (34.8) A	55.2 (24) A	48 (29.4) A
	Non-inductive Amperes N.O. (N.C.)	15 (10) A	10 (10) A	10 (10) A
	Pilot Duty	125 VA (N.O. contacts) at 24 to 240 VAC 125 VA (N.C. contacts) at 120 to 240 VAC 50 VA (N.C. contacts) at 24 VAC		
Sensor Type		A99BB Type PTC Sensor		
Control Ambient Temperature	Operating	-26 to 140°F (-32 to 60°C)		
	Shipping	-40 to 185°F (-40 to 85°C)		
Ambient Humidity		0 to 95% RH Noncondensing; Maximum Dew Point: 85°F (29°C)		
Control Material	Case and Cover	NEMA 1 High-impact Thermoplastic		
		NEMA 4X Watertight Corrosion-Resistant, High-Impact Thermoplastic Polycarbonate		
Agency Listings		UL: File E27734; CCN's XAPX (US), XAPX7 (Canada) FCC: CFR 47, Part 15, Class A. DOC, Class A		