

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 a Liquid Crystal Display (LCD) for viewing the temperature and status of other functions. A Light-Emitting Diode 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)
- condensor 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; Noryl® high-impact thermoplastic type NEMA 4X enclosures allow watertight surface mount
- lockable front-panel touchpad allows easy set up 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 (2m)	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 (3m)	
A419ABC-3C ¹	Line Voltage, NEMA 1 Enclosure Electronic Temperature Control with Display	13 ft (4m)	
A419ABC-4C ¹	Line Voltage, NEMA 1 Enclosure Electronic Temperature Control with Display	19-1/2 ft (5m)	
A419AEC-1C ¹	Line Voltage, NEMA 4X Enclosure Electronic Temperature Control with Display	9-3/4 in. (0.25m)	
A419AEC-2C ¹	Line Voltage, NEMA 4X Enclosure Electronic Temperature Control with Display	6-1/2 ft (2m)	
A419GBF-1C ¹	24 VAC, NEMA 1 Enclosure Electronic Temperature Control with Display	6-1/2 ft (2m)	
A419GEF-1C ¹	24 VAC, NEMA 4X Enclosure Electronic Temperature Control with Display	9-3/4 in. (0.25m)	

1. A99 Sensor included with all models



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

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, see *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	120VAC	208VAC	240VAC
	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) @ 24 to 240 VAC 125 VA (N.C. contacts) @ 120 to 240 VAC 50 VA (N.C. contacts) @ 24 VAC			
Sensor Type		A99BB Type PTC Sensor (See attached Selection Chart)		
Control Ambient Temperature	Operating	-30 to 140°F (-34 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 Noryl® Thermoplastic		
Agency Listings		UL: File E27734; CCN's XAPX (US), XAPX7 (Canada) FCC: CFR 47, Part 15, Class A. DOC, Class A		