JOHNSON CONTROLS

Controls Group 507 E. Michigan Street
P.O. Box 423, Milwaukee, WI 53202
Code No. LIT-1927385

A419 Series

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

A419 Control and Sensor

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 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.

Features

- 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
- the 30° (F° or C°) temperature differential adjustment range allows precise (1F° or C°) temperature differential settings that are much tighter than electromechanical controls
- the 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
- the Temperature Offset Function shifts the cut-in and cut-in setpoints by an adjustable offset when a user-installed, external switch closes the A419 control's binary input circuit
- the high-impact thermoplastic type NEMA 1 allows surface or snap-fit DIN rail mount; the 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, and deters unauthorized adjustment of the control settings
- low- and line-voltage models provides options for almost any refrigeration or HVAC control-voltage application

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

To Order

Specify the code number from the following selection chart.

Selection Chart

Code Number	Item	Description
A419ABC-1C	**Line Voltage, NEMA 1 Enclosure** A419 Series Electronic Temperature Control with Display, A99 Sensor Included	Supply Voltage: 120 or 240 VAC Range: -30 to 212°F (-34 to 100°C) Differential: 1 to 30F° (1 to 30C°)
A419AEC-1C	**Line Voltage, NEMA 4X Enclosure** A419 Series Electronic Temperature Control with Display, A99 Sensor Included	
A419GBF-1C	**24 VAC, NEMA 1 Enclosure** A419 Series Electronic Temperature Control with Display, A99 Sensor Included	Supply Voltage: 24 VAC, Class 2 Range: -30 to 212°F (-34 to 100°C) Differential: 1 to 30F° (1 to 30C°)
A419GEF-1C	**24 VAC, NEMA 4X Enclosure** A419 Series Electronic Temperature Control with Display, A99 Sensor Included	
Accessories		
A99BB-200C	Replacement Temperature Sensors	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
CLK350-2C	Digital Clock	7-Day Programmable Digital Clock for controlling Temperature Offset Function
WEL11A-601R	Immersion Well	Immersion Well for applying sensor in fluid applications

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

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-1 (NEMA 1 Enclosure Model) A419GEF-1 (NEMA 4X Watertight Enclosure Model)
	120 or 240 VAC, 60 Hz:	A419ABC-1 (NEMA 1 Enclosure Model) A419AEC-1 (NEMA 4X Watertight Enclosure Model)
Power Consumption		1.8 VA Maximum
Output Relay Contacts Electrical Ratings	**24 VAC models:**	A419GBF-1 (NEMA 1 Enclosure) A419GEF-1 (NEMA 4X Watertight Enclosure) 100 VA, 30 VAC maximum, Class 2
	120/240 VAC models:	A419ABC-1 (NEMA 1 Enclosure) A419AEC-1 (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