

# Electronic Temperature Control

# Universal

## 16E09-101

- Refrigeration or Heating Applications
- Alarm Output with Selectable Delay  
*Prevents false alarms*
- No Common Wire Required\*  
*Saves 30-60 minutes installation time when upgrading a mechanical control*

\*Electrical load must be greater than 2.5 amps and uninterrupted



Save  
30-60 Minutes  
Installation  
Time

Multiple Input Voltage  
(24/120/208/240 Volts AC)



## Superior Temperature Control and Accuracy for Both Refrigeration and Heating Applications...and It's Universal, Too!

- 16E09-101 replaces most mechanical and electronic single stage controls using an SPDT output relay
- Offers the widest multiple voltage operating range: 24/120/208/240 VAC for truly universal replacement
- Does not require a common wire when electrical load is greater than 2.5 amps – saving 30 to 60 minutes installation time when upgrading a mechanical control
- Offers a wider than industry standard setpoint temperature range (-40°F to 220°F) and adjustable differential settings
- Reduces inventory – 16E09-101 replaces most competitive mechanical and electronic refrigeration controls

### Features

Multiple Input Voltages  
(24/120/208/240 Volts)

No Common Wire Required (Electrical load must be greater than 2.5 amps and uninterrupted)

Optional Multiple Sensor (4) Averaging

Electronic Temperature Accuracy

Alarm Output (with selectable delay – up to 99 minutes)

Adjustable Anti-Short Cycle Delay

Setpoint Locking Function

### Applications

Convenience Store Freezer Control

Reach-In Coolers

Supermarket Display Cases (meat/produce)

Boiler Control

Restaurant/Convenience Store Walk-In Coolers

Condenser Fan Cycling

Pump Control

Space and Return-Air Temperature

### Includes

NTC Sensor with 7.5-Ft. Leads

Cross-Reference Replacement Guide

# 16E09-101

## Universal Replacement Electronic Refrigeration or Heating Control

- Alarm Output with Selectable Delay Prevents false alarms
- No Common Wire Required (Electrical load must be greater than 2.5 amps and uninterrupted) Saves 30-60 minutes installation time when upgrading a mechanical control

### Specifications

Setpoint Range:  
-40° to 220°F (-40° to 104°C)  
Differential Range: 1° to 30°F (1° to 30°C)  
Supply Voltage:  
24/120/208/240 VAC, 60Hz  
Sensor: Negative Temperature Coefficient with 7.5-Ft. Leads (Maximum length for remote temperature sensing – 400 feet)  
Control Enclosure Ambient Temperatures  
Operating: -29° to 140°F (-34° to 60°C)  
Storage: -40° to 185°F (-40° to 85°C)

Control Material  
Cover and Case: NEMA 1 high-impact plastic Thermoplastic: Non-flammable UL94V0  
Switch Action: SPDT  
Ambient Humidity: 0 to 95% RH, non-condensing

### Dimensions

6 3/4" L x 3" W x 2 9/16" D

### 16E09-101 Optional Accessories/Service Items

Immersion Well: F89-0286  
Replacement 7.5-Ft. NTC Remote Sensor: F136-0114  
Well Heat Transfer Compound: F145-0650

### For Additional Information

Visit [www.white-rodgers.com](http://www.white-rodgers.com)

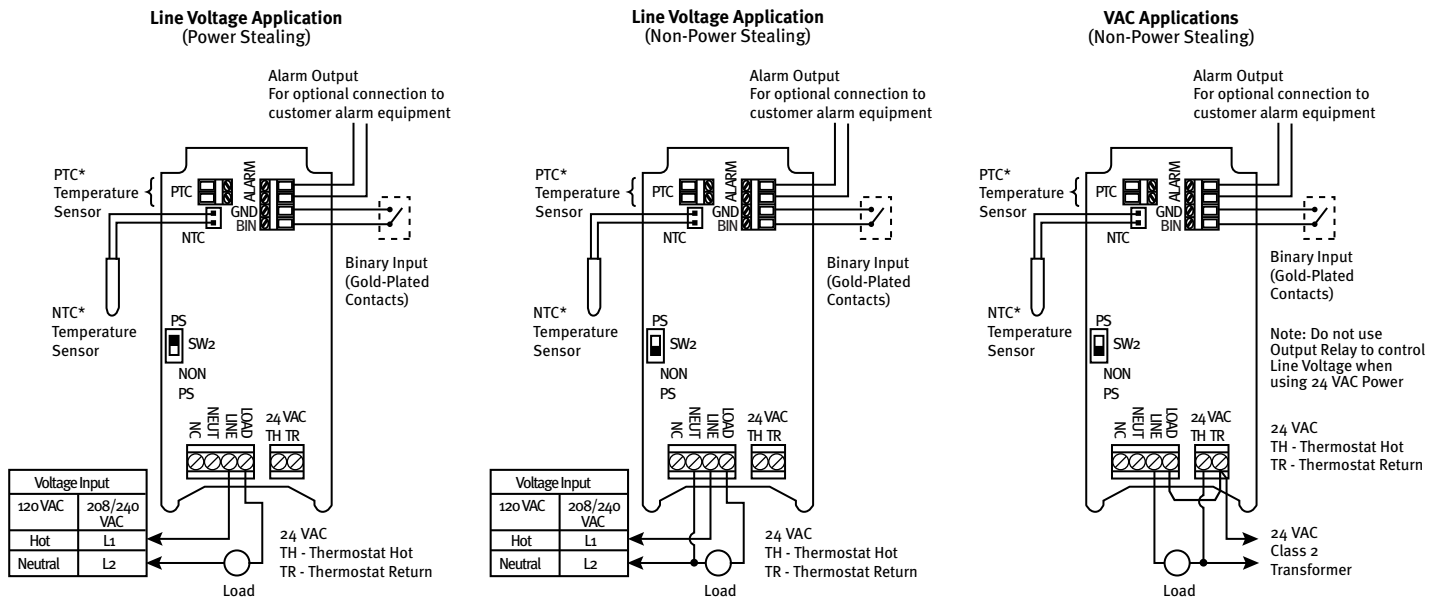
### Load Relay Electrical Ratings N.C. and Load Contacts (Maximum Load Current)

Applied voltage:	120 VAC	208 VAC	240 VAC
Full load amps:	16 Amps	9.2 Amps	8 Amps
Locked rotor amps:	96 Amps	55.2 Amps	48 Amps
Non-inductive amps:	16 Amps	16 Amps	16 Amps
Horsepower:	1 hp	1 hp	1 hp
24 VAC:	100 VA, 30 VAC Max. (Class 2)		
Pilot duty:	125 VA, 24 to 240 VAC		
Minimum load:	1 Amp @ 24 VAC		

### Alarm Relay Electrical Ratings

N.O. contacts:	1 Amp (5 to 24 volts AC or DC)
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### Typical Wiring



\*Note: Alarm connection contacts close when sensor fails or temperature range is exceeded.

NTC - Negative Temperature Coefficient  
PTC - Positive Temperature Coefficient

Note: Sensor type (PTC or NTC) must meet temperature specifications. If averaging, 4 sensors of the same type must be used.

### 16E09-101\* Replaces the Following Models

<b>Danfoss</b> UT72	T6054A1054 T675A1045	T675A1524 T675A1540	T678C1005 T7079A1004	<b>Ranco ETC Commercial Temperature Controls</b> 060-100† 060-101† 060-109† 060-200† ETC-111000 ETC-112000	<b>Johnson Controls</b> A19ABA-40C† A19ABC-24C† A19BAB-3C† A19BAC-1C† A19BAF-1C A19BBC-2C† A319ABC-12-01	A319ABC-24-01 A320ABC-1C A419ABC-1C	<b>White-Rodgers</b> 1687-9† 1609-33† 1609-100† 1609-101† 1609-102† 1609-103† 1609-104† 1609-105†	1687-9† 201-8† 201-20† 230-22† 241-2† 2A37-1†
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\*16E09-101 is not rated as a limit control

†16E09-101 is a replacement on non-inductive applications up to 16 amps