Models TEC-4500 & TEC-9500

Model TEC-4500 1/4 DIN & Model TEC-9500 1/16 DIN Ramp & Soak Temperature Controls

Configurable for 5 Programmable Outputs

Configurable for 4 Programmable Outputs

Design Features

- *Ramp & Soak Programmable Control*
- *Nine recipes (profiles) available using 64 segments maximum per recipe*
- *Event Input – one of 8 functions can be chosen: start run mode, hold mode, abort recipe, manual mode, failure transfer, turn off, segment advance, select 2nd set of PID parameters*
- *Event Output – 3 relays are available. Can be programmed to any segment or end of recipe*
- *Analog Retransmission – optional mA or VDC transfer of PV or SV values*
- *Highly accurate universal input with 18 bit analog to digital converter*
- *Bright 0.40" (10mm) red LED process display*
- *Fast sample rate – 200ms*
- *Fuzzy logic autotune PID – 2 sets of values can be used*
- *Optional RS-485 or RS-232 communications interface*
- *Programming port available for PC connection allowing quick set-up*
- *Lockout protection guards against unauthorized setting changes*
- *Bumpless transfer allows continued temperature control if sensor fails*
- *Universal input power – 90-250 VAC or 11-26 VAC/VDC*
- *Short panel depth required*

Agency Approvals

Hardware Code: TEC-4500-

1	2	3	4	5	6	7	8

Hardware Code: TEC-9500-

1	2	3	4	5	6	7	8
					0		

A Part Number based on the hardware code and any software pre-programming will be issued at time of order.

Standard lead time is stock to 2 weeks.

Power Input *BOX 1*

4 = 90-250 VAC, 50-60 Hz
5 = 11-26 VAC / VDC

Signal Input — Universal, can be programmed in the field *BOX 2*

1 = Universal input (factory default = TC type J)
Thermocouple: J, K, T, E, B, R, S, N, L, C, P
RTD: PT100 DIN, PT100 JIS (0 to 60mV)
5 = Voltage: 0-10V, 0-5V, 1-5V, 0-1V
6 = DC Current: 0-20 mA (default), 4-20 mA
9 = Other

Output 1 *BOX 3*

1 = Relay: 2A / 240 VAC
2 = Pulse DC for SSR drive: 5 VDC (30 mA max)
3 = Isolated 4-20mA / 0-20 mA
4 = Isolated 1-5V / 0-5V/0-10VDC
6 = Triac-SSR output 1A / 240 VAC
C = Pulse DC for SSR drive: 14 VDC (40 mA max)
9 = Other

Output 2 *BOX 4*

0 = None
1 = Relay: 2A / 240 VAC
2 = Pulse DC for SSR drive — 5 VDC (30 mA max)
3 = Isolated 4-20mA / 0-20 mA
4 = Isolated 1-5V / 0-5V/0-10V
6 = Triac-SSR output 1A / 240 VAC
7 = Isolated 20V @ 25 mA DC, Output Power Supply
8 = Isolated 12V @ 40 mA DC, Output Power Supply
A = Isolated 5V @ 80 mA DC, Output Power Supply
C = Pulsed voltage to drive SSR, 14V/40mA
9 = Other

Output 3 *BOX 5*

0 = None
1 = Relay: 2A / 240 VAC
2 = Pulse DC for SSR drive — 5 VDC (30 mA max)
6 = Triac-SSR output 1A / 240 VAC
7 = Isolated 20V @ 25 mA DC, Output Power Supply
8 = Isolated 12V @ 40 mA DC, Output Power Supply
A = Isolated 5V @ 80 mA DC, Output Power Supply
C = Pulsed voltage to drive SSR, 14V/40mA
9 = Other

Output 4 *BOX 6 (TEC-4500 only)*

0 = None
1 = Relay: 2A / 240 VAC
2 = Pulse DC for SSR drive — 5 VDC (30 mA max)
3 = Retransmission 4-20mA (default), 0-20 mA
4 = Retransmission 1-5 VDC (default)/ 0-5VDC, 0-10 VDC
6 = Triac-SSR output 1A / 240 VAC
7 = Isolated 20V @ 25 mA DC, Output Power Supply
8 = Isolated 12V @ 40 mA DC, Output Power Supply
A = Isolated 5V @ 80 mA DC, Output Power Supply
C = Pulsed voltage to drive SSR, 14V/40mA
9 = Other

Note: **Detailed information on features common to digital microprocessor-based TEC temperature controls and the complete Table of Input Range and Accuracy can be found on page 13-46.**

View Product Inventory @ www.tempco.com

Output 5 *BOX 7*

0 = None
3 = Retransmission 4-20mA / 0-20 mA
4 = Retransmission 1-5V / 0-5V/0-10V
7 = Isolated 20V @ 25 mA DC, Output Power Supply
8 = Isolated 12V @ 40 mA DC, Output Power Supply
A = Isolated 5V @ 80 mA DC, Output Power Supply
D = Isolated RS-485 interface
E = Isolated RS-232 interface

Power Input

Standard: 90-250 VAC, 47-63 Hz, 12 VA, 5W maximum
Optional: 11-26 VAC / VDC, 12 VA, 5W maximum

Signal Input

Resolution: 18 bits **Sampling Rate**: 5 samples / second

Accuracy: ±.24% of span typical

Maximum Rating: -2 VDC minimum, 12 VDC maximum (1 minute for mA input)

Temperature Effect: ±1.5 μV / °C for all inputs except mA input ±3.0 μV / °C for mA input

Sensor Lead Resistance Effect: T/C: 0.2μV/ohm
3-wire RTD: 2.6°C/ohm of resistance difference of two leads

Burn-out Current: 200nA

Common Mode Rejection Ratio (CMRR): 120 dB

Normal Mode Rejection Ratio (NMRR): 55 dB

Sensor Break Detection: Sensor open for TC, RTD and mV inputs; sensor short for RTD input; below 1 mA for 4-20 mA input; below 0.25V for 1-5V input; unavailable for other inputs

Sensor Break Response Time: Within 4 seconds for TC, RTD and mV inputs; 0.1 second for 4-20 mA and 1-5 V inputs

Case Options *BOX 8*

0 = Panel mount standard
1 = Panel mount with NEMA 4X/IP65 front panel
2 = DIN rail mount adapter (TEC-9500 only)

Recipe

Number of recipes: 9

Number of Segments per recipe:
Recipe 1, 2, 3, 4: 16
Recipe 5, 6, 7: 32
Recipe 8, 9: 64

Event Outputs: 3

Environmental and Physical

Operating Temperature: 14 to 122°F (-10 to 50°C)

Storage Temperature: -40 to 140°F (-40 to 60°C)

Humidity: 0 to 90% RH, non-condensing

Dielectric Strength: 2000 VAC, 50/60 Hz for 1 minute

Dimensions:

TEC-4500: 3-3/4 × 3-3/4 × 2-9/16" (96 × 96 × 65 mm) H×W×D
Depth behind panel: 2" (53 mm)
Panel Cutout: 3-5/8" × 3-5/8" (92 × 92 mm) H×W
Weight: .55 lb. (250 grams)

TEC-9500: 1-7/8 × 1-7/8 × 4-9/16" (48 × 48 × 116 mm) H×W×D
Depth behind panel: 4-1/8" (104.8 mm)
Panel Cutout: 1-25/32" × 1-25/32" (45 × 45 mm) H×W
Weight: .33 lb. (150 grams)

Approval Standards

Safety: UL61010C-1
CSA: C22.2 No. 24-93
EN61010-1 (IEC1010-1)

Protective Class: IP30 front panel, indoor use, IP65 front panel with option

EMC: EN61326

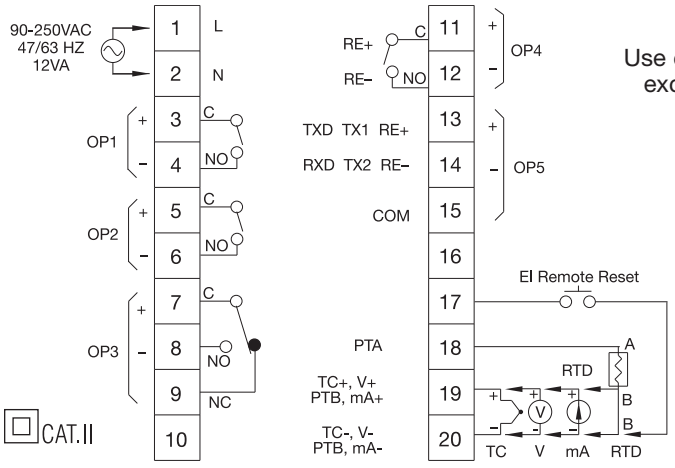
TEC-4500 Stock and Common Part Numbers
(Power Input: 90-250 VAC)

Part Number	Signal Input	Out 1	Out 2	Out 3
TEC58001	TC	relay	none	relay
TEC58002	TC	relay	relay	none
TEC58003	TC	relay	relay	relay
TEC58004	TC	4-20 mA	none	none
TEC58005	TC	4-20 mA	none	relay
TEC58006	TC	5VDC pulse	none	none
TEC58007	TC	5VDC pulse	none	relay

TEC-9500 Stock and Common Part Numbers
(Power Input: 90-250 VAC)

Part Number	Signal Input	Out 1	Out 2	Out 3
TEC18001	TC	relay	none	none
TEC18002	TC	relay	relay	none
TEC18003	TC	4-20 mA	none	none
TEC18004	TC	4-20 mA	relay	none
TEC18005	TC	5VDC pulse	none	none
TEC18006	TC	5VDC pulse	relay	none

TEC-4500 1/4 DIN Rear Terminal Connections



Use copper conductors, except on T/C input.

TEC-9500 1/16 DIN Rear Terminal Connections