

# 1/8 DIN 4-and 7-Zone Process Controllers

CN1504  
Starts at  
**\$497**  
4-Zone



CN1504-TC, \$497, shown slightly larger than actual size.

Panel punches available, visit [omega.com/panelpunches](http://omega.com/panelpunches)



OMEGACARE<sup>SM</sup> extended warranty program is available for models shown on this page. Ask your sales representative for full details when placing an order. OMEGACARE<sup>SM</sup> covers parts, labor and equivalent loaners.

- ✓ 1/8 DIN Cutout
- ✓ On/Off and Full PID Controls
- ✓ Wide Range of Input Signals: Thermocouples, RTD's, Thermistors, 4 to 20 mA, 0 to 10 Vdc, Millivolts
- ✓ Input Type Selectable from Front Keys
- ✓ Scaling for Voltage, Current and Millivolt Signals
- ✓ Independent 7-Segment Ramp/Soak Profile for Each Zone
- ✓ 3 Display Modes: Setpoint Only, Process Only or Both Process and Setpoint
- ✓ Programmable Heating or Cooling Outputs
- ✓ Setpoint Deviation Display
- ✓ Captures Min/Max Readings for Each Zone

displayed in engineering units. Temperature can be displayed in Centigrade or Fahrenheit. Additionally, each zone has its own ramp/soak profile with up to 7 segments. On/off, as well as PID control, is offered for optimum process stability. Processes that do not require tight control through complex tuning of PID parameters can be run under simple on/off control. Each zone has its own set of on/off and PID parameters and each zone can be programmed for heating or cooling. Setpoint deviation, positive as well as negative, can be viewed. Additional functions include min/max reading for each zone, indefinite program hold, automatic scanning and displaying of different zones and three display modes (setpoint only, process only or both setpoint and process). Power, control, and process signal connections are conveniently made with Euro-style plug-in connectors.

Each zone has a 3-digit long engineering label that can be programmed to indicate the type of process being controlled, e.g., °C or °F for temperature, PSI for pressure, etc. Every controller's run status is indicated by LED's. Channel-to-channel scan time is also programmable.

The CN1500 Series is a compact unit that offers the features of up to 7 controllers in a single 1/8 DIN enclosure. Careful design, high-functionality and compactness allow it to offer the best cost/performance ratio of any controller in its class. The input type for each zone is selected independently. Scaling and offset allow current and voltage signals to be converted and

## Specifications

**Input Types:** J, K, T, E, R, S, B, thermistor, RTD, 4 to 20 mA loop current, 0 to 10 Vdc, and 0 to 100 mV  
**CJC Error:** ±0.5°C (10 to 45°C)/ ±0.9°F (50 to 113°F)  
**Open Thermocouple Indication:** "HELP" displayed  
**Accuracy:**  
**Temperature Resolution:** 1°C/1°F  
**Voltage:** 0.05% FS  
**Current:** 0.05% FS  
**Resolution:**  
**Thermocouple and RTD:** 1°C/°F  
**Thermistor:** 0.1°C/°F

KQSS-18G-12, quick disconnect thermocouple probes, \$23. See page A-60.



DPS3104-C companion scanners, \$468, also available. See page M-64.

**Display:** Red 7-segment LED display, 10 mm (0.39")

**Display Test:** "8.8.8.8.8.8." on power-up

**Scan Rate:** 2 channels/s (non-adjustable)  
**Channel Display Time:** Programmable, 1 to 999 seconds

**Power Option:** 120 Vac 50/60 Hz, ±10%, (optional) 220 Vac 50/60 Hz, 12 Vdc @ 900 mA, ±20%

**Scale:** Programmable, 1 to 30,000  
**Offset:**

- Current:** 0 to 20.00
- Voltage Input:** 0 to 10.000
- Millivolt:** 0 to 100.00

**Decimal Point:** Programmable, none, 10th, 100th, 1000th

**Rate:** (PID) 0 to 500 seconds

**Proportional Band:** 0 to 100% of span

**Reset:** 0.00 to 50.00 repeats/minute

**On/Off Deadband:** Programmable, 0 to FS

**Control Output:**  
 5 Vdc drive @ 50 mA open collector

**Bezel Dimensions:**  
 65 H x 117 W x 178 D mm (2.5 x 4.6 x 7")

**Panel Cutout:**  
 45 x 92 mm (1.77 x 3.66"); ½ DIN

**Weight:** 992 g (2 lb 3 oz)

**Ramp and Soak:** 7-segment programmable for each channel



### Input Types and Ranges

Thermocouple	Maximum Range	Accuracy (% of reading)
<b>J</b> Iron-Constantan	-200 to 1190°C -328 to 2174°F	±1°C ±1 count ±2°F ±1 count
<b>K</b> CHROME <sup>®</sup> GA-ALOME <sup>®</sup> GA	-170 to 1365°C -274 to 2489°F	±1°C ±1 count ±2°F ±1 count
<b>T</b> Copper-Constantan	-155 to 400°C -247 to 752°F	±1°C ±1 count ±2°F ±1 count
<b>E</b> CHROME <sup>®</sup> GA-Constantan	-185 to 915°C -300 to 1675°F	±1°C ±1 count ±2°F ±1 count
<b>R</b> Pt-13%Rh/Pt	0 to 1600°C 32 to 2900°F	±3°C ±1 count ±6°F ±1 count
<b>S</b> Pt-10%Rh/Pt	0 to 1600°C 32 to 2900°F	±3°C ±1 count ±6°F ±1 count
<b>B</b> Pt-30%Rh/Pt-6%Rh	470 to 1800°C 900 to 3300°F	±3°C ±1 count ±6°F ±1 count

RTD	Maximum Range	Accuracy (% of reading)
RTD 0.00385 (2-wire)	-200 to 800°C -328 to 1472°C	±1°C ±1 count ±2°F ±1 count
RTD 0.00392 (2-wire)	-100 to 450°C -148 to 842°F	±1°C ±1 count ±2°F ±1 count

Thermistor	Scaling Range	Accuracy (% of reading)
400 Series 2252 Ω @ 25°C	-8.0 to 100.0°C 17.2 to 212.0°F	±0.5°C ±1 count ±1.0°F ±1 count

Linear Input	Scaling Range	Accuracy (% of reading)
Current (4 to 20 mA)	1 to 30000	0.05% ±1 count
Millivolt (0 to 100 mV)	1 to 30000	0.05% ±1 count
Voltage (0 to 10 V)	1 to 30000	0.05% ±1 count

Input Code	Programmable Inputs
<b>TC</b>	J, K, T, E thermocouples, 4 to 20 mA, 0 to 10 Vdc
<b>RTD</b>	100 Ω RTD, 4 to 20 mA, 0 to 10 Vdc
<b>TH</b>	Thermistor (400 Series), 4 to 20 mA, 0 to 10 Vdc
<b>R</b>	R thermocouple, 4 to 20 mA, 0 to 10 Vdc
<b>S</b>	S thermocouple, 4 to 20 mA, 0 to 10 Vdc
<b>B</b>	B thermocouple, 4 to 20 mA, 0 to 10 Vdc
<b>MV</b>	100 mV, 4 to 20 mA, 0 to 10 Vdc

**AVAILABLE FOR FAST DELIVERY!**

To Order (Specify Model Number)		
Model Number	Price	Description
<b>CN1504(*)</b>	<b>\$497</b>	4-zone controller
<b>CN1507(*)</b>	<b>767</b>	7-zone controller

Comes complete with operator's manual.  
 \* Add input code from table above.

**Ordering Example:** CN1507TC-2, 7-zone controller for thermocouple input, with low-voltage power, \$767 + 27 = \$794. OCW-3, OMEGACARE<sup>SM</sup> extends standard 2-year warranty to a total of 5 years (\$199), \$794 + 199 = \$993.

### Power Options

Ordering Suffix	Price	Description
<b>-1</b>	<b>NC</b>	240 Vac power
<b>-2</b>	<b>\$27</b>	12 Vdc power

### Accessories

Model No.	Price	Description
<b>DPP-5</b>	<b>\$525</b>	½ DIN panel punch
<b>GE-2539</b>	<b>85</b>	Reference Book: Multisensor Instrumentation Design



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