



# Wall-Mount, Multi-Zone Ramp and Soak Process Controllers

## CN1500 Series



- ✓ Large, 7-Segment, 7-Digit LED Display 20 mm (0.8") High
- ✓ 4- and 7-Zone Controller
- ✓ On/Off, PID, Heat/Cool
- ✓ 7-Segment Ramp and Soak Profile
- ✓ Independent Profile for Each Zone
- ✓ Separate Control Settings for Each Zone
- ✓ Manual Setpoint Entry for Each Zone
- ✓ Indefinite Hold During Ramp
- ✓ Thermocouples, RTDs, and Thermistors
- ✓ 4 to 20 mA, 0 to 10 Vdc, Millivolts
- ✓ Scaling for Millivolts, Voltage, and Current
- ✓ Easy to View from a Distance
- ✓ Better Visibility Than Typical Panel-Mount Units
- ✓ Protection from Dust and Moisture
- ✓ Sealed Enclosure with Clear Plastic Front—DIN IP65 Protection

Housed in a wall-mount, watertight plastic enclosure, the CN1514 and CN1517 Series are versatile, multi-zone controllers. They feature multiple control modes that are ideal for a full range of applications, from simple to complex processes.

Input type for each zone is selected independently. Scaling and offset allow current and voltage signals to be converted and displayed in engineering units. Temperature from thermocouples, RTDs, and thermistors can be displayed in °C/°F. In addition, each zone has its own ramp/soak profile, with up to 7 segments.



On/off, as well as PID control, is offered for optimal 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 3 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 LEDs. Channel display time is also programmable.



*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.*

## Specifications

### Input Types:

- J, K, T, E, R, S, B, thermistor (2252 Ω @ 25°C), Pt100 RTD
- 4 to 20 mA loop current
- Voltage—0 to 5 Vdc, 0 to 10 Vdc
- Millivolt—0 to 100 mV

**CJC Error:** ±0.5°C (0.9°F)  
[10 to 45°C (50 to 112°F)]

**Open Thermocouple Indication:**  
“HELP” displayed

### ACCURACY

**Voltage:** 0.05% FS  
**Current:** 0.05% FS

### Resolution:

1°C/°F for T/Cs, RTDs;  
0.1°C/0.2°F for thermistors

**Process:** 9999, 999.9, 99.99, 9.999

### A/D Conversion:

20,000 count A/D converter

**Conversion Rate:** 7/sec (typical)

**Display:** Red 7-segment, 7-digit LED display, 20 mm (0.8") high

### Display Test:

8.8.8.8.8.8 on power-up

**Scan Rate:** 2 channels per second

### Channel Display Time:

Programmable from 1 to 999 seconds

### Power Options:

- 120 Vac—60 Hz (standard)
- 220 Vac—50/60 Hz (optional)
- 15 Vdc @ 900 mA (optional)

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

### Offset:

- 0 to 20.00 (current)
- 0 to 100.00 (millivolt)
- 0 to 10.00 (voltage input)

**Rate:** 0 to 500 seconds

### Proportional Band:

0 to 100% of span

**Reset:** 0 to 50 repeats per minute

### On/Off Deadband (Programmable):

0 to FS

### Control Output:

5 Vdc drive @ 50 mA per zone

### Dimensions/Enclosure

**Case:** 192 W x 160 H x 103 mm D  
(7.55 x 6.29 x 4.05")

**Weight:** 1.4 kg (3 lb)

**Material:** Polystyrene with crystal-clear polycarbonate lid

### Ingress Protection:

Up to IP65 (DIN standard)

Type	Range	Accuracy
J	-200 to 1190°C (-328 to 2174°F)	±1°C ±1 count ±2°F ±1 count
K	-170 to 1365°C (-274 to 2489°F)	±1°C ±1 count ±2°F ±1 count
T	-155 to 400°C (-247 to 752°F)	±1°C ±1 count ±2°F ±1 count
E	-185 to 915°C (-300 to 1675°F)	±1°C ±1 count ±2°F ±1 count
R	0 to 1600°C (32 to 2900°F)	±3°C ±1 count ±6°F ±1 count
S	0 to 1600°C (32 to 2900°F)	±3°C ±1 count ±6°F ±1 count
B	470 to 1800°C (900 to 3300°F)	±3°C ±1 count ±6°F ±1 count
RTD-385 (2-Wire)	-200 to 800°C (-328 to 1472°F)	±1°C ±1 count ±2°F ±1 count
RTD-392 (2-Wire)	-100 to 450°C (-148 to 842°F)	±1°C ±1 count ±2°F ±1 count
Thermistor	-8 to 100°C (17 to 212°F)	±0.5°C ±1 count ±1.0°F ±1 count
Current	1 to 30,000 counts	0.05% ±1 count
Millivolt	1 to 30,000 counts	0.05% ±1 count
Voltage	1 to 30,000 counts	0.05% ±1 count

## To Order

Model No.	Description
CN1514-(*)	Wall-mount 4-zone controller
CN1517-(*)	Wall-mount 7-zone controller

*Note:* Select input code from table below.

Input Code*	Programmable Inputs
TC	J, K, T, E, thermocouple, 4 to 20 mA, 0 to 10 Vdc
RTD	100 Ω RTD, 4 to 20 mA, 0 to 10 Vdc
TH	Thermistor, 4 to 20 mA, 0 to 10 Vdc
R	R thermocouple, 4 to 20 mA, 0 to 10 Vdc
S	S thermocouple, 4 to 20 mA, 0 to 10 Vdc
B	B thermocouple, 4 to 20 mA, 0 to 10 Vdc
MV	4 to 20 mA, 0 to 10 Vdc, 100 mV

\*Select one.

### Power Options

Ordering Suffix	Description
-1	240 Vac
-2	8 to 15 Vdc

### Accessories

Model No.	Description
RELAY-URM-400	Universal 15 A mechanical 4-relay module
RELAY-URM-800	Universal 15 A mechanical 8-relay module

*Comes with complete operator's manual.*

**Ordering Example:** CN1514-TC-1, wall-mount 4-zone controller with T/C input, 240 Vac.



The CN1500 Series have sturdy, clear doors that open easily!