



# 1/4 DIN Ramp/Soak Temperature/Process Controllers with Fuzzy Logic

CN72000 Series  
Starts at  
**\$437**

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



- ✓ Dual-Display NEMA 4X (IP65) Front Panel Resists Dust and Moisture
- ✓ Front Panel Programmability
- ✓ 16 Ramp/Soak Segments with Program End Control
- ✓ Fuzzy Logic
- ✓ Autotune
- ✓ Built-In, Isolated 24 Vdc Power Supply
- ✓ Isolated Control Outputs



CN72033, \$437, shown actual size.

The CN72000 Series temperature/process controllers set a new standard in quality, versatility, ease-of-use and value. Possessing many high-level standard features, additional function setup items also appear in the control menu when a function is selected, simplifying the selection process. Units feature a universal input for thermocouple Types J, K, E, T, L, N, B, C, S and R, RTD's, a differential input (-10 to 10 mVdc), and a process input (0 to 20 mAdc, 0 to 10 Vdc). A standard 24 V isolated, regulated power supply is included; operates most standard 4 to 20 mA transmitters. Standard features include autotune, fuzzy logic, fully adjustable PID, auto/manual control with smooth transfer and front panel activation key, percent output indicator, peak and valley indicator, loop break protection and indication. For process inputs, the display is fully programmable from -1999 to 9999 with selectable decimal point location. Most thermocouple and

RTD inputs show whole or tenth degree displays. The CN72000 Series can be programmed for on/off, PID, heat/cool, or latching alarm. All outputs are isolated from the inputs. Outputs include 10 A relay, and scalable 0 to 20 mAdc.

### Specifications

**Selectable Inputs:** Thermocouple, RTD, DC voltage or DC current

#### Input Impedance:

**Thermocouple:** 3 MΩ minimum  
**Voltage:** 5000

**Current:** 10

**RTD Current:** 200 μA maximum

**Display:** Two 4-digit, 7-segment, 6.35 mm H (0.25") LEDs

**Accuracy:** ±0.25% of span, ±1 least significant digit

**Supply Voltage:** 100 to 240 Vac, nominal, 10 to 15%, 50 to 400 Hz

**Single Phase:** 132 to 240 Vdc, nominal, 10 to 20%

**Operating Temperature:** -10 to 55°C (14 to 131°F)

#### Control Output Ratings:

**Relay:** SPDT, 10 A @ 240 Vac

**Resistive:** 1/2 hp @ 120 Vac, 1/2 hp @ 240 Vac

**Alarm Relay:** SPST, 3 A @ 240 Vac resistive

#### Proportional Current (Isolated):

0 to 20 mAdc, scalable into 600 Ω maximum

**SSR:** 2.5 A @ 240 Vac @ 25°C (77°F); derates to 1.25 A @ 55°C (130°F)

#### DC Pulse (Isolated):

15 Vdc @ 20 mA

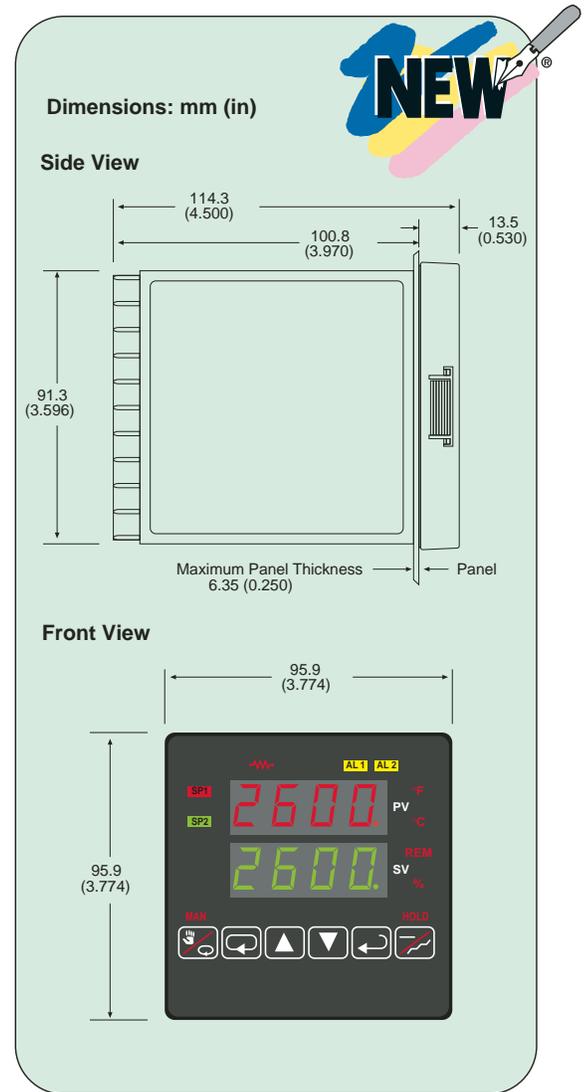
**Weight:** 369 g (13 oz)

## Inputs

Input Types	Range
<b>K</b> Thermocouple	-129 to 1371°C (-200 to 2500°F)
<b>J</b> Thermocouple	-73 to 871°C (-100 to 1600°F)
<b>T</b> Thermocouple	-212 to 398°C (-350 to 750°F)
<b>E</b> Thermocouple	-73 to 982°C (-100 to 1800°F)
<b>N</b> Thermocouple	-73 to 1300°C (-100 to 2372°F)
<b>R</b> Thermocouple	-17 to 1760°C (0 to 3200°F)
<b>S</b> Thermocouple	-17 to 1760°C (0 to 3200°F)
<b>B</b> Thermocouple	24 to 1820°C (75 to 3308°F)
<b>L</b> (J DIN) Thermocouple	-73 to 871°C (-100 to 1600°F)
<b>C</b> Thermocouple	-17 to 2320°C (0 to 4208°F)
Pt100 RTD (0.00385)	-200 to 875°C (-328 to 1607°F)
Pt100 RTD (0.00392)	-200 to 875°C (-328 to 1607°F)
RTD, 120 Ω nickel (0.00628)	-80 to 320°C (-112 to 608°F)
RTD, Pt1000 (0.00385)	-200 to 875°C (-328 to 1607°F)
0 to 20 mA*, 4 to 20 mA*	-1999 to 9999
0 to 10Vdc*, -10 to 10 Vdc*, -10 to 10 mVdc*	-1999 to 9999

**Note:** All thermocouple and RTD inputs can be set for 0.1° display. If temperature goes above 999.9° or below -199.9°, the display will return to whole-degree resolution.

\* **Process Input Types:** The 0 to 20 mAdc, 4 to 20 mAdc, 0 to 10 Vdc, 2 to 10 Vdc, and -10 to 10 mVdc inputs are fully scalable from a minimum of 100 counts span placed anywhere within the range of -1999 to 9999. Decimal point position is adjustable from the zero place (9999), tenths (999.9), hundredths (99.99) or thousandths (9.999).



## Options

Ordering Suffix	Add'l Price	Description
-RSP1	\$60	Remote setpoint, 0 to 20 mA
-RSP2	60	Remote setpoint, 0 to 10 Vdc
-PV1	60	Retransmission output, 0 to 20 mA
-PV2	60	Retransmission output, 0 to 10 Vdc
-4SP	60	4-stage remote setpoint

## MOST POPULAR MODELS HIGHLIGHTED!

To Order (Specify Model Number)		
Model Number	Price	Description
<b>CN72130</b>	<b>\$437</b>	Single output relay/DC pulse with alarm
<b>CN72150</b>	<b>474</b>	Single output 0 to 20 mA with alarm
<b>CN72033</b>	<b>437</b>	Dual output 2 relay/DC pulse
<b>CN72011</b>	<b>437</b>	Dual output 2 AC SSR/DC pulse
<b>CN72053</b>	<b>474</b>	Dual output 0 to 20 mA and relay/DC pulse
<b>CN72055</b>	<b>503</b>	Dual output two 0 to 20 mA
<b>CN72111</b>	<b>459</b>	Dual output 2 AC SSR/DC pulse with alarm
<b>CN72133</b>	<b>459</b>	Dual output 2 relay/DC pulse with alarm
<b>CN72153</b>	<b>496</b>	Dual output two 0 to 20 mA relay/DC pulse with alarm
<b>CN72155</b>	<b>524</b>	Dual output two 0 to 20 mA with alarm

Comes complete with operator's manual.

**Ordering Examples:** CN72130, single output relay/DC pulse with alarm, \$437. CN72053, dual output relay/DC pulse, \$474.

## Accessories (Field Installable)

Model Number	Price	Description
<b>CNQUENCHARC</b>	<b>\$8</b>	Noise suppression kit, 110 to 230 Vac
<b>DPP-6</b>	<b>575</b>	¼ DIN panel punch
<b>GE-2117</b>	<b>23</b>	Reference Book: Controller Tuning, PID

# omega.co.uk<sup>®</sup>

Your One-Stop Source for Process Measurement and Control!

Freephone 0800 488 488 | International +44(0) 161 777 6622 | Fax +44(0) 161 777 6622 | Sales@omega.co.uk

[www.omega.co.uk](http://www.omega.co.uk)



#### UNITED STATES

[www.omega.com](http://www.omega.com)

1-800-TC-OMEGA  
Stamford, CT.

#### CANADA

[www.omega.ca](http://www.omega.ca)

Laval(Quebec)  
1-800-TC-OMEGA

#### GERMANY

[www.omega.de](http://www.omega.de)

Deckenfronn, Germany  
0800-8266342

#### UNITED KINGDOM

[www.omega.co.uk](http://www.omega.co.uk)

Manchester, England  
0800-488-488  
+44-(0)161-777-6611

#### FRANCE

[www.omega.fr](http://www.omega.fr)

0800-466-342

#### BENELUX

[www.omega.nl](http://www.omega.nl)

0800-099-33-44



## More than 100,000 Products Available!

### • Temperature

Calibrators, Connectors, General Test and Measurement Instruments, Handheld Instruments for Temperature Measurement, Ice Point References, Indicating Labels, Crayons, Cements and Lacquers, Infrared Temperature Measurement Instruments, Recorders, Relative Humidity Measurement Instruments, PT100 Probes, PT100 Elements, Temperature & Process Meters, Timers and Counters, Temperature and Process Controllers and Power Switching Devices, Thermistor Elements, Probes and Assemblies, Thermocouples, Thermowells and Head and Well Assemblies, Transmitters, Thermocouple Wire, RTD Probes

### • Flow and Level

Air Velocity Indicators, Doppler Flowmeters, Level Measurement, Magnetic Flowmeters, Mass Flowmeters, Pitot Tubes, Pumps, Rotameters, Turbine and Paddle Wheel Flowmeters, Ultrasonic Flowmeters, Valves, Variable Area Flowmeters, Vortex Shedding Flowmeters

### • pH and Conductivity

Conductivity Instrumentation, Dissolved Oxygen Instrumentation, Environmental Instrumentation, pH Electrodes and Instruments, Water and Soil Analysis Instrumentation

### • Data Acquisition

Communication Products and Converters, Data Acquisition and Analysis Software, Data Loggers Plug-in Cards, Signal Conditioners, USB, RS232, RS485, Ethernet and Parallel Port Data Acquisition Systems, Wireless Transmitters and Receivers

### • Pressure, Strain and Force

Displacement Transducers, Dynamic Measurement Force Sensors, Instrumentation for Pressure and Strain Measurements, Load Cells, Pressure Gauges, Pressure Reference Section, Pressure Switches, Pressure Transducers, Proximity Transducers, Regulators, Pressure Transmitters, Strain Gauges, Torque Transducers, Valves

### • Heaters

Band Heaters, Cartridge Heaters, Circulation Heaters, Comfort Heaters, Controllers, Meters and Switching Devices, Flexible Heaters, General Test and Measurement Instruments, Heater Hook-up Wire, Heating Cable Systems, Immersion Heaters, Process Air and Duct, Heaters, Radiant Heaters, Strip Heaters, Tubular Heaters