

# ¼ DIN Ramp/Soak Temperature/ Process Controllers with Fuzzy Logic

TRODEKS®

## CN72000 Series



- ✓ 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

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 mA<sub>dc</sub>, 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



CN72033.

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 mA<sub>dc</sub>.

### 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:** ½ hp @ 120 Vac, ½ hp @ 240 Vac

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

#### Proportional Current (Isolated):

0 to 20 mA<sub>dc</sub>, 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

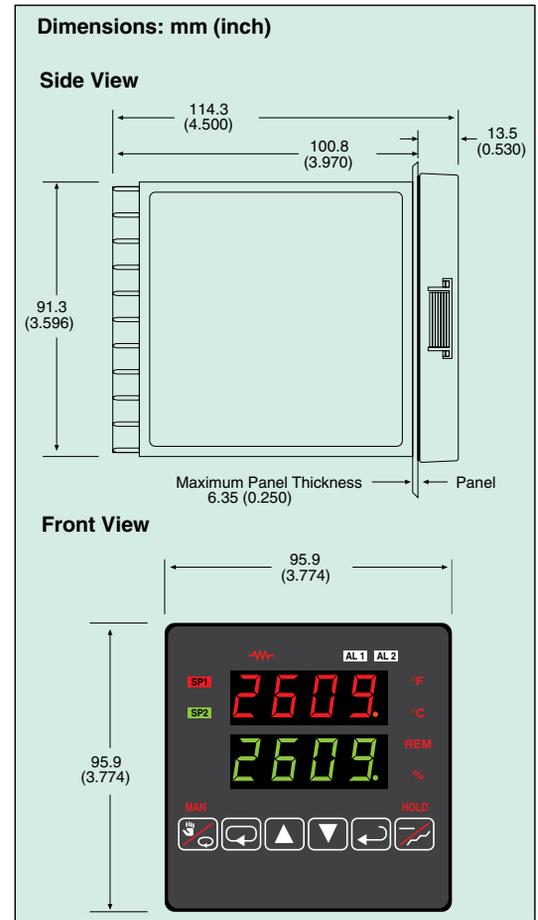
**Weight:** 369 g (13 oz)

## 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 mA, 4 to 20 mA, 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	Description
-RSP1	Remote setpoint, 0 to 20 mA
-RSP2	Remote setpoint, 0 to 10 Vdc
-PV1	Retransmission output, 0 to 20 mA
-PV2	Retransmission output, 0 to 10 Vdc
-4SP	4-stage remote setpoint

## To Order

Model No.	Description
CN72130	Single output relay/DC pulse with alarm
CN72150	Single output 0 to 20 mA with alarm
CN72033	Dual output 2 relay/DC pulse
CN72011	Dual output 2 AC SSR/DC pulse
CN72053	Dual output 0 to 20 mA and relay/DC pulse
CN72055	Dual output two 0 to 20 mA
CN72111	Dual output 2 AC SSR/DC pulse with alarm
CN72133	Dual output 2 relay/DC pulse with alarm
CN72153	Dual output two 0 to 20 mA relay/DC pulse with alarm
CN72155	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.

## Accessory (Field Installable)

Model No.	Description
CNQUENCHARC	Noise suppression RC snubber (2 leads), 110 to 230 Vac