

# 1/8 DIN Vertical and 1/4 DIN Universal Input Temperature/Process Controllers

CN8240/CN8260  
Starts at  
**\$339**

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



## Standard Features

- ✓ Field-Configurable Universal Temperature and Process Inputs
- ✓ Autotuning, Direct- or Reverse-Acting for Both Outputs
- ✓ 8 Ramp and 8 Soak Segments
- ✓ User-Selectable Ramp to Setpoint
- ✓ Dual Output/Dual Alarm Capabilities
- ✓ Decimal Display in 0.1° for Measured Temperatures Under 1000°C or °F
- ✓ NEMA 4X Front Panel

## Optional Features

- ✓ Single or Dual Alarms
- ✓ RS232 or 485 Digital Communications
- ✓ Remote Analog Setpoint or Process Output
- ✓ Contact/Digital Input
- ✓ Transducer Excitation
- ✓ PV or SV Retransmission
- ✓ Low Voltage Power: 24 Vac/Vdc



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.



CN8241-R1, \$339, shown smaller than actual size.



CN8261-R1, \$401, shown smaller than actual size.

The CN8240/CN8260 1/8 DIN vertical and 1/4 DIN temperature/process controllers are extremely versatile and user-friendly. The user needs to review only those parameters relevant to the particular application during setup. A dual digital display offers optimal process information at a glance. The dedicated upper display shows the process value, while the lower display shows setpoint and setup parameters. Individual LEDs identify the status of outputs, alarms, digital communications, and special options.

The CN8240/CN8260 features a NEMA 4X front panel and a universal power supply that accepts 100 to 250 Vac and 120 to 250 Vdc. A 24 Vac/24 Vdc power supply option is also available. Calibrations for most thermocouples and RTDs are available, as well as for millivolt linear, volt linear, and current linear inputs. Unlike the CN8200 1/6 DIN models, these controllers have plug-in output modules that can be changed in the field. In addition, a single-output model can be

converted to a dual-output version in the field.

Available control algorithms are P, PI, PD, PID, or on/off. The autotune feature automatically sets proportional band, derivative, and integral before the process reaches setpoint. These parameters provide quick stabilization of processes with minimum overshoot, hunting, or cycling. Eight-level ramp/soak control is standard, and includes decimal display on thermocouple ranges, digital display and signal filtering, and a percentage of power limit setting.

The dual control outputs can be configured for a variety of control applications, and an additional 2 dedicated alarm outputs are also available. The CN8240/CN8260 offers a wide range of options, including RS232 and RS485 digital communications, a variety of remote setpoint options, 3 contact/digital input modes, 4 transducer excitation voltages, and 4 auxiliary output ranges.

## Specifications

### Performance

**Accuracy:** ±0.2% FS, ±1 digit

**Setpoint Resolution:**

1 count/0.1 count

**Repeatability:** ±1 count

**Temperature Stability:**

5µV/°C (maximum)

**T/C Cold-Junction Tracking:**

0.05°C/°C ambient

**Common-Mode Rejection:** 100 dB

**Series Mode Rejection:** >70 dB

**Process Sampling:** 10 Hz (100 ms)

### Inputs

**Input Type:** See Input Ranges

**Digital Input:** For remote setpoint, remote standby or ramp/soak run and hold

**Thermocouple Lead Resistance:**

100 Ω max for rated accuracy

**Decimal Position:** Selectable

### Outputs

**Output #1:** Reverse- or direct-acting, configured from menu

**Output #2:** Reverse- or direct-acting, configured from menu

**Mechanical Relay:** Rated 5 A @ 120 Vac, 3 A @ 240 Vac, NO, (output 1);

rated 5 A @ 120 Vac, 3 A @ 240 Vac, NO (output 2)

**Current:** 4 to 20 mA, 500 Ω max (F1, F2); 4 to 20 mA, 1000 Ω max (FH1, FH2)

**Voltage:** 20 Vdc pulse

**Triac:** SSR, 120/240 Vac, zero voltage switched, rated 1 A continuous, 10 A surge @ 25°C (77°F)

**Alarms:** Mechanical relay rated 5 A @ 120 Vac, 3 A @ 240 Vac, NO

### Control Characteristics

**Setpoint Limits:** Limited to configured range for thermocouple and RTD; limited to scaled range

**Alarms:** Adjustable for Hi/Lo; selectable process or deviation

**Rate (Derivative):** 0 to 2400 seconds

**Reset (Integral):** 0 to 9600 seconds

**Cycle Time:** 0.2 to 120 seconds

**Proportional Band:**

1 to span of sensor

**Deadband:** Negative span to positive span of sensor

**Hysteresis:** 1 to span of sensor

**Autotune Damping:** Adjustable (low, normal or high)

**Ramp to Setpoint:** 1 to 9999 minutes

**Autotune:**

Operator-initiated from front panel

**Manual Control:**

Operator-initiated from front panel

### General

**Power:** 100 to 250 V, 50/60 Hz (single-phase); 120 to 250 Vdc, 24 Vac/24 Vdc (optional)

**Power Consumption:** Less than 6 VA (instrument) @ 120 Vac

**Front-Panel Rating:** NEMA 4X

¼ DIN versions are also available. Refer to the CN8201 and CN8202 Series on page P-45 through P-47.



### Input Ranges

Input Type	Range
<b>J</b> Iron-Constantan	-200 to 760°C (-328 to 1400°F)
<b>K</b> CHROMEALLOY®-ALOMEGA®	-270 to 1354°C (-454 to 2469°F)
<b>T</b> Copper-Constantan	-270 to 400°C (-454 to 752°F)
<b>N</b> OMEGALLOY®	-268 to 1300°C (-450 to 2372°F)
<b>R</b> Pt/13%Rh - Pt	-50 to 1768°C (-58 to 3214°F)
<b>S</b> Pt/10%Rh - Pt	-50 to 1768°C (-58 to 3214°F)
<b>B</b> Pt/30%Rh - Pt/6%Rh	0 to 1820°C (32 to 3308°F)
<b>C</b> W/5%Re - W/26%Re	0 to 2315°C (32 to 4199°F)
<b>E</b> CHROMEALLOY®-Constantan	-150 to 1000°C (-238 to 1832°F)
NNM (nickel-18% molybdenum, vs. nickel -0.8% cobalt)	0 to 1410°C (32 to 2570°F)
Platinel II	-100 to 1232°C (-148 to 2250°F)
<b>RTD</b> 3-wire, 100 Ω PT	-200 to 850°C (-328 to 1562°F)
<b>RTD</b> 3-wire, 100 Ω PT	-199.9 to 375.0°C (-199.9 to 707.0°F)
0 to 1V	Scalable (-1999 to 9999) selectable
1 to 5V	Scalable (-1999 to 9999) selectable
0 to 5V	Scalable (-1999 to 9999) selectable
0 to 10V	Scalable (-1999 to 9999) selectable
10 to 50 mV	Scalable (-1999 to 9999) selectable
0 to 50 mV	Scalable (-1999 to 9999) selectable
0 to 10 mV	Scalable (-1999 to 9999) selectable
0 to 100 mV	Scalable (-1999 to 9999) selectable
4 to 20 mA	Scalable (-1999 to 9999) selectable
0 to 20 mA	Scalable (-1999 to 9999) selectable

### Operating Ambient Range:

0 to 55°C (32 to 131°F) @ 90% RH max, non-condensing

### Memory Protection:

Solid state non-volatile memory

**Connections:** Screw terminals

**Contacts:** Twin bifurcated

### ¼ DIN CN8240 Specifications

**Display:** Dual LED, 4-digit, 9.2 mm (0.36"), orange-process display and green-menu/parameter display

**Panel Cutout:**

92 x 46 mm (3.60 x 1.8")

**Dimensions:**

100.33 H x 53.3 W x 18.2 mm D bezel (3.95 x 2.10 x 0.72")

### Depth Behind Panel:

100 mm (3.937")

**CN8240 Series Weight:**

340 g (12 oz)

### ¼ DIN CN8260 Specifications

**Display:** Dual LED, 4-digit orange process display, 14 mm (0.55"), green-menu/parameter display, 9.2 mm (0.36")

**Panel Cutout:** 92 mm (3.60") square

**Dimensions:**

100.33 H x 100.33 W x 18.2 mm D bezel (3.95" x 3.95" x 0.72")

**Depth Behind Panel:**

100 mm (3.937")

**CN8260 Series Weight:**

425 g (15 oz)

To Order (Specify Model Number)		
Model Number	Price	Description
CN8241-(*)	\$339	Single-output ramp/soak controller
CN8242-(*)-(*)	369	Dual-output ramp/soak controller

Comes complete with operator's manual.

\* Specify output type from output options table.

Ordering Example: CN8241-R1, 1/8 DIN controller with single relay output, \$339.

OCW-3, OMEGACARE<sup>SM</sup> extends standard 2-year warranty to a total of 5 years (\$84), \$339 + 84 = \$423.

1/4 DIN Models

Model Number	Price	Description
CN8261-(*)	\$401	Single-output ramp/soak controller
CN8262-(*)-(*)	431	Dual-output ramp/soak controller

Comes complete with operator's manual.

\* Specify output type from output options table.

Ordering Example: CN8261-R1, 1/4 DIN single mechanical relay output ramp/soak process controller, \$401.

Output Options—No Additional Cost

Option Type	First Output Order Suffix	Second Output Order Suffix
Relay	-R1	-R2
DC Pulse	-DC1	-DC2
1A SSR	-T1	-T2
4 to 20 mA (500 Ω max)	-F1	-F2
4 to 20 mA (800 Ω max)	-FH1	-FH2

Alarm Options

Ordering Suffix	Price	Description
-AL1	\$25	Single alarm relay
-AL2	50	Dual alarms

Communications Options

Ordering Suffix	Price	Description
-C2	\$95	RS232 communications
-C2-MOD	125	RS232 with MODBUS <sup>®</sup> protocol
-C4	95	RS485 communications
-C4-MOD	125	RS485 with MODBUS protocol

Optional Communications Software

Model No.	Price	Description
CN8-SW	N/C	Remote monitoring and control software

Includes 2 folders—1 for standard and 1 for MODBUS protocol.

CN0-SW software available, visit [omega.com/cn8240](http://omega.com/cn8240)

Accessories (Field Installable)

Model Number	Price	Description
CN8500-R	\$35	Relay output module
CN8500-DC	35	DC pulse output module
CN8500-T	35	AC SSR output module
CN8500-F	35	4 to 20 mA (500 Ω max) output module
CNQUENCHARC	8	Noise suppression RC snubber (2 leads), 110 to 230 Vac

Transducer Power Supply Options

Ordering Suffix	Price	Description
-XP1	\$75	Transducer power supply, 15 Vdc
-XP2	75	Transducer power supply, 12 Vdc
-XP3	75	Transducer power supply, 10 Vdc
-XP4	75	Transducer power supply, 5 Vdc

Optional Power Supply

Ordering Suffix	Price	Description
-LV	\$40	24 Vac/Vdc



CN8241-R1, \$339.

Shown smaller than actual size.

CN8261-R1, \$401.

Process Output Options (Only One Option Can Be Ordered)

Ordering Suffix	Price	Description
-PVSV1	\$75	Process output, PV or SV, 4 to 20 mA
-PVSV2	75	Process output, PV or SV, 0 to 5 Vdc
-DIC	75	Digital input switch closed
-RSP4	75	Remote setpoint, 0 to 5 Vdc
-RSP5	75	Remote setpoint, 1 to 5 Vdc
-RSP6	75	Remote setpoint, 0 to 20 mA
-RSP7	75	Remote setpoint, 4 to 20 mA



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