

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

CN8240/CN8260
Starts at
\$339



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



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

Panel Punches Available, Visit omega.com/panelpunches



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: $\pm 0.2\%$ FS, ± 1 digit

Setpoint Resolution:

1 count/0.1 count

Repeatability: ± 1 count

Temperature Stability:

$5\mu\text{V}/^\circ\text{C}$ (maximum)

T/C Cold-Junction Tracking:

$0.05^\circ\text{C}/^\circ\text{C}$ 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

$\frac{1}{8}$ DIN versions are also available. Refer to the CN8201 and CN8202 Series on page P-45 through 47.



Input Ranges

| Input Type | Range |
|--|---------------------------------------|
| J Iron-Constantan | -200 to 760°C (-328 to 1400°F) |
| K CHROMEGA®-ALOMEGA® | -270 to 1354°C (-454 to 2469°F) |
| T Copper-Constantan | -270 to 400°C (-454 to 752°F) |
| N OMEGALLOY® | -268 to 1300°C (-450 to 2372°F) |
| R Pt/13%Rh - Pt | -50 to 1768°C (-58 to 3214°F) |
| S Pt/10%Rh - Pt | -50 to 1768°C (-58 to 3214°F) |
| B Pt/30%Rh - Pt/6%Rh | 0 to 1820°C (32 to 3308°F) |
| C W/5%Re - W/26%Re | 0 to 2315°C (32 to 4199°F) |
| E CHROMEGA®-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) |
| RTD 3-wire, 100 Ω PT | -200 to 850°C (-328 to 1562°F) |
| RTD 3-wire, 100 Ω PT | -199.9 to 375.0°C (-199.9 to 707.0°F) |
| 0 to 1 V | Scalable (-1999 to 9999) selectable |
| 1 to 5 V | Scalable (-1999 to 9999) selectable |
| 0 to 5 V | Scalable (-1999 to 9999) selectable |
| 0 to 10 V | 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

$\frac{1}{8}$ 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)

$\frac{1}{4}$ 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: CN8242-R1-R2-RSP4-LV, 1/8 DIN controller with dual relay output, single alarm relay, and 24 Vac/Vdc power \$369 + 75 + 40 = \$484. OCW-3, OMEGACARESM extends standard 2-year warranty to a total of 5 years (\$121), \$121 + 484 = \$605.

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: CN8262-R1-R2-AL2-LV, 1/4 DIN dual mechanical relay output ramp/soak process controller, and low-voltage power with alarm, \$431 + 50 + 40 = \$521.

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 [®] 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.

Software available on the OMEGA[®] Web site at 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 |
| DPP-5 | 525 | 1/8 DIN panel punch |
| DPP-6 | 575 | 1/4 DIN panel punch |

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 |



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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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