

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

Panel Punches Available

CN8240/CN8260



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.



CN8241-R1 shown smaller than actual size.



CN8261-R1 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 maximum (F1, F2); 4 to 20 mA, 1000 Ω maximum (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

$\frac{1}{6}$ DIN versions are also available. Refer to the CN8201 and CN8202 Series



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 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 maximum, non-condensing

Memory Protection:

Solid state non-volatile memory

Connections: Screw terminals

Contacts: Twin bifurcated

$\frac{1}{6}$ 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)

$\frac{1}{6}$ 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)

¼ DIN Models

To Order	
Model Number	Description
CN8241-(*)	Single-output ramp/soak controller
CN8242-(*)-(*)	Dual-output ramp/soak controller

Comes complete with operator's manual.

* Specify output type from output options table.

Ordering Example: CN8241-R1, ¼ DIN controller with single relay output.

OCW-3, OMEGACARESM extends standard 2-year warranty to a total of 5 years.

¼ DIN Models

Model Number	Description
CN8261-(*)	Single-output ramp/soak controller
CN8262-(*)-(*)	Dual-output ramp/soak controller

Comes complete with operator's manual.

* Specify output type from output options table.

Ordering Example: CN8261-R1, ¼ DIN single mechanical relay output ramp/soak process controller.

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 maximum)	-F1	-F2
4 to 20 mA (800 Ω maximum)	-FH1	-FH2

Alarm Options

Ordering Suffix	Description
-AL1	Single alarm relay
-AL2	Dual alarms

Communications Options

Suffix	Ordering Description
-C2	RS232 communications
-C2-MOD	RS232 with MODBUS [®] protocol
-C4	RS485 communications
-C4-MOD	RS485 with MODBUS protocol

Optional Communications Software

Model No.	Description
CN8-SW	Remote monitoring and control software

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

CN0-SW software available

Accessories (Field Installable)

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

Transducer Power Supply Options

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

Optional Power Supply

Ordering Suffix	Description
-LV	24 Vac/Vdc



CN8241-R1.

Shown smaller than actual size.

CN8261-R1.

Process Output Options (Only One Option Can Be Ordered)

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