

1/16 DIN Universal Temperature and Process Controllers with 8-Segment Ramp/Soak

CN8200 Series
Starts at
\$264



Standard Features

- ✓ Field-Configurable Universal Inputs
- ✓ Autotuning, Direct- or Reverse-Acting for Both Outputs
- ✓ User-Selectable Ramp to Setpoint
- ✓ 8 Ramp and 8 Soak Segments
- ✓ Decimal Display in 0.1° for Measured Temperatures Under 1000°F or °C
- ✓ NEMA 4X (IP65) Front Panel

Optional Features

- ✓ RS232/485 Digital Communications, Contact/Digital Remote Input, Transducer Excitation, and PV or SV Retransmission
- ✓ 24 Vac/Vdc Power Supply

The CN8200 temperature/process controller is extremely versatile and user-friendly. During setup, the user needs to review only those parameters relevant to the particular application. A dual digital display offers optimal process information at a glance. Individual LEDs identify the status of outputs, alarms, digital communications, and special options. The CN8200 features a NEMA 4X front panel and a



Panel punches available, visit omega.com/panelpunches

CN8201-R1, \$264, shown actual size.

1/8 DIN and 1/4 DIN Versions Are Also Available! See the CN8240 and CN8260 Series' on Pages P-68 through P-70!



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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. 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 a 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 and alarm applications, and 2 dedicated alarm outputs are also available.

The CN8200 offers a wide range of options, including RS232 and RS485 digital communications, 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:** 5 µV/°C max
- 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 Table
- 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, normally open (NO), normally closed (NC) (output 1); rated 5 A @ 120 Vac, 3 A @ 240 Vac, NO (output 2)

Current: 4 to 20 mA, 500 Ω max (suffix F1, F2); 4 to 20 mA, 1000 Ω max (suffix FH1, FH2)
Voltage: 20 Vdc pulse
Solid State Relay: 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; optically isolated SSR rated 1 A, 120/240 Vac @ 25°C (77°C); DC alarms, 24 Vdc
Transducer Power Supply: 5, 10, 12, 15 Vdc ±10%
Control Characteristics
Setpoint Limits: Limited to configured range for thermocouple and RTD; limited to scaled range
Alarms: Adjustable for high/low; 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 250V, 50/60 Hz (single-phase); 120 to 250 Vdc, 24 Vac/24 Vdc (optional)
Display: Dual LED—4-digit, orange: process display; green: menu/parameter display; 9.2 mm (0.36")
Power Consumption: Less than 6 VA (instrument) @ 120 Vac
Weight: 226 g (8 oz)
Panel Cutout: 45 mm (1.771") square
Dimensions: 53.3 H x 53.3 W x 8.21 mm D (2.1 x 2.1 x 0.72") bezel
Depth Behind Panel: 100 mm (3.937")
Front-Panel Rating: NEMA 4X (IP65)
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
Ramp/Soak Programming Intervals: 8
Loops: 0 to 99
Ramp Time: 0 to 9999 minutes
Soak Time: 0 to 9999 minutes

Events/Alarms: 1 to 8
Ramp Setpoint: 1 to 9999 minutes
CN8-SW (Optional Software):
Minimum Hardware and Software Requirements: IBM PC or 100% compatible, Windows 95/98/NT; RS485 interface or RS232 to RS485 converter
Software Compatibility: CN8200 Series controllers
Software Capability: Supports up to 254 CN8200 Series controllers



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.



CN8202-R1, \$289, shown actual size.

Input and Range Table for Universal Input Controller

Input Type	Range
J Iron-Constantan	-200 to 760°C (-328 to 1400°F)
K CHROMEALLOY®-ALOMEALLOY®	-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 CHROMEALLOY®-Constantan	-150 to 1000°C (-238 to 1832°F)
NNM 18% molybdenum vs nickel -06% 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



CN8201-DC1, \$264, shown smaller than actual size.

AVAILABLE FOR FAST DELIVERY!

To Order (Specify Model Number)		
Model Number	Price	Description
CN8201-(*)	\$264	Single-output ramp/soak controller
CN8202-(*)-(*)	289	Dual-output ramp/soak controller

Comes complete with operator's manual.

* Specify output type from output options table. The controller can have the "-LV" low voltage power and 1 additional option.

Ordering Example: CN8202-R1-R2-LV-AL3, 1/16 DIN dual mechanical relay outputs, ramp/soak process controller, low voltage power, with DC pulse alarms, \$289 + 40 + 40 = \$369.

OCW-3 OMEGACARESM extends standard 2-year warranty to a total of 5 years, \$93, \$369 + 93 = \$462.

Output Options (No Additional Cost)

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


Low-Voltage Power Supply (Optional)

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

Additional Options (Only 1 Additional Option is Available Per Controller)

Ordering Suffix	Price	Description
-AL1	\$40	Single-alarm mechanical relay
-AL2	40	Dual alarms, AC SSR
-AL3	40	Dual alarms, DC level (24 Vdc)
-C2	95	RS232 communications
-C4	95	RS485 communications
-C4-DIC	115	RS485 with digital input, switch closed
-C4-DIO	115	RS485 with digital input, switch open
-C4-DIV	115	RS485 with digital input, 0 or 5V
-C4-MOD	95	RS485 with MODBUS [®] protocol
-C4-MOD-DIC	95	RS485 with MODBUS protocol with digital input switch closed
-C4-MOD-DIO	95	RS485 with MODBUS protocol with digital input switch open
-C4-MOD-DIV	95	RS485 with MODBUS protocol with digital input 0 or 5V
-PVSV1	75	Process output, 4 to 20 mA
-PVSV2	75	Process output, PV or SV, 0 to 5 Vdc
-RSP1	75	Remote setpoint switch closed with 1 alarm
-RSP2	75	Remote setpoint switch open with 1 alarm
-RSP3	75	0 or 5 Vdc remote setpoint with 1 alarm
-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 Communications Software/Accessories

Model No.	Price	Description
CN8-SW	N/C	Remote monitoring and control software
DPP-4	\$475	1/16 DIN panel punch
PE-1401	74	Reference Book: The Condensed Handbook of Measurement and Control 

Includes 2 folders: 1 for standard and 1 for MODBUS[®] protocol. Free CN8-SW software download available at omega.com/cn8201

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