

1/4 DIN Digital Temperature and Limit Controllers

Panel punches available

CN8100 Series



CN8121

- ✓ Large, Easy-to-Read LED, Selectable for Either Setpoint or Process Temperature
- ✓ Type J or K Thermocouple Input
- ✓ Adjustable Output Hysteresis to Prevent Rapid Cycling Around Setpoint Temperature
- ✓ Adjustable Deviation Alarm Flashes When Measured Temperature Exceeds or Falls Below Setpoint Temperature
- ✓ NEMA 4X (IP65) Front Bezel, Splash-Proof and Resistant to Dust
- ✓ Discrete Status Indicators Illuminate When Temperature Display, Setpoint Display or Heat/Cool Output Is Active
- ✓ Auto Tuning (CN8101 and CN8102)

The CN8100 Series controller is a low-cost, general purpose 1/4 DIN temperature controller, ideal for OEM or replacement applications. Microprocessor-based and accurate to $\pm 0.3\%$ FS, it may be ordered as either a PID controller, on/off controller or limit safety device.

As a separate safety feature to your control application, the CN8121-R1 limit controller provides reliable high/low temperature limit shut-off control for most machine and process control applications including environmental chambers, furnaces,

ovens and packaging machinery. As a high-limit device, these controllers have a normally energized SPST latching output relay which becomes de-energized whenever the process variable (PV) exceeds a selected setpoint value. Reset of the latching output relay is done by holding the parameter button for 3 seconds on the front panel of the controller, or by cycling power to the controller.

Specifications

General

Line Voltage: 85 to 250 Vac, 50/60 Hz, 120 to 300 Vdc (auto polarity)

Display: 3-digit, 14 mm (0.56") orange LED

Discrete Indicators:

Setpoint: Amber

Actual: Amber

Heat: Orange

Cool: Orange



CN8102-R1-R2, dual output PID controller shown smaller than actual size.

Power Consumption:

Less than 6 VA (instrument)

Front Panel Rating: NEMA 4X (IP65)

Operating Temperature:

0 to 60°C (32 to 140°F)

Humidity Tolerance: 90% RH maximum, non-condensing

Memory Protection:

Solid-state, non-volatile memory

Connections: Fast-on style (0.250" wide)

Panel Cutout: 1/4 DIN, 92 mm² (3.622 in²)

Dimensions: 96 x 96 x 6.35 mm bezel (3.78 x 3.78 x 0.25")

Panel Depth: 88.9 mm (3.5")

Weight: 737 g (1 lb. 10 oz)

Performance

Accuracy: $\pm 0.3\%$ of FS, ± 1 digit

Setpoint Resolution: 1 count

Repeatability: ± 1.0 count

Temperature Stability: 5 μ V/°C maximum

TC Cold End Tracking:

±0.05°C/ °C ambient

Noise Rejection: Common mode

>100 dB, Series mode >70 dB

Process Sampling: 3.7 Hz (270 ms)**Available Inputs:****Thermocouple:****CN8110:** Type J**CN8120:** Type J**CN8100:** Type J or K

Maximum lead resistance,

100 Ω for rated accuracy

Control Characteristics:**Control Hysteresis:** 1 to 140°C

(2 to 252°F)

Display Offset: -70 to 70°C

(-126 to 126°F)

Deviation Alarm: Off, 1 to 140°C

(Off, 1 to 252°F)

Outputs: Electromechanical relay, 5 A @ 250 Vac, 5 A @ 30 Vdc, solid-state relay, 120/240 Vac, 0 voltage switched, 2 A continuous (output 1), 0.5 A continuous (output 2) 10 A surge @ 25°C (77°F), pulsed DC 5V for external SSR



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.

CN8121-R1.

CN8111-R1.

CN8102-R1-R2.

Controllers shown smaller than actual size.

Output Options

Output Type	First Output Suffix-Heat Only (Reverse)	Second Output Suffix-Alarm (CN8112) or Cool Only (Direct—CN8102)
5 A Relay	-R1	-R2
AC SSR	-T1	-T2
DC Pulse	-D1	-D2

Note: “-T1” = 2A ac SSR, “-T2” = 1A ac SSR.

Input Types, Ranges and Setpoint Limits, °C/°F Switchable

Input Types for PID Control	Range
J Iron–Constantan	0 to 485°C (32 to 905°F)
K CHROMEGA®–ALOMEGA®	-17 to 537°C (0 to 999°F)
Input Type for On/Off and Limit	Range
J Iron–Constantan	0 to 485°C (32 to 905°F)

To Order

Model No.	Description
CN8101-(*)	PID controller, single output with Type J and K thermocouple input
CN8102-(*)-(*)	PID controller, dual output with Type J and K thermocouple input
CN8111-(*)	On/off controller, single output with Type J thermocouple input
CN8112-(*)-(*)	On/off controller, single control output and alarm output with Type J thermocouple input
CN8121-R1	High-limit controller, single relay output with Type J thermocouple input, FM approved
DPP-6	¼ DIN panel punch

Comes complete with operator's manual.

* Specify output type from Output Options table.

Ordering Examples: CN8102-R1-R2, ¼ DIN dual mechanical relay output PID controller.

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