

1/4 DIN Compact Temperature Controller

Panel Punches Available

CN2110 Series



- ✓ Compact 1/4 DIN Design
102 mm (4") Depth
- ✓ On/Off or Proportional Control
- ✓ 20 A Mechanical Relay Option
- ✓ Plug-In Output Modules
- ✓ J, K Thermocouple or RTD Inputs, °F and °C Indication, Switch Selectable
- ✓ Alarm Relay Output Option
- ✓ NEMA 4X (IP65) Front Panel

The CN2110 temperature controller offers simple setup, flexibility and control features in an attractive, compact design that both OEMs and users will find cost-effective. The CN2110 is housed in a rugged, plastic 1/4 DIN package that only requires 4" behind the mounting surface. Straightforward operation and easy-to-use control features are major strengths of the CN2110 controller.

Full Feature Outputs

A total of 6 output types further extend the applications flexibility of the CN2110 controller:

- 1 A relay
- 20 A relay
- 1 A solid state relay
- 5 A solid state relay
- 10 A solid state relay
- DC pulse, SSR drive

The CN2110 features a variety of output modules including high-current options of a 10 A solid state relay or 20 A mechanical relay. These outputs can directly control many cartridge or strip heaters, eliminating the need for a remote contactor or solid state relay. For larger, 3-phase loads, the CN2110 can drive a remote device with the pilot duty relay or solid state relay drive outputs.



The optional alarm output gives the user a non-latching, normally de-energized, 5 A relay output for over- or under-temperature protection of critical process temperatures.

Packaging with the User in Mind

The CN2110 features a NEMA 4X (IP65) front panel with tactile feedback push buttons. Large, bright LED's provide an easy-to-read interface at a distance.

Flexibility and Simplicity

Outputs are plug-in modules that are field replaceable. The switch-selectable control modes include on/off or proportional-integral (PI). Sensor Types J, K, RTD are also switch selectable. No programming necessary.

Features

High-Current Switching

The CN2110 features high-current output switching (relay and solid state relay), eliminating the need for an external power switching device and reducing installation cost. Single-phase loads up to 20 A may be directly connected to the CN2110, eliminating the

CN2110-DC shown actual size.

need for a remote contactor or solid state relay. The internal relay option can switch up to 20 A or the internal solid state relay option can switch up to 10 A. The CN2110 automatically detects the output type and adjusts the controllers setting for optimal control.

Control Modes

The CN2110 provides precise, solid state proportion control with automatic reset (PI) that will control most heating applications. On/off control may be selected for applications where maximum output life (load switching) is needed.



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.

Specifications

Control Modes: On/off, PI-proportional with integral

Control Adjustments

Proportional Band: Sensor range

Automatic Reset:

0.0 to 99.9 repeats/minutes

Cycle Time: 0.1 to 60.0 seconds

On/Off Deadband: 1° to 100°F or °C

Setpoint Upper Limit: Sensor range °F or °C

Setpoint Lower Limit: Sensor range °F or °C

Output Limit: 0 to 100%

Alarm Adjustments:

Type: Absolute, high or low

Setpoint: Sensor range °F or °C

Alarm Dead Band: 0 to 100°F or °C

Control/Alarm Outputs:

Relay (-R1): 1 A form A, 120/240 Vac

Relay (-R20): Form A, 120/240 Vac resistive loads at 30 s cycle time; 20 A, 500,000 operations; 15 A, 1 million operations; 5 A, 5 million operations

Solid State Relay Drive (-DC):

24 Vdc at 40 mA

Solid State Relay (-T1):

1 A, up to 240 Vac

Solid State Relay (-T5):

5 A, up to 240 Vac at 40°C

Solid State Relay (-T10):

10 A, up to 240 Vac at 40°C

Alarm: Form C, relay 5 A @ 120 Vac, 2.5 A at 240 Vac

Sensor Input: Switch selectable J, K thermocouple or RTD

Input Update Rate: 4 samples/s

Readout Stability:

J and K Thermocouple: ±1°F per 10°F change in ambient temperature

RTD: ±0.5 per 10°F change in ambient temperature

Open Sensor and Out-of-Range:

Conditions: Displays "SEnS", control output 0%

Instrument Power: 90 to 260 Vac, <10 Va

Operating Environment: 0 to 65°C (32 to 150°F)

Enclosure Material: High-temperature ABS plastic rated for 0° to 175°F

Front Panel:

NEMA 4X (IP65) construction

Influence of Line Voltage Variation: ±0.1% of sensor span per 10% change in nominal line voltage

Noise Rejection:

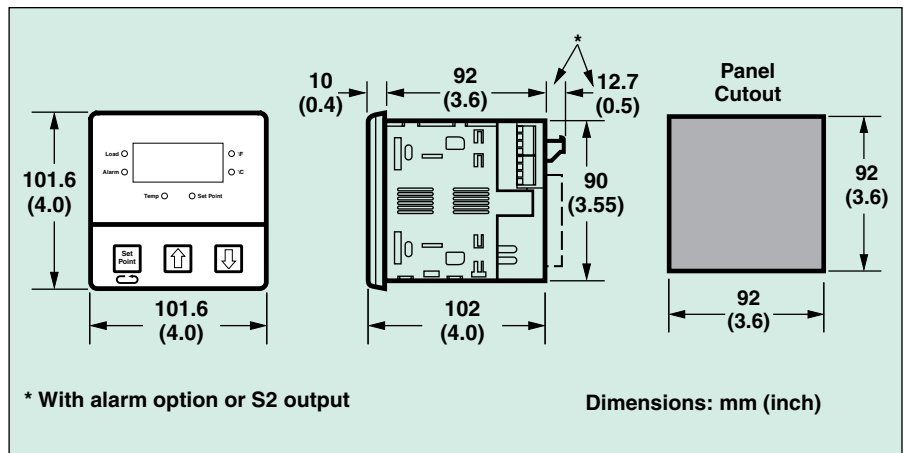
Common Mode Noise: <2°F with 230 Vac, 60 Hz applied from sensor input to earth ground

Series Mode Noise: <2°F with 100 mV, peak-to-peak series mode noise

RFI: Typically <0.5% of sensor span at distance of 1 m (3.1') from a transmitter of 4 W at 464 MHz

Sensor Leadwire Effect:

RTD: ±0.1% of sensor span per 20 Ω balanced leadwire resistance



Input Specifications

Input Specifications	Range °F	Range °C	Accuracy at 77°F ambient
J Iron-Constantan	-100 to 1400°F	-73 to 760°C	0.2% span ±1 LSD
K CHROME [®] GA [®] -ALOMEGA [®]	-300 to 2400°F	-184 to 1316°C	0.2% span ±1 LSD
RTD 100Ω Pt, 3-wire	-200 to 1000°F	-128 to 538°C	0.2% span ±1 LSD

To Order

Model No.	Description
CN2110-R1	Relay, 1 A
CN2110-R20	Relay, 20 A
CN2110-DC	DC pulse 24 Vdc
CN2110-T1	AC SSR, 1 A
CN2110-T5	AC SSR, 5 A
CN2110-T10	AC SSR, 10 A

Comes complete with operator's manual.

Ordering Examples: **CN2110-R20**, controller with a 20 A relay.

OCW-3, OMEGACARESM extends standard 1-year warranty to a total of 4 years.

CN2110-T10, controller with a 10 A ac SSR.

Option (Additional Cost)

Order Suffix	Description
-AL	Alarm

Accessories* (Field Installable)

Model No.	Description
2110X-R1	1 A relay output module
2110X-R20	20 A relay output module
2110X-DC	DC pulse output module
2110X-T1	1 A, AC SSR output module
2110X-T5	5 A, AC SSR output module
2110X-T10	10 A, AC SSR output module
2110X-R1-AL	1 A relay output module, with alarm
2110X-R20-AL	20 A relay output module, with alarm
2110X-DC-AL	DC pulse output module, with alarm
2110X-T1-AL	1 A, AC SSR output module, with alarm
2110X-T5-AL	5 A, AC SSR output module, with alarm
2110X-T10-AL	10 A, AC SSR output module, with alarm
CNQUENCHARC	Noise suppression RC snubber (2 leads), 110 to 230 Vac

*Alarm relay built into output module. If ordering a replacement module for existing controller with alarm, must specify accessory module with "-AL" suffix.