2110

1/4 DIN Temperature Controller

- **Easy Three-Step Setup**
- **High Current Output Option**
  - **10 Amp Solid State Relay**
  - **20 Amp Mechanical Relay**
- **Plug-In Output Cards**
- **J, K Thermocouple, or RTD Selectable Inputs, °F or °C Indication**
- **Alarm Relay Output Option**
- **NEMA 4X Front Panel**
- **Compact 1/4 DIN Design 4" Depth**

Description

The Chromalox 2110 Temperature controller offers simple setup, flexibility and control features in an attractive, compact design that both OEMs and users will find cost effective. The 2110 is housed in a rugged, plastic 1/4 DIN package that only requires four inches behind the mounting surface. Straightforward operation and easy-to-use control features are major strengths of the 2110 controller.

Easy Three-Step Setup: The 2110 delivers exceptional process temperature control. Your process is up and running after three easy setup steps: 1) Select the sensor and control type, 2) Hook up the system and 3) Select the desired temperature.

Full Feature Outputs: A total of six output functions further extend the applications flexibility of the 2110 controller:

- 1 Amp Relay
- 20 Amp Relay
- Solid State Relay Drive
- 1 Amp Solid State Relay
- 5 Amp Solid State Relay
- 10 Amp Solid State Relay

The 2110 features a variety of output cards including High Current options of a 10 Amp Solid State Relay or 20 Amp 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 three-phase loads, the 2110 can drive a remote device with the Pilot Duty Relay or Solid State Relay Drive outputs.

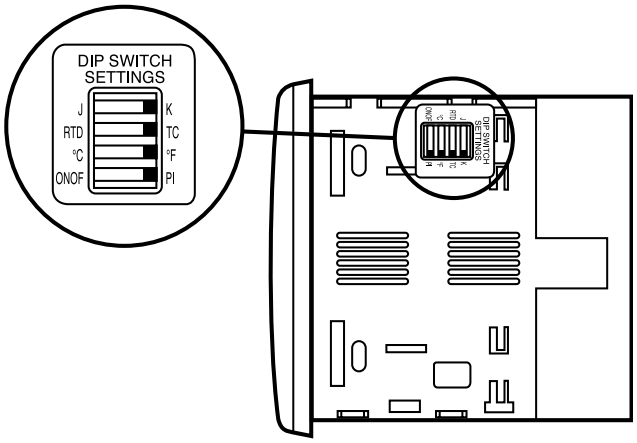
The optional Alarm Output gives you a non-latching, normally de-energized, 5 Amp relay output for over or under temperature protection of critical process temperatures.

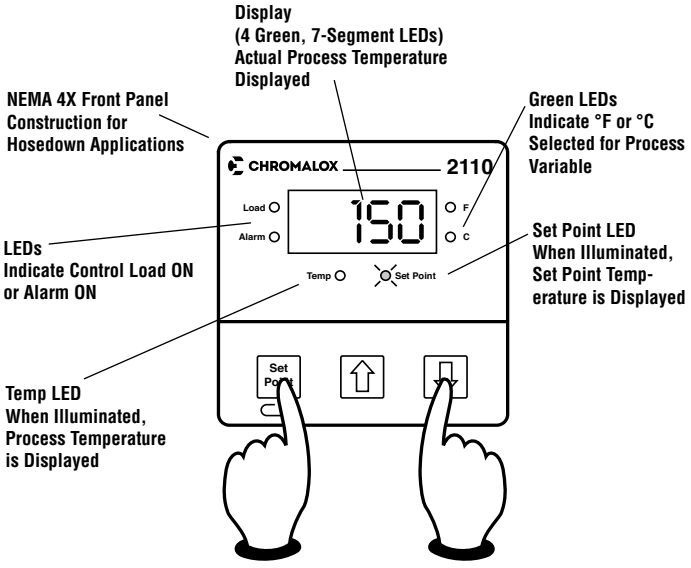
Packaging with the User in Mind: The 2110 features a NEMA 4X front panel with tactile feedback push buttons. The buttons allow even the heaviest gloved hand to easily configure this controller. Large, bright LED's provide an easy-to-read interface at a distance.

Flexibility: Output cards are plug-in modules that are field replaceable. The switch-selectible control modes include On-Off or Proportional-Integral (PI).

Simple Sensor & Control Selection

Locate the input selection DIP switch on the bottom of the 2110 controller and simply select °F or °C. Thermocouple (TC) or RTD, the Thermocouple type (J or K), and PI (Proportional-Integral) or onof (on-off) control.

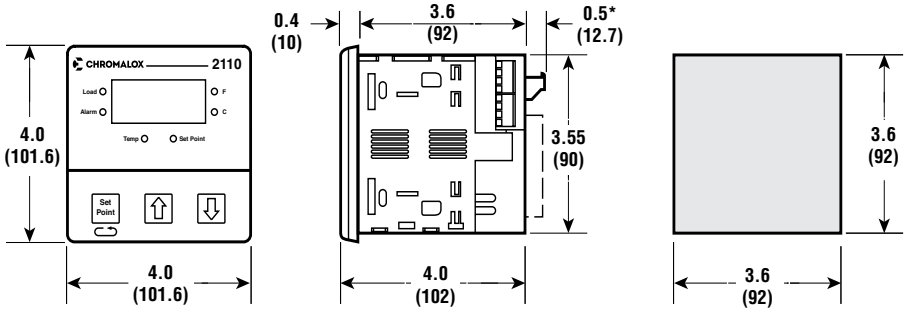




SINGLE CHANNEL

2110
1/4 DIN Temperature Controller *(cont'd.)*

Mounting Dimensions (Inches)



* With alarm option or S2 output

Specifications

Control Modes
ON/OFF
PI—Proportional with integral

Control Adjustments

Proportional Band	Sensor range
Automatic Reset	0.0 to 99.9 repeats/minute
Cycle Time	0.1 to 60.0 seconds
On/Off Deadband	1 to 100°F
Set Point Upper Limit	Sensor range
Set Point Lower Limit	Sensor range
Output Limit	0 to 100%

Alarm Adjustments

Type	Absolute High or Low
Set Point	Sensor range
Alarm Dead Band	0 to 100°F

Control/Alarm Outputs

Relay (R1)	1 Amp Form A, 120/240 VAC
Relay (R3)	20 Amp Form A 120/240 VAC resistive loads at 30 sec. cycle time 20 Amps, 500,000 Operations 15 Amps, 1 Million Operations 10 Amps, 5 Million Operations 5 Amps, 5 Million Operations
Solid State Relay Drive(V0)	24 VDC at 40mA
Solid State Relay (S0)	1A Triac
Solid State Relay (S1)	5A, up to 240 VAC at 40°C
Solid State Relay (S2)	10A, up to 240 VAC at 40°C
Alarm	Form C, Relay 5 Amps at 120 VAC, 2.5A at 240 VAC

Sensor Input	Switch selectable J, K Thermocouple or RTD
Input Update Rate	Four samples per second

Input Specifications	Range°F	Range°C
J TC	-100 to 1,400°F	-73 to 760°C
K TC	-100 to 2,400°F	-73 to 1,316°C
100Ω Pt RTD (a=.00385)	-200 to 1,000°F	-128 to 538°C

Readout Stability

J and K TC	+/-1°F per 10°F change in ambient temp.
RTD	+/-0.5°F per 10°F change in ambient temp.

Open Sensor and Out-of-Range Conditions	Displays "SEnS", Control output 0%
Instrument Power	100 to 240 VAC input +10%, -15% Less than 10 VA
Operating Environment	0 to 65°C (32 to 150°F)
Enclosure Material	ABS plastic rated for 0 to 175 °F
Front Panel	NEMA 4X construction
Influence of Line Voltage Variation	+/-0.1% of sensor span per 10% change in nominal line voltage

Accuracy at 77°F Ambient
0.2%span ±1 LSD

Ordering Information
Complete the Model Number using the Matrix provided.

In Stock:

Model	PCN
2110 1/4 DIN Controller Single Output	
2110-R1000 1 Amp Relay	317016
2110-R3000 20 Amp Relay	317024
2110-V0000, SSR Drive	317032
2110-S1000, 5 Amp SSR	317059
2110-S2000, 10 Amp SSR	317067
Dual Output	
2110-R1100, 1 Amp Relay Alarm	317075
2110-R3100, 20 Amp Relay Alarm	317083
2110-V0100 SSR Drive Alarm	317091
2110-S1100 5 Amp SSR Alarm	317112
2110-S2100 10 Amp SSR Alarm	317120

Model

2110 **1/4 DIN Controller, with Selectable Thermocouple or RTD Inputs**

Code	Control Output
R1	Relay, 1 Amp Form A, 120/240 VAC
R3	Relay, 20 Amp Form A, 120/240 VAC
V0	Solid State Relay Drive, 24 VDC @ 40mA
S0	Solid State Relay, 1 Amp, up to 240 VAC
S1	Solid State Relay, 5 Amp, up to 240 VAC, at 40°C
S2	Solid State Relay, 10 Amp, up to 240 VAC, at 40°C

Code	Alarm output (Kit Option)
0	No Alarm
1	Form "C" Relay, 5 Amp at 120 VAC, 2.5 Amps at 240 VAC

Code	
0	Add to Complete Part Number

Code	Power Supply
0	100-240 VAC

2110 - R3 1 0 0 Typical Model Number