

300

300D & 300B Temperature Controllers

- **300D - Enclosed with Integral Set Point Dial**
- **300B - Open Board with Remote Set Point Knob**
- **On/Off or Proportional Controller**
- **Sub-panel or DIN Rail Mounting**
- **10Amp Control Relay**
- **Power On & Load LED Indication (300D)**



Chromalox[®]
PRECISION HEAT AND CONTROL

PDS 300



300D

Description

The 300 Series Controllers are rugged, reliable and very economical for precise process control. These controllers are designed for general purpose industrial and commercial temperature control.

The fully enclosed 300D can be either mounted directly to the surface or DIN rail mounted.

The open board 300B mounts to the subpanel, and has a remote dial for front panel mounting.

These controllers also have a 10Amp NO relay contact. Switching 2400W at 240Vac, single phase allows the 300 Series to directly control a small strip or cartridge heater...eliminating the expense of a contactor and the cost of wiring the contactor.

Specifications

Input

J Thermocouple Dual Scale

0-1000°F(0-500°C)

K Thermocouple Dual Scale

0-2000°F(0-1000°C)

Cold Junction Compensation

Sensor Break: Output de-energizes (contacts open)

Accuracy: Typically better than 0.5% of span.

Output

Relay SPDT 10 Amps@240Vac (300D)

Relay SPST 20 Amps@240Vac (300B)

Control Mode:

Proportional

Proportional Band 2.5% of span

Cycle Time 20 seconds

On/Off

Dead band 0.5% of span

Set Point Method:

Analog Potentiometer:

300B - Remote with 36" Lead

300D - Integral Dial

Set Point Accuracy: ±1% of scale

Set Point Resolution: 0.3% of scale

Common Mode Rejection: 60dB

Normal Mode Rejection: 120dB

Input Impedance: 20M ohms

Dielectric Strength: 2000VAC, 50/60 Hz, 1 minute

Vibration: 10-55Hz, Amplitude 1.0mm

Shock: 660 ft/S² (20g)

Line Voltage: 115/230VAC, ±10%, 50-60Hz field selectable

Ambient Operating Condition:

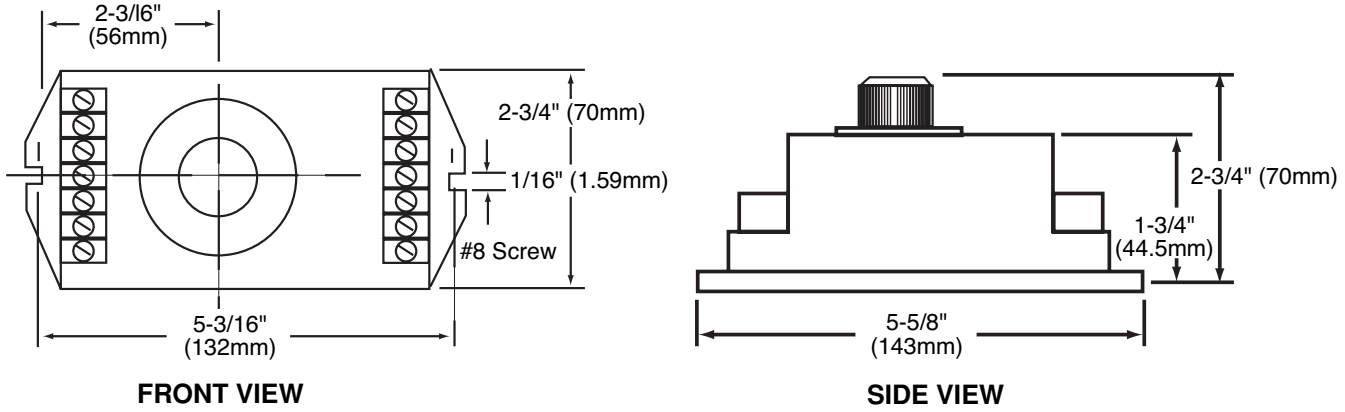
32-130°F (0-55°C), 0-90% RH, non-condensing

Weight: .75 lbs. (320gr)

300 Series Temperature Controller

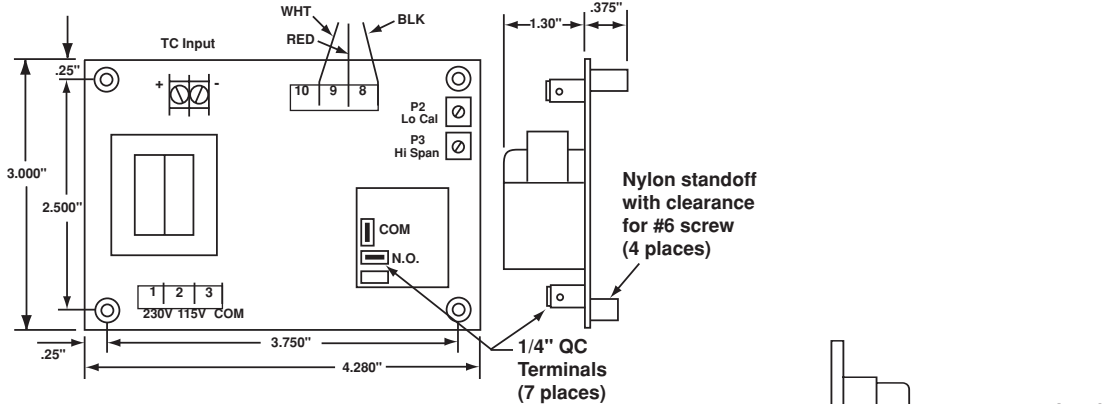
Mounting Dimensions:

300 D



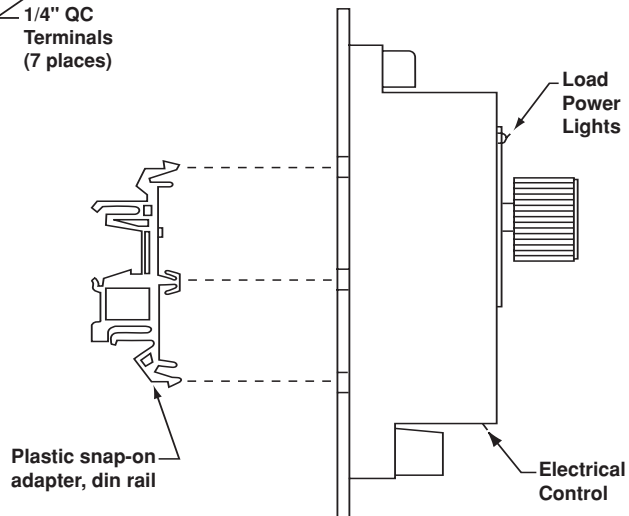
Remote SP Potentiometer & Dial (500 ohms)

300 B



Mounting

The 300B is surface mounted, see the dimension drawing for details. The 300D can be surface mounted or DIN rail mounted. DIN rail mounting clips are shipped with the 300D. Attach as shown in the figure. To install simply position the top set of rear clips over the top of the DIN rail. Then swing the bottom of the controller toward the rail applying pressure until the lower clips snap on the bottom of the DIN rail. To remove apply pressure to the top of the controller's base and move the bottom of the controller toward you. Then lift the top of the controller off the upper DIN rail.



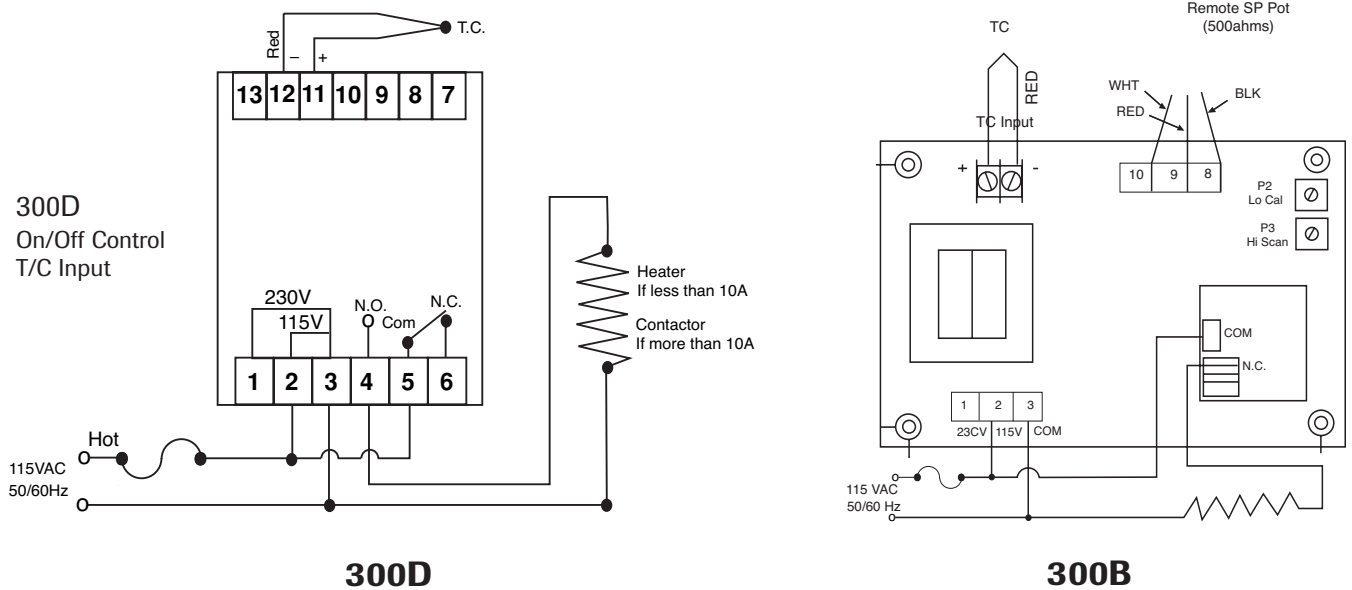
DIN Rail Mounting Clips for 300D

Caution

This controller must be mounted in an enclosure suitable for protection against normally expected operation environments.

300 Series Temperature Controller

Typical Wiring Diagram

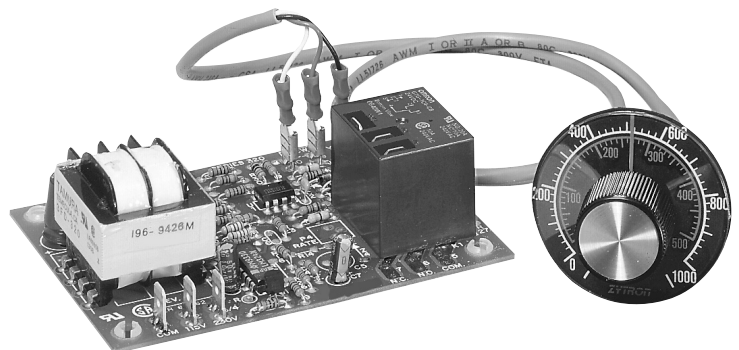


Wiring

Carefully follow the terminal diagram shown above. The power and load wiring should be 18 AWG or larger size. Be sure to observe that the ratings for voltage and current are not exceeded. All local and national electrical codes must be followed. The 300D connections are screw terminals. All 300B connections, except the thermocouple inputs, are 1/4" Fast-ON tabs. Use only the sensor type as indicated on the control and maintain correct polarity. THE RED THERMOCOUPLE LEAD ALWAYS CONNECTS TO THE NEGATIVE (-) TERMINAL. To reduce electrical noise, the thermocouple wire must be isolated from any power or heater wiring. Shielded thermocouple wire may be necessary in high noise environments or when lead lengths exceed 10 feet. Thermocouples are tip sensitive and must be in good mechanical contact with the load.

▲ WARNING

ELECTRIC SHOCK HAZARD. Any installation involving controls must be performed by a qualified person and must be effectively grounded in accordance with the National Electrical Code to eliminate shock hazard.



300B

300 Series Temperature Controller

Operation

The set point temperature is adjustable by turning the dial. On the 300D the red "POWER" LED will be on as long as power is applied to the unit. The "LOAD" LED indicates the status of the control relay. The relay is energized when the LOAD lamp is on. With the proportional controller the LOAD will constantly cycle on and off around set point.

Maintenance

No specific maintenance is required. However, it is recommended that all wiring be checked periodically for loose connections and damaged wires. Disconnect power to the panel before any maintenance is performed. Check wires and tighten connections.

Ordering Information

Chromalox Part Number	PCN	Control	Temperature Range	Input Type	Input Power
300D-20200	329703	On/Off	0-1000F (0-500C)	J T/C	120/240Vac
300D-20300	329711	On/Off	0-2000F (0-1000C)	K T/C	120/240Vac
300D-30100	329728	Proportional	0-1000F (0-500C)	J T/C	120/240Vac
300B-30400	329736	Proportional	0-1000F (0-500C)	J T/C	120/240Vac

Trouble Shooting

Experience has proven that many control problems are not caused by a defective instrument. Some of the common causes of failure are broken sensors, open fuses and poor wire connections. If these points have been checked and the control still does not function, it is suggested that the instrument be returned for inspection. Use adequate packing materials to prevent damage in shipment.

Custom Controllers

Custom temperature ranges, sensors and fixed set point units are available to meet your specific application needs.

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