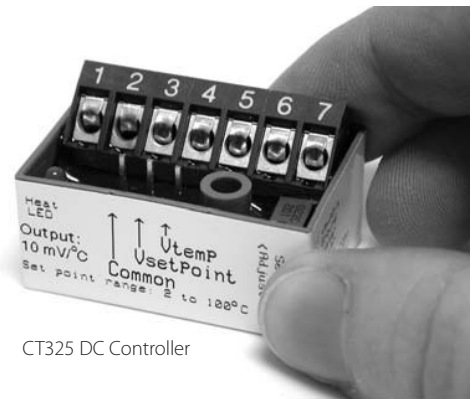


CT325 Miniature DC Temperature Controller



CT325 DC Controller

Overview

The CT325 Miniature DC Temperature Controller is designed for use with Minco Thermofoil™ heaters and RTD or thermistor sensors. It offers inexpensive on/off temperature control of your process or equipment with accuracy many times better than bimetal thermostats. Easily read and adjust the set point temperature using a voltmeter, then monitor the actual signal temperature at the other end. Operating from your 4.75 to 60 volt DC power supply, the controller can switch up to 4 amps power to the heater. A bright LED indicates when power is applied to the heater.

The entire unit is epoxy filled for moisture resistance, with a through-hole for a mounting bolt. A terminal block provides the power input, sensor input and heater output connections.

- Tight control in a small package means that enclosures or panel spaces are not required which allows successful portable device implementation
- Simple control without complicated programming can reduce set-up time
- Three-wire RTD connection cancels lead resistance for highly accurate temperature readings
- Solid state on-off control with adjustable set point improves durability compared to electro-mechanical devices
- Flexible heating control compliments all Minco Thermofoil™ Heaters for convenient off the shelf operation
- Uses standard 100 Ω or 1000 Ω platinum RTD or 50 k Ω thermistor sensor input
- Single DC power source provides power to the controller and heater up to 240 watts

Applications

- IV solutions for medical/surgical applications
- Military batteries
- Enclosures to maintain the temperature of electronics
- Ruggedized laptop LCDs and harddrives

Custom design options

Minco can customize the design of the CT325 for special applications. Specific temperature ranges, other sensor options, and special packaging are possible for volume OEM applications.

Specifications

Input: 100 Ω or 1000 Ω platinum RTD, 0.00385 $\Omega/\Omega/^\circ\text{C}$, 2 or 3-leads, or 50 k Ω NTC thermistor, 2-lead.

Setpoint range: 2 to 200 $^\circ\text{C}$ (36 to 392 $^\circ\text{F}$) for platinum RTD input. 25 to 75 $^\circ\text{C}$ (77 to 167 $^\circ\text{F}$) for thermistor input. Consult factory for other ranges.

Setpoint stability: $\pm 0.02\%$ of span/ $^\circ\text{C}$.

V_{temp} signal: 0.010 V/ $^\circ\text{C}$ over specified range.

Platinum RTD sensor		Thermistor sensor	
2 $^\circ\text{C}$	0.02 V	25 $^\circ\text{C}$	0.25 V
50 $^\circ\text{C}$	0.50 V	50 $^\circ\text{C}$	0.50 V
100 $^\circ\text{C}$	1.00 V	75 $^\circ\text{C}$	0.75 V
200 $^\circ\text{C}$	2.00 V		
Accuracy:	$\pm 1\%$ of span	Accuracy:	$\pm 2\%$ of span
Linearity:	$\pm 0.1\%$ of span	Linearity:	$\pm 2\%$ of span

Deadband: $\pm 0.1^\circ\text{C}$ (0.2 $^\circ\text{F}$).

Input power: 4.75 to 60 VDC.

Output: Open drain, 4 amps max. DC.

Leadwire compensation: (3-wire RTD) $\pm 0.06^\circ\text{C}/\Omega$ for 100 Ω or 1000 Ω platinum up to 25 Ω per leg.

Fault protection: Heater disabled on RTD short or thermistor open. No heater protection; external fuse is recommended.

Operating ambient temperature range: -40 to 70 $^\circ\text{C}$ (-40 to 158 $^\circ\text{F}$).

Relative humidity: 0 to 95% non-condensing.

Physical: Polycarbonate case, epoxy sealed for moisture resistance.

Weight: 1 oz. (28g).

Connections: Terminal block for wires AWG 22 to AWG 14.

Mounting: Mounting hole for #6 screw through or #8 thread forming screw.

Specifications subject to change

Sensor type	Code
100Ω platinum RTD (0.00385 TCR)	PD
1000Ω platinum RTD (0.00385 TCR)	PF
50 kΩ thermistor R25/R125 = 31.2	TF

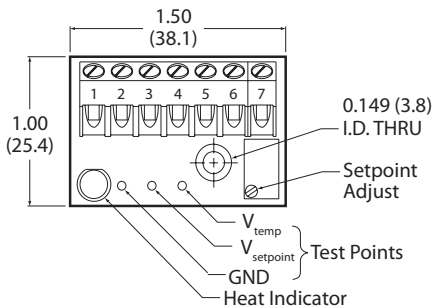
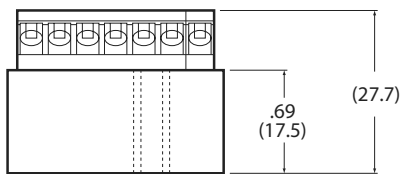
Note: 50kW thermistor sensor TS665TF is available on page 10-6

Specification and order options

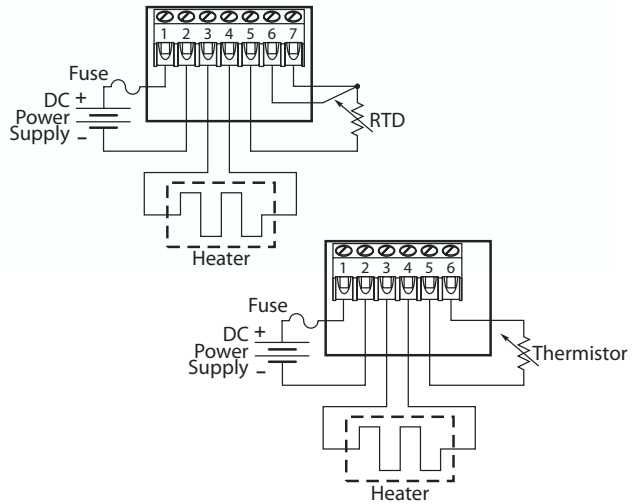
CT325	Model number
PD	Sensor type from table
1	Power supply: 1 = 4.75 to 10 VDC 2 = 7.5 to 60 VDC
C	Temperature range: A = 25 to 75°C (thermistor only) C = 2 to 200°C (RTD only)
1	Dead band: 1 = 0.1°C
CT325PD1C1 = Sample part number	

Specify and order products at:
www.minco.com/sensors_config

Dimensions in inches (mm)

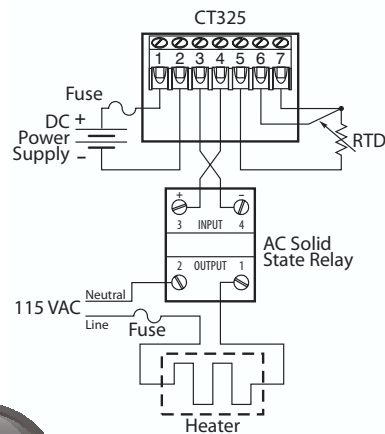


Wiring diagrams



AC powered heaters

The CT325 can provide the control signal to an external solid state relay to switch AC power. Use a DC supply voltage suitable for both the CT325 and SSR.



STOCKED PARTS

Model #	Sensor Type	Power Supply	Temp. Range	Dead Band	Stock Part #
CT325	PD	7.5 - 60 VDC	2 - 200°C	0.1°C	CT325PD2C1
CT325	PD	4.75 - 10 VDC	2 - 200°C	0.1°C	CT325PD1C1

Note: Available up to 10 pieces or contact Minco Customer Service

Specifications subject to change