

PTC-PCB Series

PCB-Mount Temperature Controller



FEATURES

- Two models: ± 5 or ± 10 A output current
- Single supply operation: 5 to 30 VDC
- Stability of 0.0012°C
- Use with a variety of temperature sensors
- Failsafe temperature default circuit in case remote temperature setpoint signal is lost
- Versatile onboard adjustments
 - » Remote or onboard setpoint control
 - » Onboard or TTL-compatible remote enable/disable
 - » Current limit trimpot
 - » Adjustable sensor bias current
 - » PI Control with “Smart Integrator”, adjustable proportional gain
- Monitor Outputs
 - » Setpoint voltage
 - » Actual sensor voltage
- Use with TECs or resistive heaters
- PTCEVAL evaluation board speeds setup and prototyping efforts
- Factory modifications are available to fit the controller to your application

TIME-TESTED RELIABILITY

The PTC Series PCB-Mount Temperature Controllers are based on our long-proven PTC-CH controllers, and deliver the stable performance and long-term reliability you expect from Wavelength Electronics.

PTC Series controllers are found in such diverse applications as particle and droplet measurement, communication systems, manufacturing test systems, and more.

POWERFUL AND EASY TO USE

The PTC controllers operate from a single power supply between 5 V and 30 V, and two models drive ± 5 amps or ± 10 amps to a Peltier thermoelectric cooler or a resistive heater. These controllers mount directly to your circuit board.

PTC controllers interface with a variety of temperature sensors, and the bias current is adjustable in order to maximize controller sensitivity and stability for your application.

You can use the PTCEVAL board to quickly configure the PTC controller for prototyping. Using the same controller for development and production helps guarantee there are no surprises when it's time to release the final design.

PRACTICAL FEATURES FOR VERSATILITY AND SAFETY

Valuable features make your product more robust to real-world conditions and minimize your electronics overhead:

- Onboard controls, combined with the ability to remotely control the PTC allows maximum application versatility.
- Built-in heatsink and fan simplifies thermal management of the controller.
- If the remote temperature setpoint signal is lost, the controller defaults to a standard “safe” temperature setpoint (25°C when a 10 k Ω thermistor is used). The safe temperature can be changed at the factory; call for details.
- An onboard trimpot is used to set the output current limit to prevent over-driving the TEC, and helps protect your load from thermal runaway situations.
- Proportional gain is easily adjusted with an onboard trimpot.
- Low temperature-coefficient design remains stable across a wide range of ambient conditions.

COUNT ON WAVELENGTH ELECTRONICS

Our experienced Sales Engineers are available to help you decide which temperature controller is right for your application. Call today or visit our website to find out how Wavelength Electronics can help you to be successful.

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PTC-PCB CONTROLLER SPECIFICATIONS

CONTROLLER OUTPUT CURRENT	PTC5000	PTC10000	UNIT	NOTE
Max Output Current	± 5.0	± 10.0	A	
Short Term Stability, 1 hr	< 0.0012		°C	Off-ambient, 10 kΩ thermistor at 25°C
Short Term Stability, 1 hr	< 0.0014		°C	On-ambient, 10 kΩ thermistor at 25°C
Long Term Stability, 24 hr	< 0.002		°C	Off-ambient, 10 kΩ thermistor at 25°C
Temperature Coefficient	< 100		ppm / °C	
Compliance Voltage	$V_s - 1.7$	$V_s - 3$	V	$V_s > 5.3$ VDC
External Setpoint Range (V_{EXT})	0 to 5		V	
TEMPERATURE SENSORS	PTC5000	PTC10000	UNIT	NOTE
Sensor Compatibility	Thermistor, Linear, RTD			
Sensor Bias Current Range	0.01, 0.1, 1, 10		mA	
Sensor Voltage Range	0 to ($V_s - 1.5$) 0 to 5.5		V	$V_s < 7$ VDC $V_s = 7$ to 30 VDC
Setpoint vs. Actual Accuracy	1		mV	
POWER SUPPLY REQUIREMENTS	PTC5000	PTC10000	UNIT	NOTE
Controller Supply Voltage (V_s)	5 to 30		VDC	
Quiescent Current	220		mA	
Maximum Internal Power Dissipation	110		W	
ABSOLUTE MAXIMUM RATINGS	VALUE	UNIT	NOTE	
Controller Supply Voltage (V_s)	5 to 30	VDC		
Case Operating Temperature	-40 to 85	°C		
Case Storage Temperature	-65 to 125	°C		
Weight	11.3	oz	320.4 g	
Size	3.85 x 2.15 x 2.32	in	97.7 x 54.7 x 58.9 mm	

Additional specifications are available in the product datasheet; download at
www.teamWavelength.com/products/product.asp?part=200

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
PTC5000	5.0 A Temperature Controller
PTC10000	10.0 A Temperature Controller
PTCEVAL	Evaluation board for PTC5000 and PTC10000

Free, effective, and responsive technical support is available to simplify integration of Wavelength products into your OEM design. Standard product can be modified to meet your unique application requirements.

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