

300B Series Temperature Controllers



- Ultra-stable temperature control ($\pm 0.001^\circ\text{C}$) over a broad temperature range
- TEC is compatible with the most widely-used temperature sensors: thermistors, and AD590/592 and LM135/335 IC sensors
- Two models are offered, covering a wide range of output powers

The New 300B Series Temperature Controllers offer a combination of features, performance, and value that is unmatched by other temperature controllers.

Three operating modes are user selectable: constant R (thermistor), constant T (IC sensors), or constant I_{TE} (TE cooler), while delivering output power of 17.5 W or 55 W.

Quiet, safe output current results from P-I-D control circuitry with complete flexibility for adjustment through the Newport LDD/TEC Application software (included) or user developed programs. The PID control algorithm achieves optimal stability and settling performance along with an I_{TE} current limit setting protects TE coolers from damage, regardless of operating mode.

Specifications

	Model 325B	Model 350B
Output		
Type	Bipolar, constant current source	
TEC Control Loop Type	Hybrid P-I-D	
Maximum Current (A)	± 2.5	± 5
Compliance Voltage (V)	< 7	< 11
Available Output Power (W)	17.5	55
Current Limit		
Range (A)	0–2.52	0–5.05
Accuracy (mA)	± 3	± 5
Ripple/Noise (rms) (mA)	< 0.03	
Stability		
Short-Term Stability (1 h) ($^\circ\text{C}$)	0.001	
Long-Term Stability (24 h) ($^\circ\text{C}$)	0.005	
Display		
Range		
Temperature ($^\circ\text{C}$)	-50.0 to +150.0	
Resistance (10 μA) ($\text{k}\Omega$)	0.1–200	
Resistance (100 μA) ($\text{k}\Omega$)	0.01–20.00	
TE Current (A)	-2.50 to +2.50	-5.00 to +5.00
Resolution		
Temperature ($^\circ\text{C}$)	0.1	
Resistance (10 μA) (Ω)	100	
Resistance (100 μA) (Ω)	10	
TE Current (mA)	10	
Accuracy		
Temperature ($^\circ\text{C}$)	± 0.1	
Resistance (10 μA)	$\pm 100\Omega$	
Resistance (100 μA)	$\pm 10\Omega$	
TE Current (mA)	± 10	

Additional Benefits

- Preset display lets you adjust operating setpoint before switching the output on
- Low noise, bipolar current output - $< 30\mu\text{A}$
- Wide TEC temperature range from -50 to $+150^\circ\text{C}$
- Units are displayed in $^\circ\text{C}$ when using IC sensors and optionally with thermistors
- USB 2.0 interface for remote control

Call Newport's Application Sales Engineers to help you determine which Temperature Controller best meets your LD Cooling requirements.

Temperature Sensors

Sensor Type	Thermistor NTC 2-wire	AD592CN	LM335AZ
Temperature Control Resolution (°C)	0.01	0.1	0.1
Temp. Sensor Control Accuracy (at 25°C) (°C)	±0.2	±0.5	±3.0
Sensor Bias	10/100 µA	+12 V	1 mA

Specifications

Power Requirements	100/120/220/240 VAC, ±10%, 50–60 Hz
Chassis Ground	4 mm banana jack
Size (H x W x D) [in. (mm)]	3.5 (88) x 8.5 (215) x 12.6 (320)
Weight [lb (kg)]	8.9 (4.1)
Operating Temperature	0°C to 50°C
Storage Temperature Range	-40°C to + 70°C
Relative Humidity, Storage	<90% humidity non-condensing
Connectors	
Output Connectors TE Module and Sensor	15-pin female D-sub
Interface	USB

Ordering Information

Model	Description
325B	Temperature Controller (17.5 W)
350B	Temperature Controller (55 W)

Accessories

Model	Description
300-02 ⁽¹⁾	Temperature Controller Cable
300-04 ⁽¹⁾	TEC/Mount Cable
300-16	10.0 kΩ Thermistor (±0.2°C)
300-22	AD592CN IC Sensor (-45°C to +125°C Range)
35-RACK	Rack Mount Kit

1) Please see page 347 for cable diagrams.

Related Products

Newport's 300B Series Temperature Controllers are complemented in performance and value by our 500B Series Laser Diode Drivers see page 330 and our complete line of Temperature Controlled Mounts and Telecom Mounts for laser diodes.