

5300 SERIES

TECSOURCE TEMPERATURE CONTROLLER



The 5300 Series TECSource provides precision temperature control with multiple sensor support, an integrated fan power supply, and up to 192 W of TEC power. This temperature controller powers both TEC and resistive heater modules and is flexible enough to meet the most demanding temperature control applications.



EXCELLENT STABILITY

The 5300 offers $\pm 0.004^{\circ}\text{C}$ temperature stability over 1 hour, and only $\pm 0.01^{\circ}\text{C}$ fluctuation over 24 hours.



AUTO-TUNE AUTOMATIC PID CALCULATION

The 5300 automatically calculates PID parameters for your mount.



FULLY ADJUSTABLE PID VALUES

Every TECSource has eight factory-set gain settings, along with the option to choose your own.



INTEGRATED FAN POWER SUPPLY

Provides 4.5 – 12 Volts DC to power a laser mount cooling fan.



SIMPLE USER INTERFACE

Easy to Read, High Contrast VFD Display with all messages and settings in plain English.

View All 4 At Once:

- Temperature Set Point
- Current
- Actual Temperature
- Voltage

AT-A-GLANCE

Power Ranges

- ▶ 60 Watt / 5 Amp / 12 Volt
- ▶ 120 Watt / 10 Amp / 12 Volt
- ▶ 192 Watt / 8 Amp / 24 Volt
- ▶ Custom configurations

Works With

- ▶ Thermistor
- ▶ RTD (2 or 4-wire)
- ▶ LM-335
- ▶ AD590

Heat & Cool

- ▶ TEC Modules & Resistive Heaters

Remote Operation via PC

- ▶ Use your existing control code.
Our command set is compatible with other manufacturers.
- ▶ USB / RS-232 Connections



FOUR-WIRE RTD SENSING

The cable and connectors in common 2-wire RTD configurations can contribute significant measurement error. For the most accurate temperature control, choose a temperature controller that supports four-wire sensing.

The 5300 TECSource brings precision control to your laser application.

5300 SPECIFICATIONS

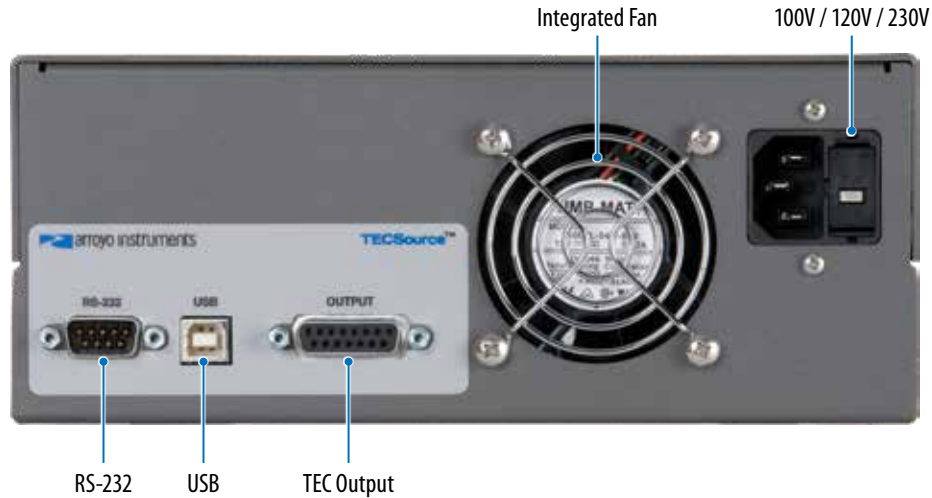
	5305	5310	5300-08-24	
Drive Channel	Current			
	Range (A)	±5	±10	±8
	Compliance Voltage (V)	±12	±12	±24
	Max Power (W)	60	120	192
	Resolution (A)	0.01	0.01	0.01
	Accuracy (± [% set point + mA])	0 + 30	0 + 60	0 + 60
	Noise/Ripple (mA, rms)	< 5	< 15	< 15
	Temperature Control			
	Range (°C) ¹	-99 to 250		
	Resolution (°C)	0.01		
	Thermistor Accuracy (± °C) ²	0.05 ³		
	AD560 Accuracy (± °C) ²	0.05		
	LM335 Accuracy (± °C) ²	0.05		
	RTD Accuracy (± °C) ²	0.05		
	Short Term Stability (1hr) (± °C) ⁴	0.004		
Short Term Stability (24hr) (± °C) ⁴	0.01			

Measurement Channels	Current			
	Resolution (mA)	10		
	Accuracy (± [% reading + mA])	0 + 30	0 + 60	0 + 60
	Voltage			
	Resolution (mV)	10		
	Accuracy (± [% reading + V])	0 + 0.05		
	Sensor			
	10µA Thermistor			
	Range (kΩ)	0.1 – 450		
	Resolution (kΩ)	0.01		
	Accuracy (± [% reading + kΩ])	0.05 + 50		
	100µA Thermistor			
	Range (kΩ)	0.05 – 45		
	Resolution (kΩ)	0.001		
	Accuracy (± [% reading + kΩ])	0.05 + 5		
	LM335			
	Bias (mA)	1		
	Range (mV)	1730 – 4730		
	Resolution (mV)	0.1		
	Accuracy (± [% reading + mV])	0.3 + 1		
	AD590			
	Bias (V)	4.5		
	Range (µA)	173 – 473		
	Resolution (µA)	0.01		
	Accuracy (± [% reading + µA])	0.03 + 0.1		
	RTD			
	Range (Ω)	20 – 192		
	Resolution (Ω)	0.01		
	Accuracy (± [% reading + Ω])	0.03 + 0.1		
	Current Limit			
Resolution (mA)	10			
Accuracy (± mA)	50			

General	Display Type	2x20 VFD		
	TEC Connector	DB-15, female		
	Fan Supply	4 – 12V, 350 mA max		
	Computer Interface	USB 2.0 Full Speed (Type B), RS-232 (DB-9, male)		
	Power	100V / 120V / 230V, 50 / 60 Hz		
	Size (H x W x D) [inch(mm)]	3.5 (90) x 8.5 (215) x 12 (305)		
	Weight [lbs (kg)]	6.2 (2.8)	7.4 (3.4)	7.4 (3.4)
	Operating Temperature	+10 °C to +40 °C		
	Storage Temperature	-20 °C to +60 °C		

1. Software limits. Actual range dependent on sensor type and system dynamics.
2. Accuracy figures are the additional error the 5300 adds to the measurement, and does not include the sensor uncertainties.
3. 25°C, 100 µA thermistor.
4. Stability measurements done at 25°C using a 10 kΩ thermistor on the 100 µA setting. The number is ½ the peak-to-peak deviation from the average over the measurement period.

REAR VIEW



ARROYO CONTROL



Control any Arroyo laser driver or temperature controller directly from your PC. Simply connect to your Arroyo device via USB or RS-232 and gain direct access to settings, device limits, and adjustments from an easy-to-use Windows interface. You can even connect to multiple instruments at the same time.

Download ArroyoControl for free from www.arroyoinstruments.com.

LabView drivers available.



Ordering Information:



800 Village Walk #316
Guilford, CT 06437
Ph: 203-401-8093

Email orders to: sales@xsoptix.com
Fax orders to: 800-878-7282

ACCESSORIES



1401-RM-1

5300 SERIES 2U RACK MOUNT KIT, 1 UNIT

This rack mount kit will mount any 5300 Series TECSource, 6300 ComboSource, or 4300 Series LaserSource in 2U of rack space. The unit can be positioned to the left or right side of the rack space, depending on how you mount the hardware.



1401-RM-2

5300 SERIES 2U RACK MOUNT KIT, 2 UNITS

This rack mount kit will mount any 5300 Series TECSource, 6300 ComboSource, or 4300 Series LaserSource side-by-side in 2U of rack space.