arroyo instruments

7254 SERIES MULTISOURCE

MULTICHANNEL TEMPERATURE CONTROLLER

The 7254 MultiSource temperature controllers feature the same precision and protection found in our benchtop products, giving you a seamless transition from benchtop to high density. Excellent stability, high precision, and fully adjustable PID control provides flexibility to fit into a wide range of applications, and Ethernet and USB provide easy computer connectivity options. Each of the four channels has fully independent set points, limits, and operating parameters.

EXCELLENT STABILITY

The 7254 offers ± 0.004°C temperature stability over 1 hour, and only ± 0.01°C fluctuation over 24 hours.

AUTO-TUNE AUTOMATIC PID CALCULATION

The 7254 automatically calculates PID parameters for your mount.

FULLY ADJUSTABLE PID VALUES

Eight factory-set gain settings, along with the option to choose your own.

INTEGRATED FAN POWER SUPPLY

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

ETHERNET INTERFACE

The built-in Ethernet interface allows the 7254 to be easily accessed via a network and intergated into larger system applications.

SIMPLE USER INTERFACE

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

View All At Once:

- **Temperature**
- **Current**
- **Voltage**

AT-A-GLANCE

Power Ranges (per channel):

- 282 Watt / 6 Amp / 56 Volt
- 230 Watt / 10 Amp / 28 Volt
- 225 Watt / 15 Amp / 14 Volt

Works With

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

Heat & Cool

- Bipolar Outputs
- TEC Modules & Resistive Heaters

Remote Operation via PC

- Use your existing control code. Our command set is compatible with other manufactuers.
- USB
- Ethernet

DIGITAL CONTROL LOOP

The digital control loop in the 7254 uses temperature - not sensor resistance - as its control variable. That means variations in sensor sensitivity, such as those seen in thermistors, will not affect performance.

Achieve superior temperature accuracy with the 7254.

7254 MULTISOURCE TEMPERATURE CONTROLLER SPECIFICATIONS

		7254-06-56	7254-10-28	7254-15-14
Drive Channel	**Current**			
	Range (A)	±6	±10	±15
	Compliance Voltage (V)	±56	±28	±14
	Max Power (W)	282	230	225
	Resolution (A)	0.01	0.01	0.01
	Accuracy (± [% set point + A])	0.5 + 0.01	0.5 + 0.01	0.5 + 0.01
	Noise/Ripple (mA, rms)	< 12	< 15	< 20
	Temperature Control			
	Range (°C)[1]	-99 to 250		
	Resolution (°C)	0.001		
	Thermistor Accuracy (± °C)[2]	0.05[3]		
	Short Term Stability (1hr) (± °C)[4]	0.004		
	Short Term Stability (24hr) (± °C)[4]	0.01		
Measurement Channels	**Current**			
	Resolution (mA)	10		
	Accuracy (± mA)	10	15	20
	Voltage			
	Resolution (mV)	10		
	Accuracy (± V)	0.05		
	Sensor			
	10µA Thermister			
	Range (kΩ)	0.1 – 450		
	Resolution (kΩ)	0.01		
	Accuracy (± [% read + kΩ])	0.05 + 0.05		
	100µA Thermister			
	Range (kΩ)	0.05 – 45		
	Resolution (kΩ)	0.001		
	Accuracy (± [% read + kΩ])	0.05 + 0.005		
	LM335			
	Bias (mA)	1		
	Range (mV)	1730 – 4250		
	Resolution (mV)	0.1		
	Accuracy (± [% read + mV])	0.3 + 1		
	RTD			
	Range (Ω)	20 – 192		
	Resolution (Ω)	0.01		
	Accuracy (± [% read + Ω])	0.3 + 0.1		
	Current Limit			
	Resolution (A)	0.1		
	Accuracy (± A)	0.2		
General	Display Type	2x20 VFD		
	TEC Connector	4 x DB-15, female		
	Fan Supply	8 - 12V, 350mA max		
	Computer Interface	USB 2.0 Full Speed and Ethernet		
	Power	Universal, 90V to 240V, 50/60 Hz		
	Size (H x W x D) [inches (mm)]	3.5 (89) x 19 (483) x 14.76 (375)		
	Weight [lbs (kg)]	11.6 (5.3)		
	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 7254 adds to the measurement, and does not include the sensor uncertainties.
3. At 25°C, 100µA thermister
4. Stability measurements done at 25°C using a 10 kΩ thermistor on the 100µA setting. The number is ½ the peak-to-peak deviation from the average over the measurement period.

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