

5300-08-24 Supplemental Specifications

The table below documents the specifications of the **5300-08-24 TECSource**. The **5300-08-24** is based on the **5310 TECSource**, but with a more powerful supply capable of providing the higher compliance voltage.

All values relate to a one-hour warm-up period.

| Description | 5300-08-24 |
|---|-------------------|
| Drive Channel | |
| Current | |
| Range (A) | 8 |
| Compliance Voltage (V) | 24 |
| Max Power (W) | 192 |
| Resolution (A) | 0.01 |
| Accuracy (\pm [% set point + mA]) | 0 + 60 |
| Noise/Ripple (mA, rms) | < 15 |
| Temperature Control | |
| Range ($^{\circ}\text{C}$) ¹ | -99 to 250 |
| Resolution ($^{\circ}\text{C}$) | 0.01 |
| Thermistor Accuracy (\pm $^{\circ}\text{C}$) ² | 0.05 ³ |
| AD560 Accuracy (\pm $^{\circ}\text{C}$) ² | 0.05 |
| LM335 Accuracy (\pm $^{\circ}\text{C}$) ² | 0.05 |
| RTD Accuracy (\pm $^{\circ}\text{C}$) ² | 0.05 |
| Short Term Stability (1hr) (\pm $^{\circ}\text{C}$) ⁴ | 0.004 |
| Short Term Stability (24hr) (\pm $^{\circ}\text{C}$) ⁴ | 0.01 |
| Measurement Channels | |
| Current | |
| Resolution (mA) | 10 |
| Accuracy (\pm [% reading + mA]) | 0 + 60 |
| Voltage | |
| Resolution (mV) | 10 |
| Accuracy (\pm [% reading + V]) | 0 + 0.05 |
| Sensor | |
| 10 μA Thermistor | |
| Range (k Ω) | 0.1 – 450 |
| Resolution (k Ω) | 0.01 |
| Accuracy (\pm [% reading + k Ω]) | 0.05 + 50 |
| 100 μA Thermistor | |
| Range (k Ω) | 0.05 – 45 |
| Resolution (k Ω) | 0.001 |
| Accuracy (\pm [% reading + k Ω]) | 0.05 + 5 |
| LM335 | |
| Bias (mA) | 1 |
| Range (mV) | 1730 – 4730 |

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 $^{\circ}\text{C}$, 100 μA thermistor

⁴ Stability measurements done at 25 $^{\circ}\text{C}$ using a 10k Ω thermistor on the 100 μA setting. The number is $\frac{1}{2}$ the peak-to-peak deviation from the average over the measurement period.

| | |
|---|---|
| Resolution (mV) | 0.1 |
| Accuracy (\pm [% reading + mV]) | 0.3 + 1 |
| <i>AD590</i> | |
| Bias (V) | 4.5 |
| Range (μ A) | 173 – 473 |
| Resolution (μ A) | 0.01 |
| Accuracy (\pm [% reading + μ A]) | 0.03 + 0.1 |
| <i>RTD</i> | |
| Range (Ω) | 20 – 192 |
| Resolution (Ω) | 0.01 |
| Accuracy (\pm [% reading + Ω]) | 0.03 + 0.1 |
| Current Limit | |
| Resolution (mA) | 10 |
| Accuracy (\pm mA) | 50 |
| Other | |
| Fan Supply | 4 – 12V, 350mA max |
| TEC Connector | Female DB-15 |
| Display Type | 2x20 VFD |
| Computer Interface | USB 2.0 Full Speed RS-232 (DB-9, male) |
| Power | 100V / 120V / 230V 50/60 Hz |
| Size (H x W x D) [inches (mm)] | 3.5 (90) x 8.5 (215) x 11 (280) |
| Operating Temperature | +10°C to +40°C |
| Storage Temperature | -20°C to +60°C |