Elliot Scientific E1100 Piezo Controller

The E1100 Piezo Controller is an open loop, three channel amplifier suitable for driving low voltage (up to 150 V) piezo actuators and stacks. The E1100 has been especially designed to incorporate the latest technologies, and combines low noise and outstanding stability with a high power output.

This makes it ideal for open loop, high resolution control of piezoelectric devices, in particular, the Elliot|Martock MDE123 and MDE125 Piezo-driven Flexure Stages.

The E1100 is equipped with a front panel display and three methods per channel for input voltage control.

The rear panel features the Windows™-compatible USB port for 16-bit digital voltage commands. Software drivers, LabVIEW examples, a LabVIEW tutorial, and C# graphic user interface are all included. LabVIEW and C# examples are open source and can be used as a starting point for homebrew routines. The rear panel also contains the three outputs as BNC connectors for interfacing to devices for precision motion applications.

Although designed mainly for benchtop use, a rack mount option is available.

E1100 Specifications	
Analogue Input	0 to +10 V
Command Signal Input Impedance	10 kΩ
Gain (0-10 V input)	15 V_{out}/1 V_{in}
Amplifier Output Voltage	0 to -150 V
Maximum Drive Current (Continuous)	50 mA
Power Output (Continuous)	10 W
Output Impedance	10 Ω
Output Noise	< 50 μV_{rms} (1-100 Hz)
Output Short Circuit Protection	Yes
Steady State Power Consumption	< 0.5 W
-3dB Bandwidth	
No Load (200 mV_{p-p} input)	5 kHz
No Load (10 V_{p-p} input)	5 kHz
1.0 µF Load (Current limited)	550 Hz
Stability	< 0.01% over 16 hours
General	
AC Input Voltage	100-240 V_{AC}
AC Input Frequency	60/50 Hz
AC Power (max.)	65 W
DC Input (4-pin DIN)	12 V @ 5 A
Analog Input Voltage Connector*	BNC (3 x front panel)
Input Voltage Control #1*	Front panel potentiometer (3)
Input Voltage Control #2*	USB (rear panel)
High Voltage Output Connector	BNC (3 x rear panel)
Operating Temperature	5 to 40 °C
Dimensions (mm)	254 x 213 x 89

* One or more of these methods can be employed, however all inputs are summed together to produce the 0 to 150 V output.

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