

E-664.S3

NanoCube™ Controller



E-664 controller for P-611 NanoCube™ XYZ NanoPositioning system

- 3 x 14 W Peak Power
- Position Servo-Control
- For P-611 NanoCube™ NanoPositioning Systems

The E-664 is a bench-top amplifier & position servo-controller that was especially designed for the P-611 NanoCube™ XYZ NanoAlignment system (see pages 2-36 and 8-16). Each of the three integrated low-noise amplifiers can output and sink a peak current of 140 mA and an average current of 60 mA. The position servo-controllers work with strain gauge sensors. The E-664 can be operated in the following four ways:

- I. **Open-Loop Manual Operation:** Output voltage can be set by a 10-turn, DC-offset potentiometer in the range of 0 to 100 V.
- II. **Open-Loop External Operation (amplifier mode):** Output voltage is controlled by an analog signal applied to the BNC input ranging from -2 to +12 V. Multi-

plying by the gain factor of 10, an output voltage range of -20 to +120 V results. The DC-offset potentiometer adds a DC bias to the input, allowing continuous shifting of the input voltage range between -2 V to +12 V and -12 V to +2 V (see page 6-40).

- III. **Closed-Loop Manual Operation (position control mode):** Displacement of the PZTs can be set by a 10-turn, DC-offset potentiometer in the range of zero to nominal displacement.
- IV. **Closed-Loop External Operation:** Displacement of the PZT is controlled by an analog signal in the range of 0 to +10 V applied to the BNC input.

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The controller is calibrated in such a way that 10 V corresponds to maximum nominal displacement and 0 V corresponds to 0 displacement. The DC-offset potentiometer can be used to add an offset voltage of 0 to 10 V to the input signal. On-Target and Overflow status for each channel are displayed by 6 LEDs and can be accessed through a 14-pin, rear-mount I/O connector that also provides analog control input and sensor monitor output lines.

Technical Data

Models	E-664.S3
Function	Power amplifier & sensor/position servo-control of P-611 NanoCube™ NanoPositioning systems
Channels	3
Amplifier	
Maximum output power	14 W (see page 6-40)
Average output power	6 W
Peak output current < 5 ms	140 mA
Average output current > 5 ms	60 mA
Current limitation	Short-circuit proof
Voltage gain	10 ±0.1
Polarity	Positive
Control input voltage	-2 to +12 V
Output voltage	-20 to 120 V
DC offset setting	0 to 100 V with 10-turn pot.
Input impedance	100 kΩ
Display	3 x 3 1/2-digit, LED
Control input sockets:	BNC (rear)
PZT voltage output socket	25 pin sub-D on rear
Dimensions	235 x 103 x 288 mm
Weight	3.0 kg
Operating voltage	90-120 / 220-240 VAC, 50-60 Hz (linear P/S)
Position Servo-Control	
Sensor type	Strain Gauge
Servo characteristics	P-I (analog) + notch filter
Sensor socket	25 pin sub-D on rear (same as PZT voltage)
Sensor monitor output socket	BNC
Additional I/O	14 pin connector on rear for On-Target and Overflow status and control in and sensor monitor out

Ordering Information

E-664.S3
 NanoCube™ Controller, Benchtop
 Custom Designs
 for Volume Buyers