

## E-663 Three-Channel Piezo Driver For Open-Loop Piezo Systems and Actuators Without Position Sensors



E-663.00 bench-top device

- 3 Independent Channels
- 3 x 14 W Peak Power
- Output Voltage Range -20 to 120 V
- High-Bandwidth Analog Control Interface
- Precision 10-Turn Potentiometers for Manual Control
- 3 LED Voltage Displays

The E-663.00 is a piezo driver module for low-voltage piezo actuators and positioners. It contains three independent amplifiers that can output and sink a peak current of 140 mA in the -20 to +120 V voltage range. Three 3½-digit LED displays show the output voltage of each individual channel.

### Voltage-Controlled Piezo Operation

This precision piezo driver is designed for voltage-controlled piezo operation in both dynamic and static modes. In

open-loop (voltage-controlled) piezo operation the amplifier output voltage is determined by an analog signal at the Control Input optionally combined with the DC-offset potentiometer. Voltage controlled operation (in contrast to position-controlled operation) is used in applications where the fastest possible response and very high resolution with maximum bandwidth are essential, and/or when commanding and reading the target position in absolute values is either not important or accomplished

with an external feedback loop. (see p. 2-104) The precision 10-turn potentiometer can also be used alone to set the output voltage manually.

### Remote Control via Computer Interface

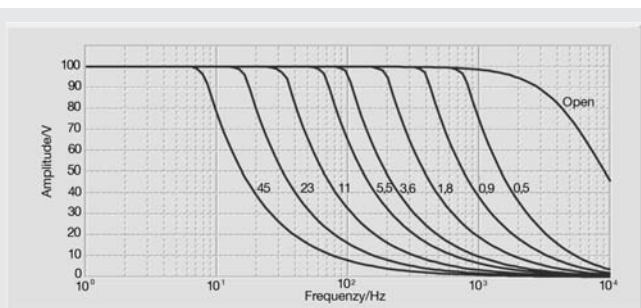
Optionally, digital control via an external D/A converter is possible. For several D/A boards from National Instruments, PI offers a corresponding LabVIEW driver set which is compatible with the PI General Command Set (GCS), the command set used by all PI controllers. A further option includes the patented HyperBit™ technology providing enhanced system resolution.

### Ordering Information

**E-663.00**  
Piezo Amplifier, 3 Channels,  
-20 to 120 V, Bench-Top

### Technical Data

Model	E-663.00	Tolerance
Function	Power amplifier	
Channels	3	Max.
<b>Amplifier</b>		
Input voltage	-2 to +12 V	
Min. output voltage	-20 to 120 V	
Peak output power per channel	14 W	Max.
Average output power per channel	6 W	Max.
Peak current per channel	140 mA	<5 ms
Average current per channel	60 mA	>5 ms
Current limitation	Short-circuit-proof	
Noise, 0 to 100 kHz	<1 mV <sub>RMS</sub> <10 mV <sub>pp</sub>	
Voltage gain	10 ±0.1	
Input impedance	100 kΩ	
<b>Interfaces and operation</b>		
Piezo connector	3 x LEMO ERA.00.250.CTL	
Control Input socket	3 x BNC	
Display	3 x 3 1/2 -digit, LED	
DC-Offset	3 x 10-turn pots, adds 0 to 10 V to Control In	
<b>Miscellaneous</b>		
Operating temperature range	5 to +50 °C	
Dimensions	236 x 88 x 273 mm + handles	
Mass	4.6 kg	
Operating voltage	90–120 / 220–240 VAC, 50–60 Hz (linear power supply)	
Power consumption	60 W	Max.



E-663: operating limits with various PZT loads (open-loop), capacitance is measured in μF