

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

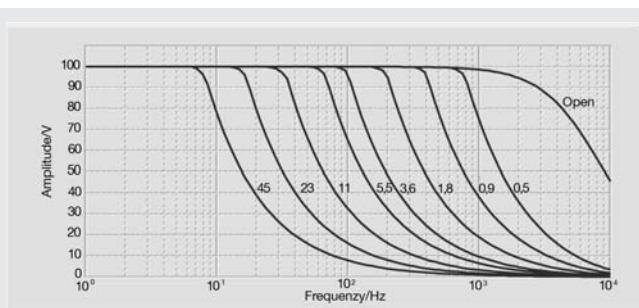
Optionally, digital control via an external D/A converter is possible. For several D/A boards from National Instruments, PI offers a corresponding LabVIEW driver set which is compatible with the PI General Command Set (GCS), the command set used by all PI controllers. A further option includes the patented 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. |
| Amplifier | | |
| 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 _{RMS} <10 mV _{pp} | |
| Voltage gain | 10 ±0.1 | |
| Input impedance | 100 kΩ | |
| Interfaces and operation | | |
| 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 | |
| Miscellaneous | | |
| 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