

E-650 Piezo Driver for Multilayer Bender Actuators OEM Module / Bench-Top



- Specifically Designed to Drive Multilayer Bimorph Actuators Without Position Sensor
- Bench-Top and OEM Versions
- Up to 18 W Peak Power
- Voltage Display

E-650.00 is a bench-top piezo driver, especially designed for low-voltage, multilayer piezo bender actuators (bimorphs) such as the PL112 to PL140 (see p. 1-94). It is equipped with a special circuit that can provide one fixed voltage and a variable voltage in the range of 0 to 60 V for differential piezo oper-

ation. The driver can output and sink a peak current of 300 mA. A 3½-digit display shows the piezo voltage.

Voltage-Controlled Piezo Operation

This precision piezo driver is designed for voltage-controlled piezo operation in both dynam-

ic and static mode. Its output voltage is determined by the analog control signal at the BNC Control Input socket, 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 are essential, and/or when commanding and reading the target position in absolute values is either not important or accomplished with external position feedback.

The precision 10-turn potentiometer can also be used alone to set the output voltage manually.

Compact OEM Version

The E-650.OE is the OEM version of the E-650.00. It provides peak output power of 8 W. The electronics are fully enclosed in a metal case. All inputs and outputs are via 8 header pins located on the bottom of the module. The E-650.OE is not intended for manual operation.

Ordering Information

E-650.00
Piezo Driver for Bender Actuators, 0 to 60 V, Bench-Top

E-650.OE
Piezo Driver Module for Bender Actuators, 0 to 60 V, OEM Version

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.

Technical Data

Model	E-650.00	E-650.OE
Function	Power amplifier	Power amplifier
Amplifier		
Input voltage	0 to +10 V	0 to +10 V
Output voltage	0 to 60 V, plus fixed reference voltage of 60 V	0 to 60 V, plus fixed reference voltage of 60 V
Peak output power	18 W	8 W
Average output power	6 W	4 W
Peak current, < 5ms	300 mA	140 mA
Average current, >5 ms	100 mA	60 mA
Current limitation	Short-circuit-proof	Short-circuit-proof
Voltage gain	6 ±0.1	6 ±0.1
Amplifier bandwidth, large signal	600 Hz @ 1000 nF load, 6 kHz @ no load	200 Hz @ 1000 nF load, 3 kHz no load
Input impedance	100 kΩ	100 kΩ
Interfaces and operation		
Piezo connector	9-pin sub-D connector	Header pins
Control input sockets	BNC	Header pins
Display	3½-digit LCD	-
Miscellaneous		
Operating temperature range	5 to 50 °C	5 to 50 °C
Dimensions	160 x 125 x 50 mm	70 x 42 x 30 mm
Mass	0.7 kg	0.15 kg
Operating voltage	90-240 VAC, 50-60 Hz, (external switching P/S, included)	±15 V, 315 mA max., stabilized