PICA Piezo High-Power Amplifier/Controller

2000 W and high efficiency due to energy recovery

E-481

- Peak power 2000 W
- Integrated energy recovery
- Output voltage 0 to ±1100 V or bipolar
- Overheat protection for piezo actuators with temperature sensor
- Position control (optional)
- Computer interface and display modules

PICA high-performance piezo amplifier
19-inch benchtop device for dynamic continuous operation of PICA piezo actuators with high electrical capacitance. Analog control. Output voltage to 1100 V, bipolar can be set.

Energy saving of up to 80 % due to switched amplifier principle
Switching amplifier with pulse width modulation (PWM) of the piezo output voltage. When the piezo actuator is discharged, a patented circuitry for energy recovery stores part of the returning energy in a capacitor and makes it reusable for the next charging cycle. The amplifier runs cooler and provides better stability.

Fields of application
Industry and research. Active vibration absorber. Adaptive mechanics. Precision mechanics/machining. Optics. Metrology / measuring technology. Interferometry. Adaptive systems technology. Switching applications. Laser tuning. Force generation / material testing. Nanotechnology.

Specifications

	E-481.00
Function	Power amplifier with energy recovery for PICA high-volt piezo actuators with option for P-177.50 temperature sensor and rinse air connection for PICA HVPZT

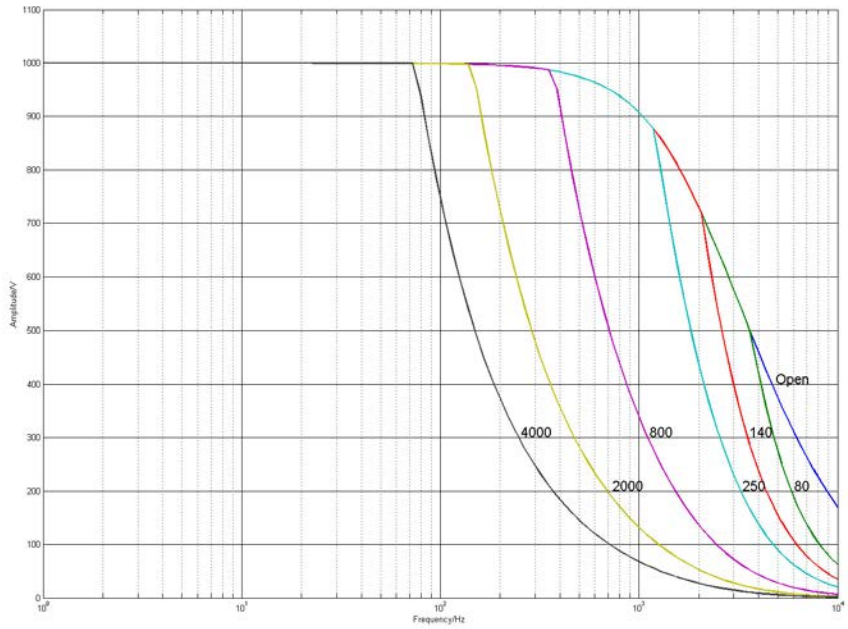
Amplifier	E-481.00
Output voltage	Default: 0 to 1100 V Can be set: -260 to 780 V, -550 to 550 V, +260 to 780 V, 0 to -1100 V
Amplifier channels	1
Average output power	equivalent to 630 VA reactive power
Peak power < 5 ms Max. output power	2000 VA
Average output current	>600 mA
Peak current, <5 ms	2000 mA
Amplifier bandwidth, small signal	5 kHz (660 nF), 1 kHz (3.4 µF)
Amplifier bandwidth, large signal	1.4 kHz (660 nF), 350 Hz (3.4 µF)
Residual ripple, noise, 0 to 100 kHz	150 mV_{rms} <2000 mV_{pp} (100 nF)
Current limitation	Short-circuit proof
Voltage gain	±100
Input impedance	100 kΩ
Input voltage range	Without servo: ±1/100 of selected output voltage range With servo: 0 to 10 V

Interfaces and operation	E-481.00
Piezo connection	LEMO EGG.0B.701.CJL1173
Analog input	BNC socket
DC offset setting	10-turn potentiometer, adds 0 to 10 V to the input voltage
Temperature sensor	LEMO socket, automatic deactivation of high voltage at max. 85 °C

Miscellaneous	E-481.00
Operating voltage	100 to 120 / 220 to 240 VAC, 50-60 Hz (fuse change required)
Operating temperature range	5 to 50 °C (above 40 °C, power derated)
Mass	8.6 kg
Dimensions	288 mm × 450 mm × 158 mm + handles

Ask about custom designs!

Drawings / Images



E-481.00: Operating limits with various piezo loads, capacitance values in nF

Ordering Information

E-481.00
PICA high-performance piezo amplifier / controller with energy recovery, 1100 V voltage range, 2000 W, 19''