

## 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  $\pm 1100$  V or bipolar
- Overheat protection for piezo actuators with temperature sensor
- Position control (optional)
- Interface / display modules (optional)

### 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 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.

### Application fields

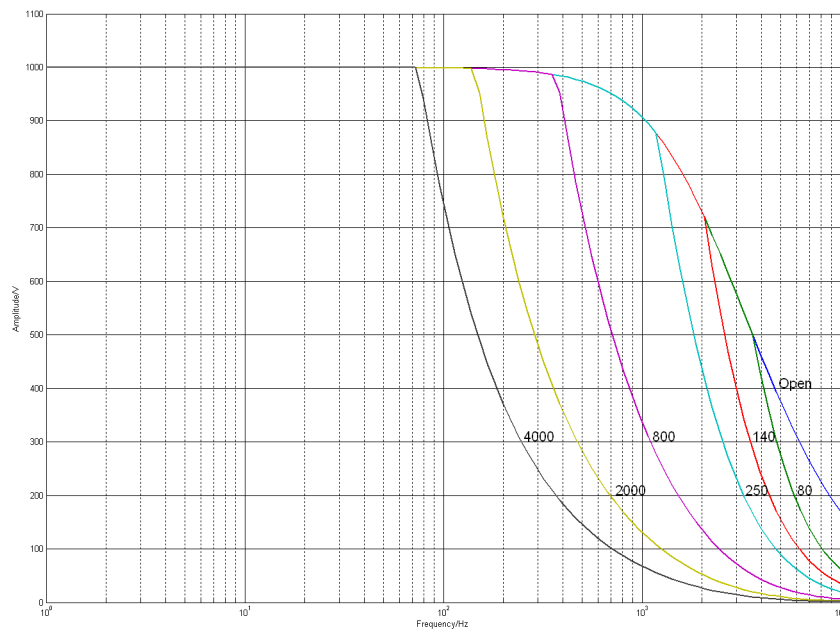
Industry and research. Active vibration absorber. Adaptive mechanics. Precision mechanics/machining. Optics. Metrology / measuring technology. Interferometry. Adaptive systems technology. Switching applications. Laser tuning. Force generation / material testing. Nanotechnology.

## 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	2000 VA
Max. output power	
Average output current	>600 mA
Peak current, <5 ms	2000 mA
Amplifier bandwidth, small signal	5 kHz (660 nF), 1 kHz (3.4 $\mu$ F)
Amplifier bandwidth, large signal	1.4 kHz (660 nF), 350 Hz (3.4 $\mu$ F)
Residual ripple, noise, 0 to 100 kHz	150 mV <sub>rms</sub> <2000 mV <sub>pp</sub> (100 nF)
Current limitation	Short-circuit proof
Voltage gain	$\pm 100$
Input impedance	100 k $\Omega$
Input voltage range	Without servo: $\pm 1/100$ 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 $\times$ 450 mm $\times$ 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"