

PICA High-Performance Piezo Amplifier / Servo Controller

High Energy Efficiency due to Energy Recovery



E-482

- Peak current 6 A
- Output voltage to 1050 V
- Integrated energy recovery
- Temperature sensor protects piezo actuator from overheating
- 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 1050 V, bipolar can be set. 6 A peak current, 2 A continuous current.

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.

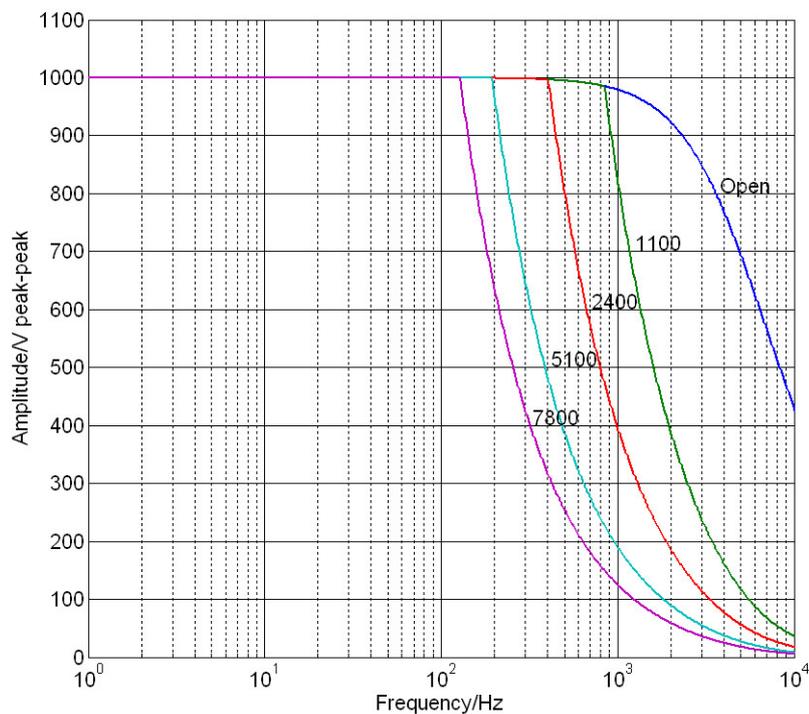
Fields of application

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-482.00	
Function	Power amplifier with energy recovery for PICA high-voltage piezo actuators
Amplifier	
Output voltage	Default: 0 to 1050 V Can be set: -260 to +780 V, -525 to +525 V
Amplifier channels	1
Average output current (reactive current)	2 A
Peak current, <5 ms	6 A
Current limitation	Short-circuit proof
Voltage gain	100
Amplifier bandwidth, small signal	2 kHz (1 μ F)
Amplifier bandwidth, large signal	400 Hz (5 μ F)
Residual ripple, noise, 0 to 10 kHz, 1 μ F	300 mV _{rms}
Suggested capacitive load	1 μ F (min.), 17 μ F (max.)
Input impedance	100 k Ω
Input voltage range	Without servo: $\pm 1/100$ of selected output voltage range With servo: 0 to 10 V
Interfaces and operation	
Piezo connection	LEMO EGG.0B.701.CJL1173
Analog input	BNC socket
Temperature sensor (piezo actuator)	LEMO socket; automatic deactivation of high voltage at 120 °C
DC offset setting	10-turn potentiometer, adds 0 to ± 10 V to the input voltage
Miscellaneous	
Operating voltage	100 to 120 / 220 to 240 VAC, 50 to 60 Hz (fuse change required)
Operating temperature range	5 to 40 °C
Mass	10.4 kg
Dimensions	288 mm \times 450 mm \times 158 mm + handles

Drawings / Images



E-482.00: Operating limits (open loop) with various capacitive loads, capacitance values in nF

Ordering Information

E-482.00

PICA high-performance piezo amplifier / controller with energy recovery, 1050 V, 6 A, 19"