

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)
- 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 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 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.

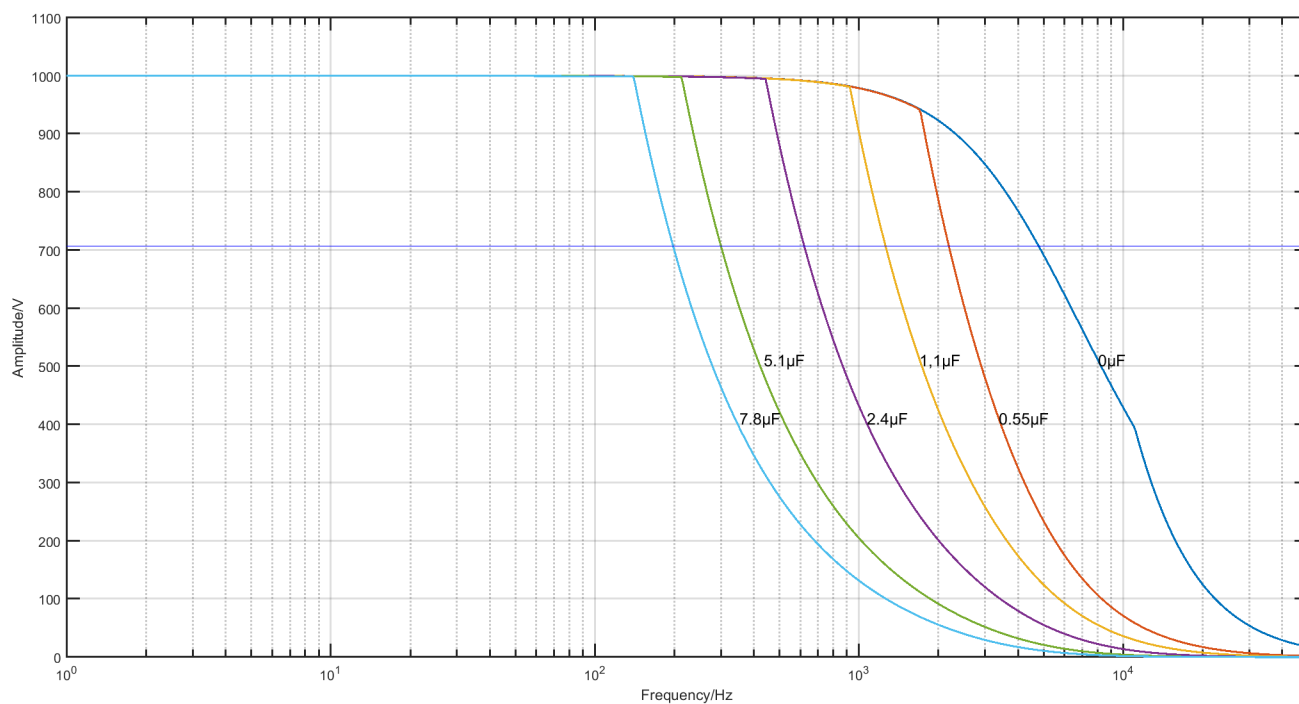
Application fields

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-482.00
Function	Power amplifier with energy recovery for PICA high-voltage piezo actuators
Amplifier	E-482.00
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	E-482.00
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	E-482.00
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"