

# PICA High-Power Piezo Driver/ Servo Controller

HIGH ENERGY EFFICIENCY THROUGH ENERGY RECOVERY



## E-482

- Peak current 6 A
- Output voltage to 1050 V
- Integrated energy recovery
- Temperature sensor protects piezo actuator from overheating

### PICA high power piezo driver

19-inch bench top for dynamic continuous operation of PICA piezo actuators with high electrical capacitance. Analog operation. Output voltage up to 1050 V, bipolar selectable. 6 A peak current, 2 A average current

### Energy saving of up to 80% due to switched control 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 makes it reusable for the next charging cycle. The amplifier runs cooler and provides better stability.

### Upgrading to a Servo Controller

Optional E-509 position servo control module for closed-loop control with a position feedback sensor. Optional E-517 digital module with wave generator, data recorder, display, 24-bit interfaces (USB, etc)

	E-482.00	Unit
Function	Power amplifier with energy recovery for PICA high-voltage piezo actuators	
<b>Amplifier</b>		
Output voltage	Default: 0 to 1050 V Selectable: -260 to +780 V, -525 to +525 V	
Amplifier channels	1	
Average current (idle current)	2	A
Peak current, <5 ms	6	A
Current limitation	Short-circuit-proof	
Voltage gain	100	
Amplifier bandwidth, small signal	2 kHz (1 $\mu$ F)	
Amplifier bandwidth, large signal	400 Hz (5 $\mu$ F)	
Ripple, noise, 0 to 10 kHz, 1 $\mu$ F	300	mV <sub>rms</sub>
Suggested capacitive load	1 $\mu$ F (min.), 17 $\mu$ F (max.)	
Input impedance	100	k $\Omega$
Control input voltage	Servo off: $\pm 1/100$ of selected output range; servo on: 0 to 10 V	
<b>Interface and operation</b>		
Piezo connector	LEMO EGG.0B.701.CJL1173	
Analog input	BNC socket	
Temperature sensor (piezo actuator)	LEMO socket; deactivation of the piezo voltage output at 120 °C	
DC offset	10-turn potentiometer, adds 0 to $\pm 10$ V to input voltage	
<b>Miscellaneous</b>		
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	

Linear Actuators & Motors

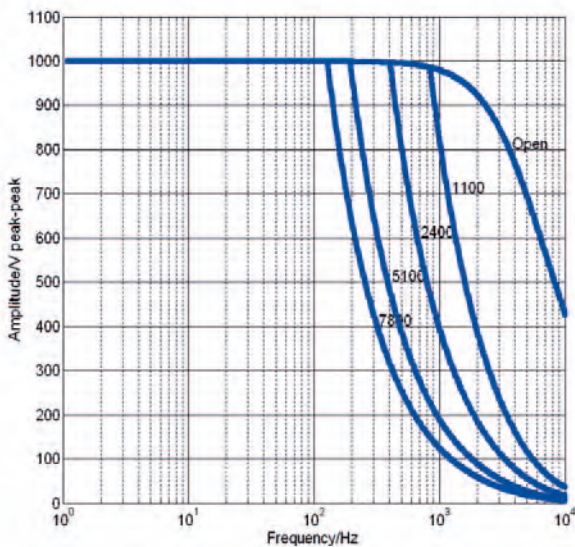
Piezo Drivers  
Single-Channel

Nanometrology

Hexapod Systems

Micropositioning

Appendix



Operating limits with various PZT loads (open-loop), capacitance is measured in nF