

Piezo Amplifier Module

High Power due to Energy Recovery, E-500 Piezo Controller System



E-504

- Peak power 280 W
- High continuous power of 100 W
- Output voltage range -30 to 130 V
- Module for E-500 piezo controller rack
- Position control (optional)
- Interface / display modules (optional)

Power amplifier for low voltage piezo actuators

Peak currents to 2000 mA. 280 W peak power, average output power up to 100 W.

Energy recovery

Class-D switched amplifier with capacitor for energy recovery. Low influence of the application thanks to reduced heat dissipation.

The working principle of the E-504 series is particularly good for high dynamics scanning and switching applications. The E-505 is recommended for applications that require static position stability in a subnanometer range.

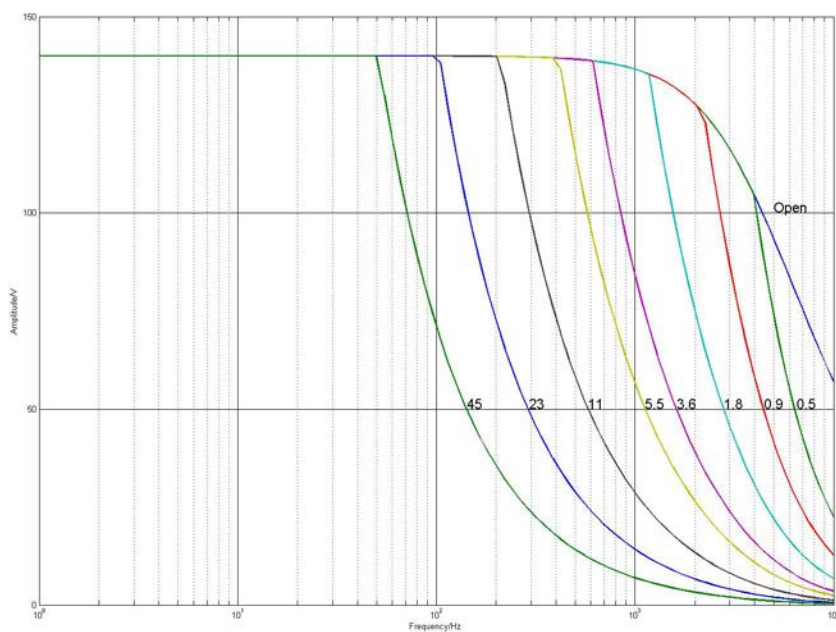
Fields of application

Industry, automation. High dynamics scanning or switching applications.

Specifications

	E-504.00F	E-504.00S
Function	Power amplifier with energy recovery	Offset voltage source for tip/tilt platforms
Channels	1	1
Amplifier	E-504.00F	E-504.00S
Input voltage range	-2 to 12 V	-
Output voltage	-30 to 130 V	100 V
Peak output power (<5 ms)	280 W	280 W
Average output power	100 W at full voltage range	100 W at full voltage range
Peak current (<5 ms)	2000 mA	2000 mA
Average output current	1000 mA	1000 mA
Current limitation	Short-circuit proof	Short-circuit proof
Voltage gain	10 ±0.1	-
Amplifier bandwidth	4 kHz	4 kHz
Ripple, noise	5 mV _{rms} / <10 kHz, 20 mV _{pp} / <10 kHz, <30 mV _{rms} / <100 kHz, <100 mV _{pp} / 100 kHz <150 mV _{pp} / 20 MHz	<30 mV _{rms} / <100 kHz, <100 mV _{pp} / 100 kHz <150 mV _{pp} / 20 MHz
Capacitive base load (internal)	1.5 µF	1.5 µF
Recommended piezo load	1µF to 100µF	1µF to 100µF
Amplifier resolution	10 mV	-
Amplifier classification	Class D, switched 100 kHz	Class D, switched 100 kHz
Output impedance	0.5 Ω/1mH/1.5µF	0.5 Ω/1mH/1.5µF
Input impedance	100 kΩ	-
Interfaces and operation	E-504.00F	E-504.00S
Piezo connection (voltage socket)	LEMO ERA.00.250.CTL	LEMO ERA.00.250.CTL
Analog input	SMB	-
DC offset setting	10-turn potentiometer, adds 0 to 10 V to the input voltage	-
Display and indicators	Power LED	Power LED
Miscellaneous	E-504.00F	E-504.00S
Operating temperature range	5 to 50 °C	5 to 50 °C
Dimensions	14 HP / 3 RU	14 HP / 3 RU
Mass	0.9 kg	0.9 kg
Operating voltage	E-500 system	E-500 system

Drawings / Images



E-504: Operating limits (open loop) with various piezo loads, capacitance values in μF

Ordering Information

E-504.00F

High-power piezo amplifier module, 1 channel, 280 W peak power, 100 W continuous power, -30 to 130 V, energy recovery

E-504.00S

Offset voltage source for tip/tilt platforms, 1 channel, 280 W peak power, 100 W continuous power, 100 V fixed voltage, energy recovery