

E-503 Piezo Amplifier Module 3 Channels, for E-500 Piezo Controller System



- Module for E-500 Piezo Controller Rack
- 3 x 14 W Peak Power
- Output Voltage Range -20 to 120 V
- Prepared for Position Servo-Control Upgrade (optional)
- Prepared for Interfaces / Display Modules (optional)

The E-503 is a piezo driver module for low-voltage piezo actuators and positioners. It contains three independent amplifiers that can output and sink a peak current of 140 mA in the -20 to 120 V voltage range. For frequency response with selected capacitive loads, see graph below. The piezo amplifier module is designed to work in the E-500 Controller system (see p. 2-142).

The units are designed to provide high-resolution operation of piezo actuators and positioning systems in voltage-controlled mode (open-loop) and optionally in position-controlled mode (closed-loop).

Modular Design for Flexibility: Optional Servo Controller Upgrade

The E-503 amplifier module can be installed in the

E-500 / E-501 controller chassis. The modular design makes the E-500 piezo controller system very flexible. An optional E-509 piezo servocontroller module can be installed along with the E-503 amplifier module, for closed-loop piezo position control. In this configuration, the E-503 output voltage is set by the servo-control loop.

Voltage Controlled Piezo Positioning

In open-loop (voltage-controlled) piezo operation the amplifier output voltage is determined by an analog signal at the Control Input optionally combined with the DC-offset potentiometer. Open-loop operation is ideal for applications where fast response and very high resolution with maximum bandwidth are essential. Here, commanding and reading the

Bestellinformation

E-503.00
Piezo Amplifier Module,
-20 to 120 V, 3 Channels

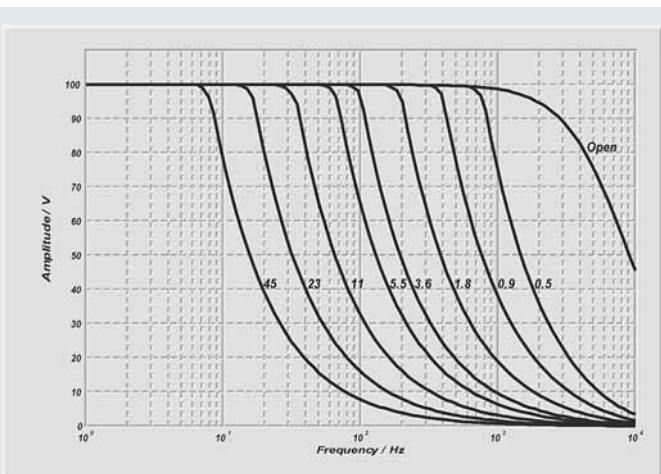
E-503.00S
Piezo Amplifier Module,
-20 to 120 V, 3 Channels,
Modified E-503.00 for S-330, S-334,
S-340 Tip/Tilt Systems, with
One Fixed Voltage of +100 V,
Two Variable Voltages

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target position in absolute values is either not important or carried out by external position sensors. The precision 10-turn potentiometer can also be used alone to set the output voltage manually.

Technical Data

Model	E-503.00	E-503.00S
Function	Power amplifier	Power amplifier
Channels	3	2
Amplifier		
Control input voltage range	-2 to +12 V	-2 to +12 V
Output voltage	-20 bis 120 V	-20 bis 120 V; one additional fixed voltage of +100 V
Peak output power per channel	14 W	14 W
Average output power per channel	6 W	6 W
Peak current per channel, <5 ms	140 mA	140 mA
Average current per channel, >5 ms	60 mA	60 mA
Current limitation	Short-circuit-proof	Short-circuit-proof
Voltage gain	10 ±0.1	10 ±0.1
Input impedance	100 kΩ / 1 nF	100 kΩ / 1 nF
Interfaces and operation		
Piezo connector	LEMO ERA.00.250.CTL	LEMO ERA.00.250.CTL
Analog input	BNC	BNC
DC Offset	10-turn pot., adds 0 to 10 V to Control In	10-turn pot., adds 0 to 10 V to Control In
Miscellaneous		
Operating temperature range	5 to 50 °C	5 to 50 °C
Overheat protection	Deactivation at 85 °C	Deactivation at 85 °C
Dimensions	14HP/3U	14HP/3U
Mass	0.9 kg	0.9 kg
Operating Voltage	E-500 System	E-500 System
Max. power consumption	30 W	30 W



E-503: operating limits with various PZT loads (open-loop), capacitance is measured in μF