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E-503 Piezo Amplifier Module

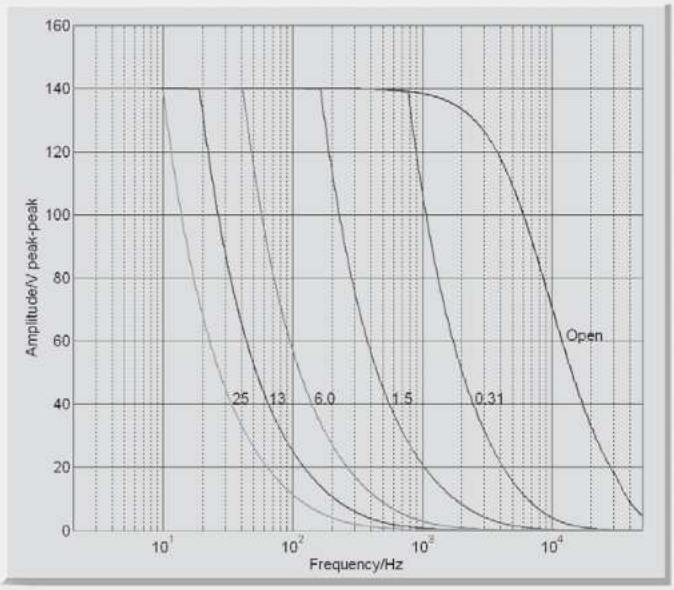
3 Channels, for E-500 Piezo Controller System



- **Module for E-500 Piezo Controller Rack**
- **3 x 140 mA Peak Current**
- **Output Voltage Range -30 to 130 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 -30 to 130 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).



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

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 servo-controller 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 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.

Ordering Information

E-503.00
Piezo Amplifier Module,
-30 to 130 V, 3 Channels

E-503.00S
Piezo Amplifier Module,
-30 to 130 V, 2 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

Ask about custom designs

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	-30 bis 130 V	-30 bis 130 V; one additional fixed voltage of +100 V
Peak current per channel, <5 ms	140 mA	140 mA
Average current per channel, >5 ms	40 mA	40 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	40 W	40 W

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