Digital 1-Channel Piezo Controller

High Output Power for Dynamic Operation, Capacitive Sensors

E-709.CHG

- Output power up to 50 W
- Linearity error maximum of 0.02 %
- Fast 25 Mbit/s serial interface
- Comprehensive I/O functions
- Extensive software package

Fast piezo controller
1 channel. For piezo-based nanopositioning systems with capacitive sensors. High output current for dynamic applications. Digital controller. Voltage range -30 to 130 V.

Interfaces
USB, RS-232, fast serial interface with up to 25 MBit/s. Additional high-bandwidth analog control input / sensor input. Analog output, e.g., for external amplifiers.

User software and functions
PIMikroMove, PI General Command Set (GCS). Drivers for NI LabVIEW, shared libraries for Windows and Linux. Compatible with µManager, MetaMorph, MATLAB. Wave generator. Linearization. Data recorder. Autozero. Trigger I/O. Software-configurable parameters.

Specifications

	E-709.CHG
Function	Digital, high dynamics controller for single-axis piezo nanopositioning systems
Axes	1
Processor	DSP 32-bit floating point, 150 MHz
Supported functions	Wave generator, data recorder, autozero, trigger I/O

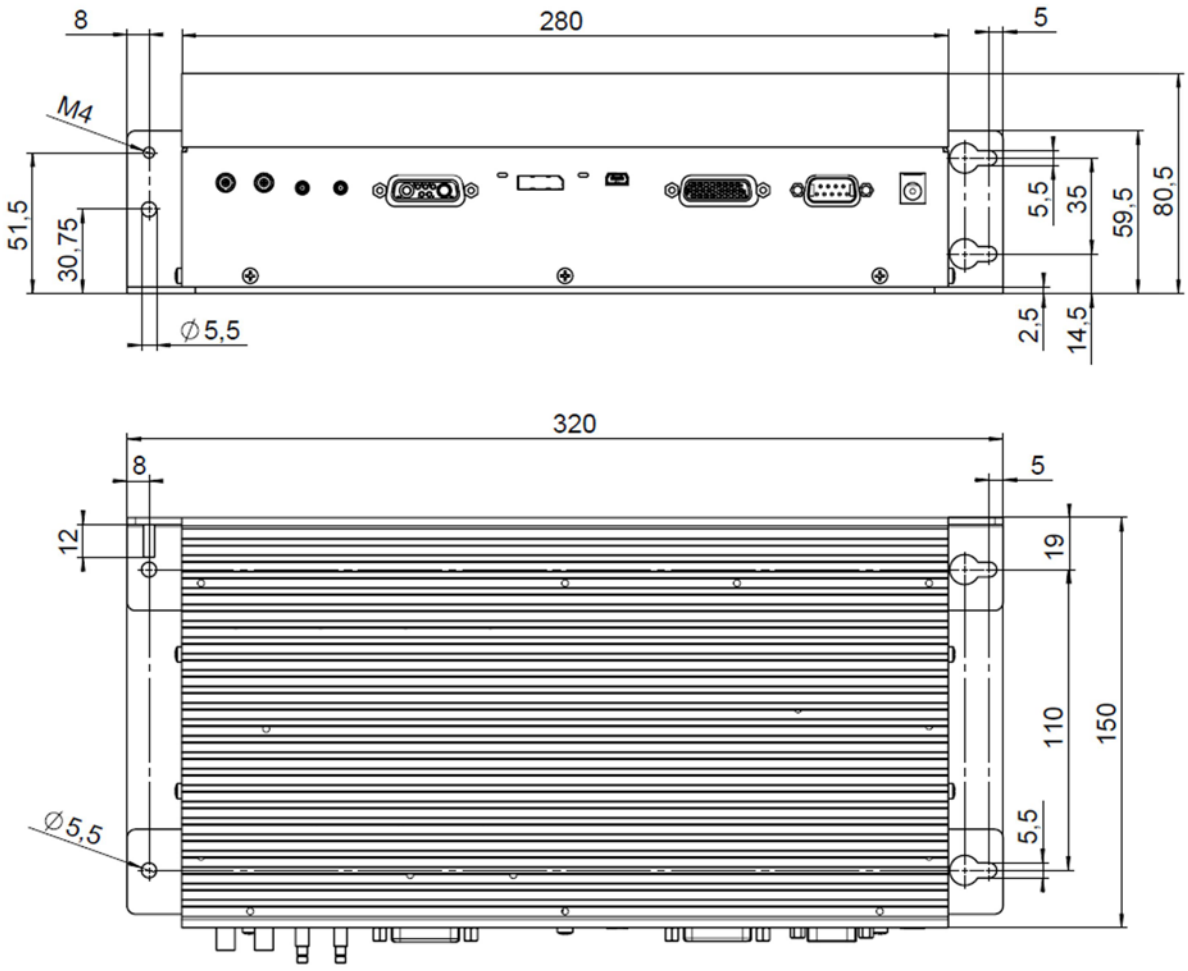
Servo controller and sensor	E-709.CHG
Controller type	PID, two notch filters, sensor linearization
Sampling rate, servo control	10 kHz
Sampling rate, sensor	10 kHz
Sensor type	Capacitive
Linearization	5th order polynomials
Sensor bandwidth	5 kHz
Sensor resolution	16-bit
External synchronization	Yes

Amplifier	E-709.CHG
Output voltage	-30 to 130 V
Peak power (<2 ms)	50 W
Average output power (>5 ms)	15 W
Peak current (<2 ms)	500 mA
Average output current (>5 ms)	160 mA
Current limitation	Short-circuit proof
Resolution DAC	17-bit

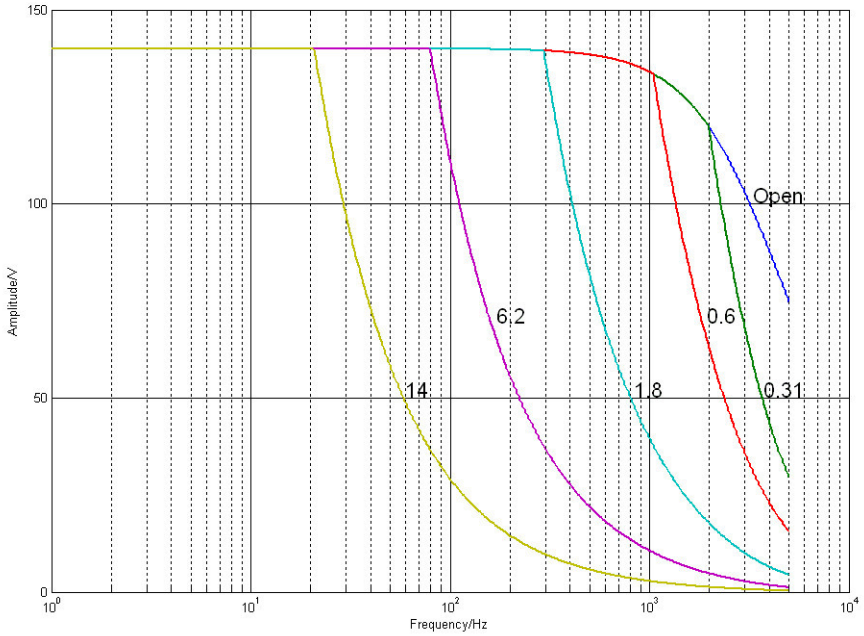
Interfaces and operation	E-709.CHG
Communication interfaces	USB, RS-232, SPI
Piezo / sensor connector	D-sub special 7W2
Analog input socket	SMB
Sensor monitor socket	SMB
I/O connector	HD D-sub 26 (f) 1 analog input 0 to 10 V (configurable) 1 analog output 0 to 10 V (configurable) 1 monitor piezo voltage -0.3 to 1.3 V 1 digital input (LVTTL, programmable) 5 digital outputs (LVTTL, 3 × predefined, 2 × programmable)
Command set	PI General Command Set (GCS)
User software	PIMikroMove
Application programming interfaces	API for C / C++ / C# / VB.NET / MATLAB / Python, drivers for NI LabVIEW; supported by MATLAB, MetaMorph, µManager, Andor iQ
Display and indicators	Status LED, overflow LED

Miscellaneous	E-709.CHG
Operating temperature range	5 to 50 °C
Dimensions	320 mm × 150 mm × 80 mm
Mass	2.5 kg
Operating voltage	24 V DC, in the scope of delivery: external power adapter
Max. power consumption	45 W

Drawings / Images



E-709.CHG: dimensions in mm



E-709.CHG: Operating limits (open loop) with various piezo loads, capacitance values in µF

Ordering Information

E-709.CHG
Digital piezo controller, 1 channel, -30 to 130 V, capacitive sensor, high power output, benchtop device