

Piezo amplifier NV 120/1, NV 120/1 CLE

Concept:

The series NV 120/1 is engineered to meet the highest standards of accuracy and dynamics for high-resolution piezoelectric actuators. The piezo amplifier series NV 120/1 provides a permanent output current of 120 mA and has a signal noise of only <math><0.3\text{ mV @ }500\text{ Hz}</math>. With these excellent signal parameters, it achieves position resolution in the sub-nm in addition to a settling time in the microseconds range.

The series of piezo controller units NV 120/1 is designed to be compact table top systems in a rugged metal housing. To accommodate use in laboratory conditions, the amplifiers have a dimmable TFT display. To give the user flexibility, various controlling options were included. A manual control as well as an analog and various digital interfaces are available to the user.

Specials:

The series NV 120/ 1 has two types. The amplifier NV 120/1 is intended for actuators without integrated measurement system. The amplifier of the type NV 120/1 CLE has automatic sensor identification, the integrated ASI-functionality. It is designed for use with piezo actuators which have an integrated measurement system. It can be either a high-resolution strain gauge sensor or a non-contact capacitive sensor. The display of the NV 120/1 CLE can switch to show the applied voltage signal or the measured operating range.

Interfaces:

Various control interfaces are available. There is an analog interface that can be controlled by 0 to 10 V, RS 232, and USB 2.0 interface. The digital interfaces have a resolution of 16 bit. An analog monitor output shows the control voltage of the piezoelectric actuator in a fixed ratio, completing the technical advantages of the series NV 120/1.



image: NV 120/1 CLE

Product highlights:

- analog 1-channel piezo amplifier
- permanent 120 mA output current
- low noise output signal
- table top casing
- dimmable TFT Display
- USB2.0 and RS232 interface
- analog input and output signals
- position control for strain gage and capacitive sensors

Applications:

- laboratory applications
- industrial applications
- high resolution positioning
- short rise time of low voltage actuators

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Technical data

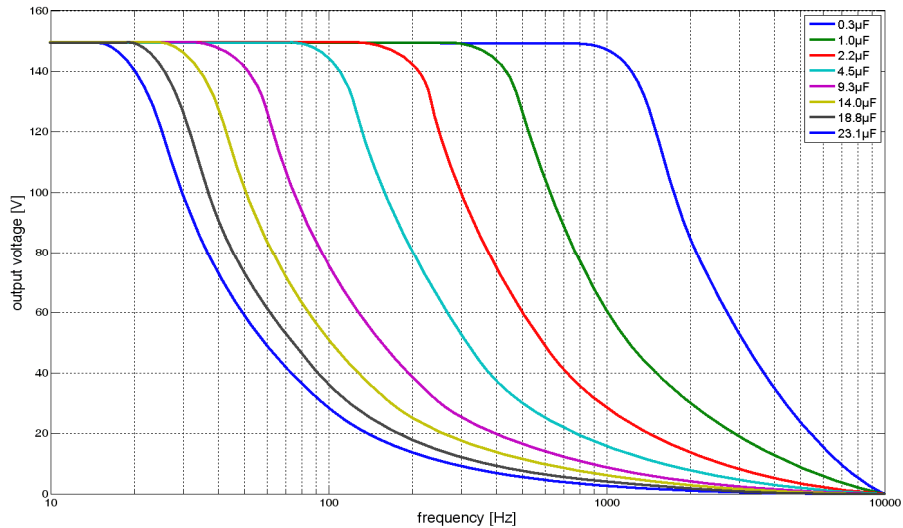
part no.	unit	NV 120/1 E-101-90	NV 120/1 CLE E-101-93
number of channels	-		1
sensor controller**	-	without	strain gage capacitive
output voltage (adjustable by via manual encoder)	V		-20...+130
output current (continuous)	mA		120
voltage noise	-	<0.3m V _{RMS} @ 500 Hz	
connector output voltage	-	D-SUB 15pin	
modulation input *	V		0...+10
input impedance	kΩ		10
display		3.5"-TFT-color display; dimmable	
monitor output*	V		0...+10
monitor output impedance typ.	Ω		100
connector modulation/monitor *	-	D-SUB 25pin	
interface	-	USB2.0, RS232	
command parameter resolution	-	16 bit	
software	-	LabView	
connector sensor	-		via D-SUB 15pin output voltage connector
dimensions (l x w x h)	mm	240 x 210 x 88	
weight	kg	2.1	
operating temperature range	-	5°C – 35°C (41°F – 95°F)	
main supply	-	24 VDC/2.5 A (wide range power supply 100 to 240 V AC included)	
special features	-	ASI-function, soft start function, overvoltage protection, temperature monitoring, short circuit proof	

* Adapter cable D-SUB/BNC is included in the shipment

** The ASI function allows you to exchange the same type of actuator and use it with the same amplifier. Actuators for an ASI compatible amplifier are equipped with an external pre amplifier. New calibration is no longer necessary (valid only for standard calibration).

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Diagram



The diagram shows the typical frequency which can be reached as a function of the capacitance of the piezoelectric actuator and the driving voltage by an output current of 120 mA.