

## Analog 3-channel piezo amplifier NV 40/3, NV 40/3 CLE

### Concept:

The series NV 40/3 is engineered to meet the highest standards of accuracy for high-resolution piezoelectric actuators. The piezo amplifier provides a permanent output current of 40 mA per channel and has a signal noise of only <math><0.3\text{ mV @ }500\text{ Hz}</math>. With these excellent signal parameters, it achieves a position resolution in the sub-nm in addition to a settling time in the millisecond range.

The series of piezo controller units NV 40/3 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 40/3 consists, analog to the series NV 120/1, of two types. The amplifier NV 40/3 is intended for actuators without integrated measurement system. The amplifier 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 40/3 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 40/3 and NV 40/3CLE.



Image: NV 40/3 CLE

### Product highlights:

- dimmable TFT Display
- permanent 40 mA output current per channel
- low noise output signal
- USB2.0 and RS232 interface
- analog input and output signals
- position control for strain gauge and capacitive sensors (CLE-Version)

### Applications:

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

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### Technical data

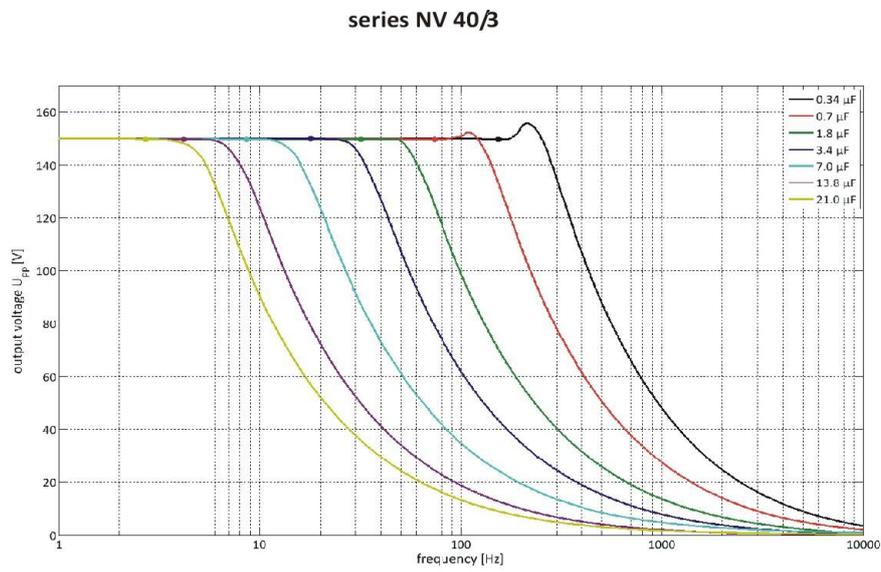
part no.	unit	NV 40/3	NV 40/3 CLE
		E-101-20	E-101-23
number of channels	-	3	
display	-	3.5"-TFT-color display; dimmable	
sensor controller**	-	without	strain gauge capacitive
output voltage (adjustable by via manual encoder)	V	-20...+130	
output current (continuous)	mA	40 per channel	
voltage noise	-	<0.3 mV <sub>RMS</sub> @500 Hz	
connector output voltage	-	D-SUB 15pin	
modulation input *	V	0...+10	
input impedance	kΩ	10	
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 connector output voltage	
dimensions (l/w/h)	mm	240/210/88	
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 of the NV 40/3 series which can be reached as a function of the capacitance of the piezoelectric actuator and the driving voltage by an output current of 40mA.

Specifications subject to change without notice!