

# NV40/3CLE

## 3 channel piezo amplifier

- ◆ **compact stand-alone housing**
- ◆ **automatic sensor identification - ASI**
- ◆ **low voltage noise (< 0,3 mV<sub>RMS</sub>)**
- ◆ **full graphic display**
- ◆ **integrated control electronics**



### applications:

- drift compensated controlling of piezo actuators with resistive measurement systems
- laboratory applications
- industrial applications

pic.1: NV40/3CLE

The piezo amplifier **NV40/3CLE** was designed for low voltage piezo elements with external measurement system. The **NV40/3CLE** includes voltage amplifier, closed loop control, and display, with a PC-interface. The high-resolution display shows the position of the actuator along with some other information such as: the mode of operation, and the temperature inside the amplifier. This piezo amplifier also provides you the opportunity to operate the piezo element via analog modulation input. The position of the actuator can be examined via the monitor output. Due to the very low voltage noise of the output current, only 0,3 mV<sub>RMS</sub> this amplifier system is ideally suited for positioning applications with sub-nm resolution. Special protective circuits prevent voltage spikes when switching the unit on and off and consequently avert any overload caused by overheating or short-circuit. The new soft start ensures an actuator-safe activation of the system. With the electronic PID controller this systems operates without any drift or hysteresis.

Due to its design, and compact casing, the new amplifier is recommendable for all R&D and engineering applications.

### technical data:

channels	3
output power	3x 5,2W
output voltage	-20 ...+130V
output current (permanent)	3x 40mA
voltage noise	0,3mV <sub>RMS</sub> @ 500Hz
modulation signal	0 ... 10V DSUB25
input resistance modulation input	10kΩ
DC-offset	selectable via button
monitor	QVGA color display
connector (piezo)	D-Sub 15pol. per channel
monitor output	-5 ... 5V (measurement system) DSUB25 or 0 ... 10V (actuator) DSUB25
inside resistance monitor output	<100Ω
dimensions [W x H x L]	210 x 88 x 240 mm
weight	2,1kg
interface	RS232, USB
special features	soft start, ASI-function, over voltage protection, temperature rise protection, short circuit proof, closed loop mode selectable via button, optional: optimization of system load-dependent
operating voltage	24VDC/2,5A (wide range power supply 90-264VAC included)

## typical parameters for example configuration:

### NV40/3CLE + TRITOR 38SG-D

non-linearity*	< 0,2	%
repeatability*	< 0,05	%
resolution	1	nm
motion open loop (+20%/-10%)	38	µm
motion closed loop	32	µm
step response to 100% motion @ 50g load*	≤ 50	ms

\* data for closed mode operation

All data's measured with TRITOR 38 SG D serial number: 77748

### example configuration:

number	Name	part no.
1	NV 40/3CLE	E-101-23
1	TRITOR 38 SG-D	T-402-01D



pic.2: configuration for TRITOR-system  
(e.g. for Tritor 38SG-D, part no. T-402-01D)