

NV200/D NET Digital Piezo Controller

Concept

The NV200/D NET is a digital piezo controller with a serial and an ethernet interface for local and remote control and servicing of piezo actuators. The user can drive quasi static or dynamic step positioning applications through the network access, allowing for more flexibility and use in critical environments. For high dynamical applications, a real time SPI interface is implemented.

The amplifier can drive piezoelements with up to 400 mA.

With a 16 bit resolution, the NV200/D NET guarantees high positioning accuracy and low noise.

The NV200/D NET can automatically recognize actuators and adjust control parameters from stored information in the EEPROM connector. The NV200/D NET can be used with actuators equipped with either strain gauge or capacitive sensors, as well as with actuators without measurement system. The NV200/D NET also supports actuators based on piezosystemjena's own NanoX® bi-directional actuating technology.

Features:

The NV200/D NET has an automatic sensor calibration (ASI / ASC) function. All values of the actuating system, like serial number of the actuator, actuator name, control parameters and filter settings, are stored in the actuator plug. This allows an easy exchange of actuators or controllers.

A digital PID controller is integrated in the device. The user can change the values according to his or her current setup. For repetitive motion patterns, an iterative learning control (ILC) algorithm can be used to achieve highest tracking precision. In this way, the NV200/D NET can achieve closed loop precision at open loop speeds. Due to its trigger input and output functions additional units of the NV200/D NET can be synchronized to control multiple axes.



Product highlights:

- Ethernet connection for remote control
- USB-C interface
- Real time SPI interface
- Analog interface
- Trigger I/O
- 400mA peak current
- Automatic Sensor Calibration (ASC-function)
- 16 bit resolution
- Feedback control with adjustable PID or ILC controller
- Low-pass filter and slew rate limiter
- Arbitrary waveform generator
- Data recorder
- Integrated piezo current measurement

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Technical Data

part no.		E-730-820
power supply $\pm 10\%$	V	24VDC
Input current	A	max. 2.5A average, 5.8A peak
power connector	-	2.1 mm DC plug
channels	-	1
output voltage	V	-20...130 or -10...+180 (automatically adapted to actuator)
output current	mA	200 / 400 peak
output current NanoX®-mode	mA	2 x 100 / 2x 200 peak (1.2ms)
voltage noise (@500 Hz Band-width)	mV _{RMS}	0.7
actuator connector	-	D-Sub 15 pol.
DA-converter resolution	bit	16
AD-converter resolution	bit	16
sensor	-	external sensor, strain gauge, capacitive
feedback controller types	-	PID control with lowpass and notch filters, ILC control
features	-	short circuit proof, over temperature protection, arbitrary waveform generator, data recorder, piezo current measurement
interface module		
		USB-C
		Ethernet
		SPI (D-Sub 15 pol. HD)
		analog Modulation/Monitor (D-Sub 15 pol. HD)
casing		
dimensions (l * w * h)	mm	165 x 120 x 65
environment		
operating temperature	-	5 ... 35°C / 41 ... 95°F
humidity	% _{rel}	max. 80, non-condensing
altitude	m	up to 2000

Rev 0 (2021)