

PiezoWalk® NEXACT® Controller

Networkable Controller for NEXACT® Linear Drives and Positioners



E-861

- High-speed encoder input
- Macro programmable for stand-alone functionality
- Data recorder
- Nonvolatile EEPROM for macros and parameters
- Daisy chain networking

Digital servo controller for NEXACT® piezo motors

1 axis. Supports motion types of the PiezoWalk® drives: Nanostepping mode for longer distances. Highly dynamic positioning within one step with resolutions below one nanometer.

Interfaces and communication

USB and RS-232 interfaces for commanding. A/B quadrature encoder input. TTL inputs for limit and reference point switches. I/O lines (analog/digital) for automation. Interface for analog joystick. Daisy chain networking for up to 16 axes operated via a common computer interface.

Extensive functions, software support

Powerful macro command language. Nonvolatile macro storage, e.g., for stand-alone operation with autostart macro. Data recorder. PID controller, parameter changing during operation. Extensive software support, e.g., for LabVIEW, C, C++, MATLAB, Python. PIMikroMove user software.

Fields of application

- 2-photon microscopy, confocal microscopy
- 3-D imaging
- Laser technology
- Interferometry
- Biotechnology
- Micromanipulation
- Autofocus with high demands on travel range

Specifications

E-861.1A1	
Function	Controller for NEXACT® drives, suitable for PiezoWalk® drives
Drive type	NEXACT® piezo motor
Axes	1
Supported functions	Startup macro. Data recorder for recording operating data such as motor voltage, velocity, position or position error. Internal safety circuitry: Watchdog timer.
Motion and control	
Controller type	PID controller, parameter changing during operation
Trajectory profiles	Trapezoidal
Encoder input	Analog encoder input sine-cosine, interpolation selectable up to 1000; Interpolation electronics for differential transmission, 1 V _{pp} and 2.5 V offset of the encoder signal
Stall detection	Automatic motor stop when a programmable position error is exceeded
Input limit switch	2 × TTL (pull-up/pull-down, programmable)
Input reference point switch	1 × TTL
Electrical properties	
Max. output power	40 W
Output voltage	-10 to +45 V
Max. current consumption	2 A
Interfaces and operation	
Communication interfaces	USB, RS-232
Motor connection	HD Sub-D 15 (f)
Sensor connection	HD Sub-D 15 (m)
Controller network	Up to 16 units on single interface*
I/O lines	4 analog/digital in, 4 digital out (TTL)
Command set	PI General Command Set (GCS)
User software	PIMikroMove
Application programming interfaces	API for C / C++ / C# / VB.NET / Python, drivers for LabVIEW
Manual control (optional)	Pushbutton box, joystick (for 2 axes), Y cable for 2-D motion
Miscellaneous	
Operating voltage	24 V; in the scope of delivery: External power adapter with 24 V, 2 A
Operating temperature range	0 to 50 °C
Mass	1.1 kg
Dimensions	206 mm × 130 mm × 66 mm (incl. mounting rails)

* 16 units with USB; 6 units with RS-232.

Ordering Information

E-861.1A1

PiezoWalk® NEXACT® controller, 1 axis, benchtop device, linear encoder, USB and RS-232 interfaces, I/O, connector for joystick