

E-861 PiezoWalk® NEXACT® Controller/Driver

Networkable Controller for NEXACT® Linear Drives and Positioners



Ordering Information

E-861.1A1
NEXACT® Controller, 1 Channel,
Linear Encoder

Easy System Setup, Comprehensive Software

All parameters can be set and checked by software. System setup and configuration is done with the included PIMikro-Move user-interface software. Interfacing to custom software is facilitated with included Lab-View drivers and DLLs. With the PI General Command Set (GCS), system programming is the same with all PI controllers, so controlling a system with a variety of different controllers is possible without difficulty.

- For NEXACT® Drives and Positioning Systems
- Complete System with Controller, Integrated Power Amplifiers and Software
- Open-Loop Operation, or Closed-Loop with Linear Encoder
- High Performance at Low Cost
- Daisy-Chain Networking for Multi-Axis Operation
- Non-Volatile Macro Storage for Stand-Alone Functionality with Autostart Macro
- I/O for Automation, Joystick for Manual Operation
- Parameter Changes On-the-Fly

The new, compact E-861 controller is designed to operate NEXACT® linear drives and closed-loop positioning systems using them, simply and precisely. In perfect harmony with the mechanics, the E-861 supports both motion modes of the PiezoWalk® stepping drive: for longer moves, the stepping mode, and for moves shorter than typically 7 µm, the analog mode, which provides high-dynamics positioning with resolutions of less than 1 nm. The NEXACT® drive design minimizes piezo operating voltages to 45 V and below.

Flexible Automation

E-861 controllers offer a number of features to support automation and handling. For example, macros can be stored in non-volatile memory.

A programmable autostart macro allows stand-alone operation without external communication. Upon power-up, the macro with its internal command sequence is executed automatically.

For easy synchronization of motion with internal or external trigger signals, four input and four output lines are provided.

Multi-Axis Operation

Up to 16 E-861 controllers can be networked and controlled over a single PC interface.

Such daisy chain networks are flexible, can be extended at any time and are compatible with other PI controllers (e.g. DC servo-motor and stepper motor controllers).

Technical Data

| | |
|---------------------------------|--|
| Model | E-861.1A1 |
| Function | Controller for NEXACT® drives / systems |
| Drive type | NEXACT® linear drive |
| Channels | 1 |
| Motion and control | |
| Servo characteristics | P-I-D servo control, parameter change on-the-fly |
| Trajectory profile modes | Trapezoidal |
| Encoder input | Analog encoder input sine-cosine, interpolation circuit preset for differential transmission, 1 V _{pp} amplitude and 2.5 V offset of the encoder signal |
| Stall detection | Servo off, triggered by programmable position error |
| Input limit switch | 2 x TTL (pull-up/pull-down, programmable) |
| Input reference switch | 1 x TTL |
| Electrical properties | |
| Output power | max. 40 W |
| Output voltage | -10 to +45 V |
| Current consumption | max. 2 A |
| Interfaces and operation | |
| Communication interfaces | USB 1.0, RS-232 (9-pin (m) Sub-D) |
| Motor connector | Sub-D 15-pin (f) High Density |
| Sensor connector | Sub-D 15-pin (m) High Density |
| Controller network | Up to 16 units on single interface |
| I/O ports | 4 analog/digital in, 4 digital out (TTL) |
| Command set | PI General Command Set (GCS) |
| User software | PI MikroMove, PI Terminal |
| Software drivers | GCS-DLL, LabVIEW drivers |
| Supported functionality | Start-up macro; data recorder for categories like current position or velocity; internal safety circuitry: watchdog timer |
| Manual control (optional) | Joystick, Y-cable for 2D motion, pushbutton box |
| Miscellaneous | |
| Operating voltage | 24 V included: external power supply, 24 V, 2.0 A |
| Operating temperature range | 0 to +50 °C |
| Mass | 1.1 kg |
| Dimensions | 206 x 130 x 66 mm (with mounting rails) |

Linear Actuators & Motors

PiezoWalk® Motors / Actuators

PLine® Ultrasonic Motors

DC-Servo & Stepper Actuators

Piezo Actuators & Components

Guided / Preloaded Actuators

Unpackaged Stack Actuators

Patches/Benders/Tubes/Shear...

Nanopositioning / Piezoelectrics

Nanometrology

Micropositioning

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