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This product family has been replaced by the following new product:
>> E-753 Digital High-Speed Piezo Controller for Single-Channel Nanopositioning Systems

E-750

High-Speed Digital Piezo NanoAutomation® Controller



E-750.CP controller with P-752 NanoPositioning stage

- **Ultra-Fast Servo Loop: 90 µsec**
- **Optical FiberLink Interface (Optional): 1 Mbit/s**
- **DSP-Based Real-Time Operating System**
- **Additional High-Speed Analog Input**
- **AutoCalibration Function for NanoPositioning Systems with ID Chip**
- **All Servo-Parameters Stored in Flash ROM**
- **Autofocus Firmware Option**
- **GCS (General Command Set) Compatible**
- **Optional InputShaping®**

The new E-750.CP digital PZT controller offers unmatched responsiveness and precision for the most demanding OEM applications. Driving the ultra-fast P-752 and P-753 series nano-mechanisms, the E-750 provides sub-millisecond settling and sub-angstrom resolution.

Application Examples

- Head / media test
- Track profiling
- Scanning-probe microscopy
- Microablation and active optics

Three Interfaces, High-Speed FiberLink Interface

In addition to the RS-232 interface, the E-750 is equipped with an ultra-fast (1 Mbit/ sec) FiberLink Interface (distance up to 50 m) featuring complete electrical isolation to eliminate coupled EMI as a source of low-level position modulation. A high-bandwidth analog interface (-10 to 10 V) is also standard.

AutoCalibration

OEM customers will appreciate the AutoCalibration function, allowing random combination (and easy interchange) of controllers and NanoPositioning systems with factory default configuration. Calibration data, linearization data and optimized servo-control parameters are stored in each NanoPositioning system and read by the controller upon power-up.

Analog + Digital Linearization

A digital linearization algorithm and the exclusive use of precision components in the controller guarantee excellent linearity and position accuracy.
In addition, the ILS system (s. p. 5-6) is installed to linearize the sensor signal before the A/D converter.

The controller is equipped with a wide-range power supply for use throughout the world.

Optional InputShaping®

The E-750 complements ultra-low-noise PZT power amplifier, capacitive position sensing circuitry and sophisticated digital signal processing with fast servo-control algorithms. It is also the first system on the market offering PI's exclusive Mach™ Throughput Coprocessor technology (InputShaping®), which achieves the fastest possible overall system throughput by eliminating the effect of mechanical resonances (optional).

Ordering Information

E-750.CP
Digital NanoAutomation® Controller w/optical Interface

E-751.PCI
PCI Card with FiberLink Interface

E-751.PIO
Parallel-Port-to-Fiber Converter

Options

E-751.F05
5 m FiberLink Cable

Ask about custom designs!

Notes

Important Calibration Information: Please read details on p. 6-53.

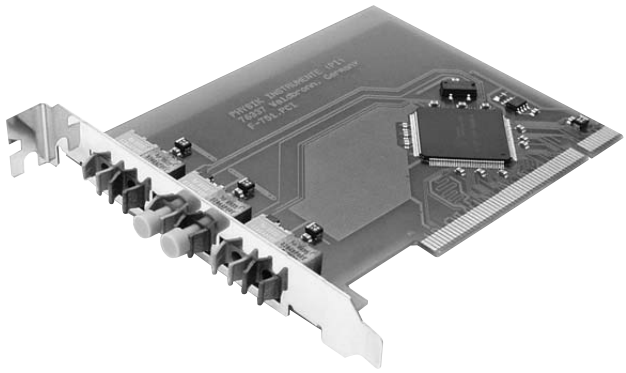


E-750.PIO parallel-port-to-fiber converter allows operation of the E-750 from a 24-bit, high-speed parallel-port interface

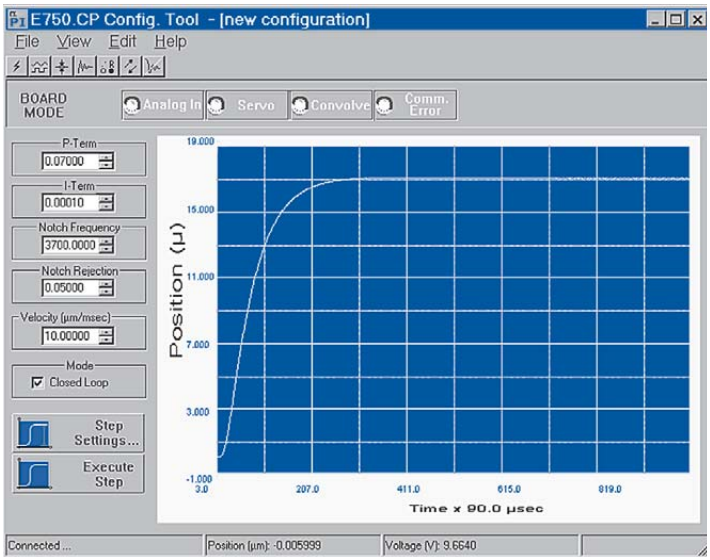
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>> E-753 Digital High-Speed Piezo Controller for Single-Channel Nanopositioning Systems



E-751.PCI, PCI card with FiberLink interface for operation of up to 3 independent E-750 controllers



E-750 software tool allows step-and-settle analysis and optimization of connected nanopositioning system.

Technical Data

Models	E-750.CP
Function	Digital NanoAutomation® Controller
Channels	1
Processor	32-bit floating point DSP, 50 MHz
Sampling rates	30 µs (Sensor), 90 µs (Servo Loop)
Effective resolution DAC	20 bits
Sensor types	Capacitive, two-plate sensors
Analog input	-10 to +10 V
RS-232 interface	115 kBit/s, BiSync protocol, ISO 1745-1975 (E)
Fiber-Link interface (optional)	1 MBit/s
Max. output power	10 W (see page 6-52)
Current limitation	Short-circuit proof
Output voltage range	-20 to +120 V
PZT and sensor connector	Combo sub-D; size DB, layout 7W2, 137W2SC30N40x (CONEC)
Dimensions	125 x 50 x 262 mm
Weight	2 kg
Operating voltage range	90-264 VAC, 50-60 Hz, 30 VA

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