

# E-612 · E-661

## High-Speed NanoAutomation® Piezo Controllers

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E-501.10 chassis with four E-612.C0 modules.

- 10  $\mu$ s Parallel Command Port
- OEM Modules and Bench-Top Versions
- Controls LVPZT NanoPositioners with Capacitive Sensors
- Opto-Isolation for EMI Immunity
- Integrated PZT Power Amplifier

The E-612.C0 is a high-speed, parallel-command-port amplifier and position servo-controller module for closed-loop piezo-driven nano-mechanisms with integrated capacitive displacement sensors.

### Notes

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

Standard versions come with a 10  $\mu$ s/command, 16-bit, electrically isolated input port for enhanced EMI immunity.

An additional high-bandwidth 0 to 10 V control input is available for analog control.

The E-612.C0 controller module is also equipped with a PZT voltage amplifier, providing -20 to 120 V with 80 mA sink and source capability.

The E-661.CP module is the compact, bench-top, stand-alone version of the E-612.C0. It comes with a metal case for EMI protection and an external power supply.

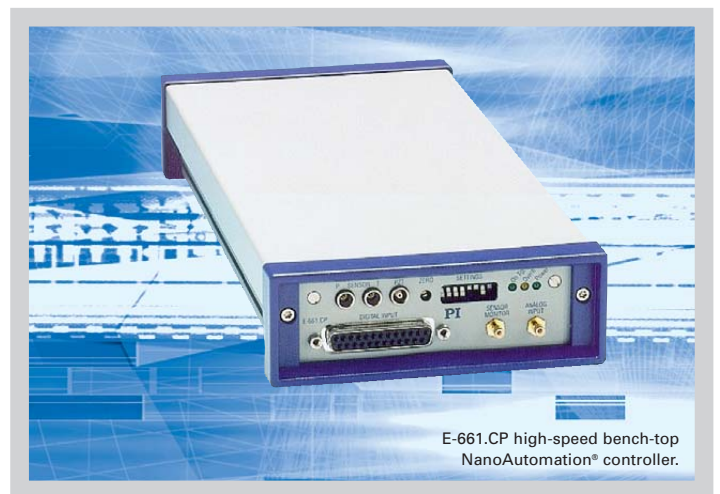
### Ordering Information

**E-612.C0**  
High-Speed NanoAutomation® Controller, Parallel Port, OEM Board

**E-661.CP**  
High-Speed NanoAutomation® Controller, Parallel Port, Bench-Top

**E-501.10**  
9.5" Bench-Top Chassis and Power Supply for 1 to 4 E-612.C0 Modules

Ask about custom designs!



E-661.CP high-speed bench-top NanoAutomation® controller.

### Technical Data (Chassis & Power Supply)

| Models                 | E-501.10   |
|------------------------|--|
| Function               | Chassis for 1 - 4, E-612.C0, high speed NanoAutomation® controller modules |
| Operating voltage      | 90-120 VAC, 50-60 Hz;<br>220-264 VAC, 50-60 Hz                             |
| Power supply           | linear regulated power supply, integrated                                  |
| P/S Output voltages    | +130 V, 0.2 A; -27 V, 0.2 A;<br>+24 V, 1 A; $\pm$ 15 V, 0.5 A; +5 V, 1 A   |
| Max. power consumption | 50 W   |
| Primary fuse           | 0.63 A slow  |
| Dimensions             | W: 236, H: 132; D: 296 + handles   |



E-612 high-speed NanoAutomation® controller board.

### Technical Data (Controller)

| Models                           | E-612.C0   | E-661.CP   |
|----------------------------------|--|--|
| Function                         | High-speed NanoAutomation® controller module                               | Bench-top high-speed NanoAutomation® controller          |
| Channels                         | 1  | 1  |
| <b>Capacitive Sensor Circuit</b> |  |  |
| Clock frequency                  | 1.6 MHz  | 1.6 MHz  |
| Bandwidth                        | 1.5 kHz  | 1.5 kHz  |
| <b>Amplifier</b>                 |  |  |
| Output voltage range             | -20 to +120 V  | -20 to +120 V  |
| Output power                     | 8 W  | 8 W  |
| Output current                   | 80 mA  | 80 mA  |
| Current limitation               | Short-circuit proof (5 minutes, shut-down)                                 | Short-circuit proof (5 minutes, shut-down)               |
| Bandwidth (no load)              | >500 Hz  | >500 Hz  |
| <b>Digital Circuit</b>           |  |  |
| Data                             | 16-bit   | 16-bit   |
| Input level                      | TTL  | TTL  |
| Timing                           | THmin 10 µs; TLmin 10 µs   | THmin 10 µs; TLmin 10 µs                                 |
| Input current                    | 10 mA  | 10 mA  |
| On-target indication             | On: target position ±0.025 % to 0.2 %, jumper selectable                   | On: target position ±0.025 % to 0.2 %, jumper selectable |
| <b>Analog Input / Output</b>     |  |  |
| Control voltage range            | 0 to 10 V  | 0 to 10 V  |
| Input impedance                  | 10 kΩ, 1 nF  | 10 kΩ, 1 nF  |
| <b>Sensor Monitor Output</b>     |  |  |
| Voltage range                    | -10 to +10 V (jumper selectable)   | -10 to +10 V (jumper selectable)                         |
| Output resistance                | 10 kΩ  | 10 kΩ  |
| Bandwidth                        | 1.5 kHz  | 1.5 kHz  |
| <b>Connectors</b>                |  |  |
| Digital interface                | 25-pin-sub-D   | 25-pin-sub-D   |
| Piezo                            | LEMO ERA.00.250  | LEMO ERA.00.250  |
| Sensor                           | LEMO EPL.00.250  | LEMO EPL.00.250  |
| Sensor monitor                   | SMB  | SMB  |
| Analog input                     | SMB  | SMB  |
| Power Requirements               | +5 V, 0.12 A, +/- 15 V, 0.16 A, +130 V, 80 mA max.; -27 V, 80 mA max       | 15 V, 2 A (external power supply included)               |
| Dimensions                       | Euroboard (64-pin rear connector).<br>Mating extender card: Mod. P-896.00) | 125 x 50 x 262 mm  |

Piezo Actuators

Nanopositioning &amp; Scanning Systems

Active Optics / Steering Mirrors

Tutorial: Piezo-electrics in Positioning

Capacitive Position Sensors

Piezo Drivers &amp; Nanopositioning Controllers

Hexapods / Micropositioning

Photonics Alignment Solutions

Motion Controllers

Ceramic Linear Motors &amp; Stages

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