

Q-Motion® Servo Controller, 1 Axis

For Piezoelectric Inertia Drives, TCP/IP, USB, RS-232 Interfaces



E-873

- Broadband encoder input
- Macro programmable for stand-alone functionality
- Fast startup due to ID chip detection
- Data recorder
- Digital I/O ports (TTL)
- Joystick for manual operation

Digital servo controller for piezo inertia drives

Integrated power amplifier and voltage generator for piezo inertia drives. Point-to-point motion, trapezoidal velocity profile, actuator mode for nanometer precision positioning at the target position. 1 axis.

Encoder inputs

Differential signal transmission for digital (A/B) or analog (sin/cos) encoder signals. BiSS interface for absolute encoders. TTL inputs for limit and reference point switches.

Interfaces

USB, RS-232, and TCP/IP (depends on version) for commanding. I/O lines (analog/digital) for automation. Interface for analog joystick.

Extensive functions, software support

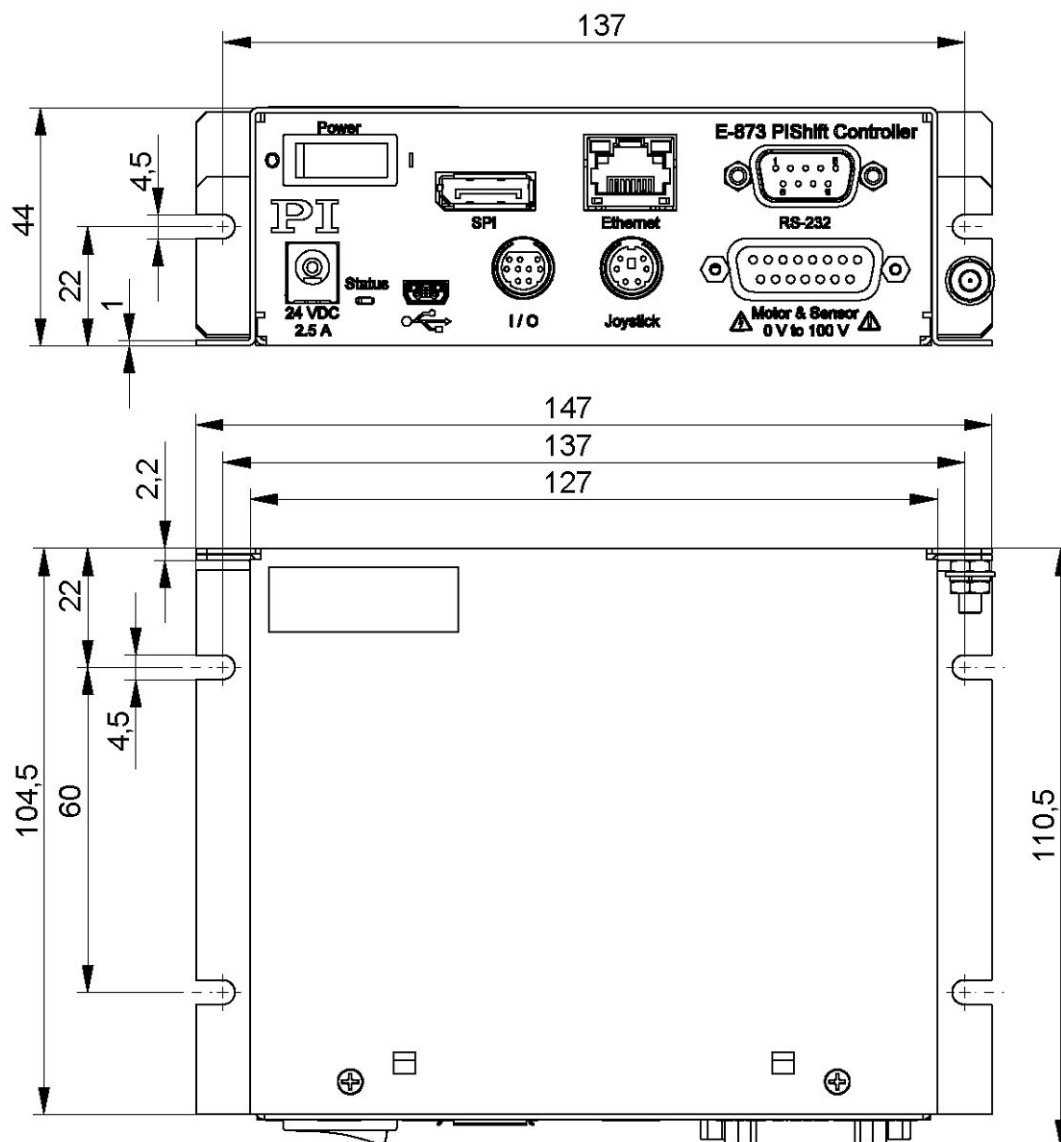
Powerful macro command language. Nonvolatile macro storage, e.g., for stand-alone operation with autostart macro. Data recorder. ID chip detection for fast startup. PID controller, parameter changing during operation. Extensive software support, e.g., for NI LabVIEW, C, C++, MATLAB, Python. PIMikroMove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

Specifications

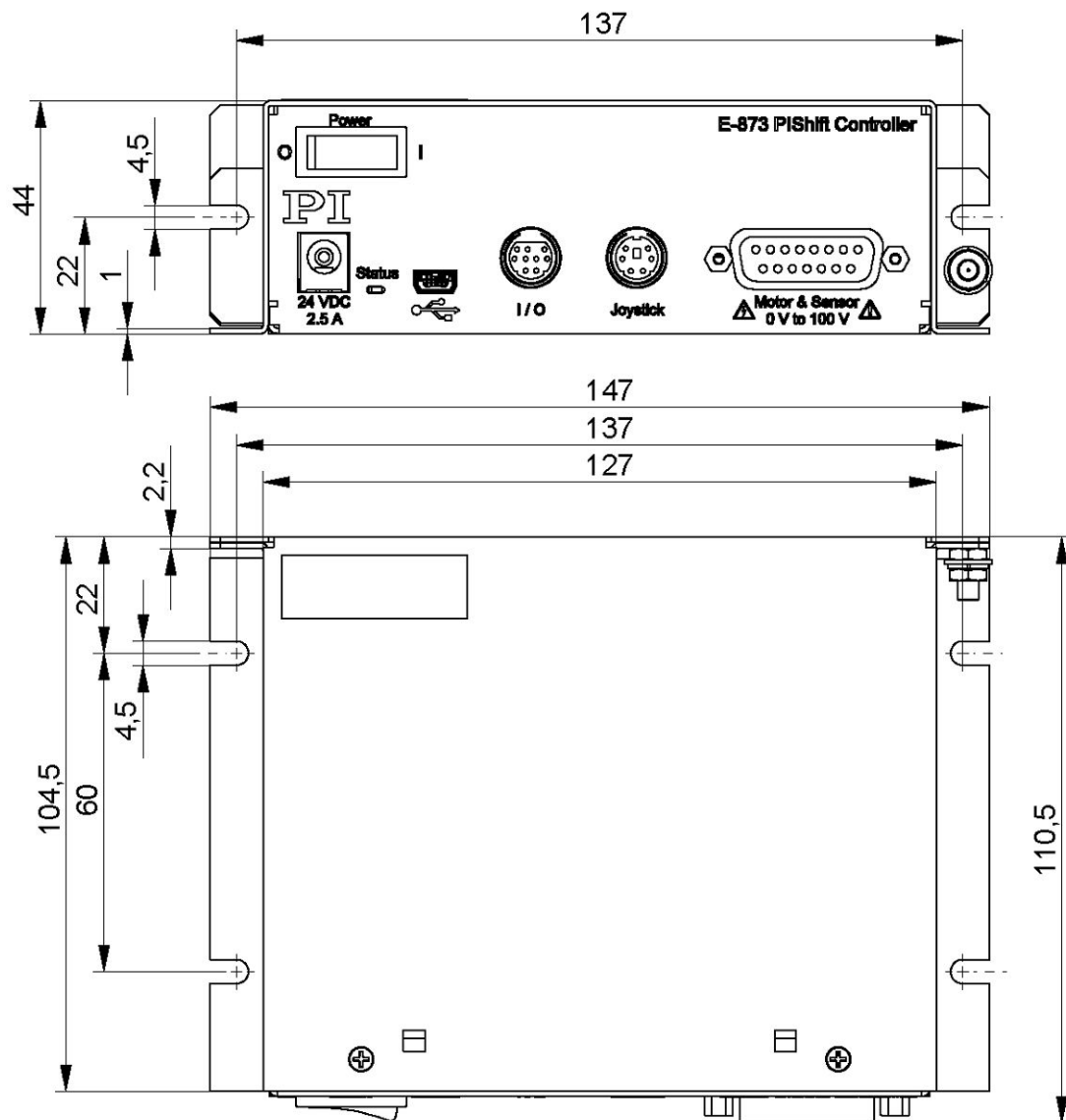
	E-873.1A1 - E-873.1AR - E-873.1AT
Function	Q-Motion® controller for positioning systems with piezo inertia drives, benchtop device (E-873.1A1) or benchtop device with option for control cabinet mounting (E-873.1AR/E-873.1AT)
Axes	1
Supported functions	Startup macro. Data recorder for recording operating data such as motor voltage, velocity, position or position error. Internal safety circuitry: Watchdog timer. ID chip detection.
Motion and control	E-873.1A1 - E-873.1AR - E-873.1AT
Controller type	PID controller, parameter changing during operation
Servo cycle time	50 µs
Dynamics profile	Trapezoidal velocity profile. Point-to-point motion.
Encoder input	Analog encoder inputs sine-cosine, interpolation selectable to 20000. Interpolation electronics preset to differential transmission, 1 V _{pp} and 2.5 V encoder signal offset. BiSS interface for absolute encoders.
Stall detection	Automatic motor stop
Input limit switch	2 × TTL (pull-up / pull-down, programmable)
Input reference point switch	1 × TTL for integrated reference in the encoder
Electrical properties	E-873.1A1 - E-873.1AR - E-873.1AT
Max. output power	30 W
Output voltage	0 to 100 V, drive-dependent selection
Interfaces and operation	E-873.1A1 - E-873.1AR - E-873.1AT
Communication interfaces	USB E-873.1A1, E-873.1AT additionally: SPI, TCP/IP, RS-232
Motor / sensor connection	Sub-D 15 socket (f)
I/O lines	4 analog / digital inputs, 4 digital outputs
Command set	PI General Command Set (GCS)
User software	PIMikroMove
Application programming interfaces	API for C / C++ / C# / VB.NET / MATLAB / Python, drivers for NI LabVIEW
Manual control (optional)	Joystick
Miscellaneous	E-873.1A1 - E-873.1AR - E-873.1AT
Operating voltage	24 V DC from external power adapter (in the scope of delivery)
Max. current consumption	1.5 A
Operating temperature range	0 to 50 °C
Mass	E-873.1AR: 0.3 kg E-873.1AT: 0.335 kg E-873.1A1: 1.07 kg
Dimensions	E-873.1A1: 120 mm x 170 mm x 53.4 mm E-873.1AR, E-873.1AT: 137 mm x 105 mm x 43.82 mm

Ask about customized versions.

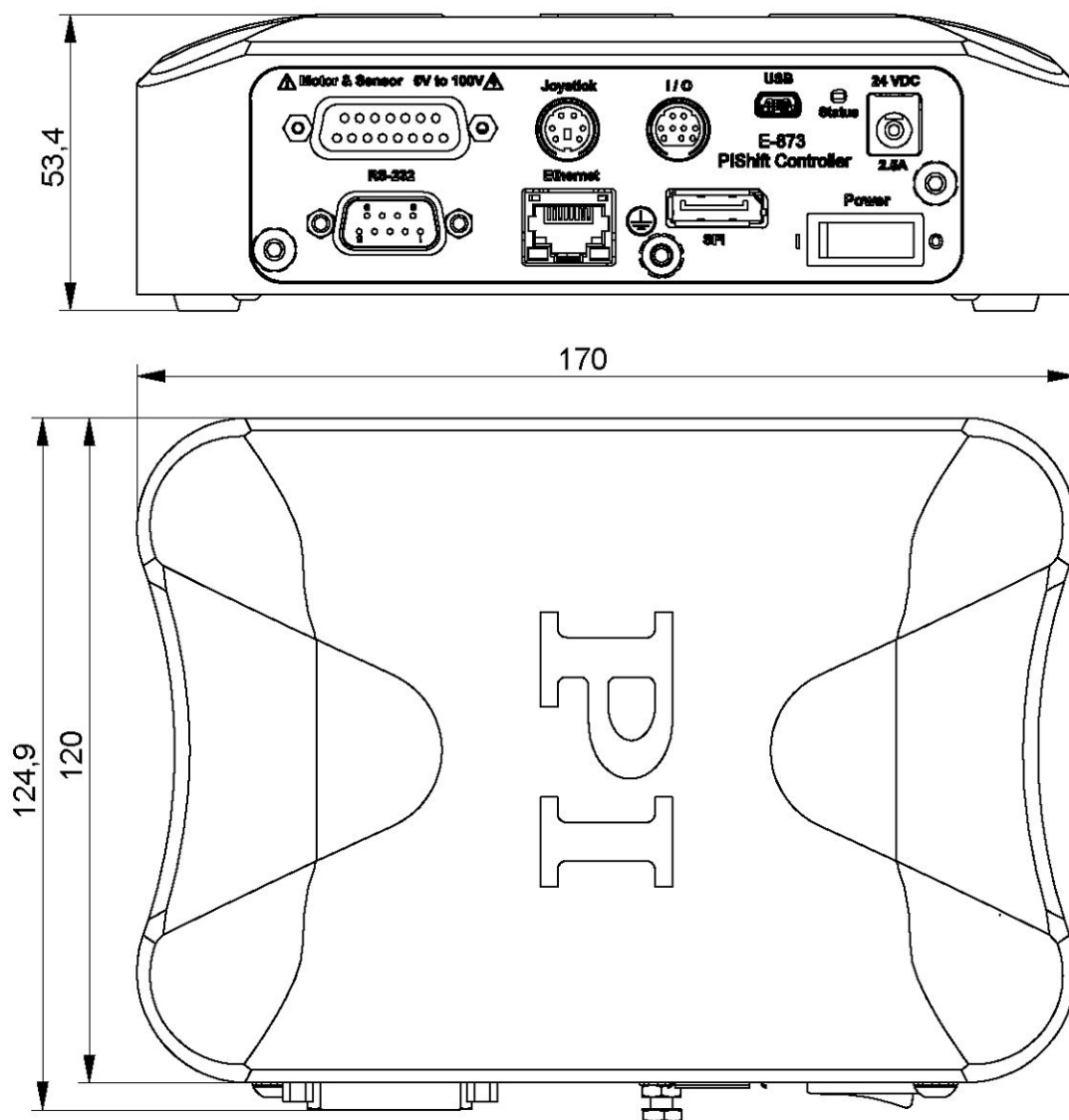
Drawings / Images



E-873.1AT, dimensions in mm



E-873.1AR, dimensions in mm



E-873.1A1, dimensions in mm

Ordering Information

E-873.1A1

Q-Motion® controller for piezoelectric inertia drives, 1 axis, benchtop device, SPI, TCP/IP, USB, RS-232, I/O, joystick

E-873.1AT

Q-Motion® controller for piezoelectric inertia drives, 1 axis, benchtop device (industry), SPI, TCP/IP, USB, RS-232, I/O, joystick

E-873.1AR

Q-Motion® controller for piezoelectric inertia drives, 1 axis, benchtop device (industry), USB, I/O, joystick