Mercury Step Stepper Motor Controller, 1 Axis

For Closed-Loop and Open-Loop Operation, HD Sub-D 26, 48 V

C-663.12

- High microstep resolution
- Operating voltage up to 48 V
- Closed-loop operation of 2-phase stepper motors
- Support for external sensors
- Daisy chain networking

Mercury Step controller for 2-phase stepper motors
1 axis. Microstep resolution: 1/2048 full step. Closed-loop operation. Point-to-point motion, trapezoidal velocity profile. Networkable via daisy chain.

Encoder inputs
Differential signal transmission for digital (A/B) encoder signals. TTL inputs for limit and reference switches. Input for RS-422 signals for index switch.

Interfaces
USB and RS-232 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

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Function	Mercury Step stepper motor controller
Drive types	2-phase stepper motor
Axes	1
Supported functions	Point-to-point motion. Startup macro. Data recorder for recording operating data such as velocity, position or position error. Internal safety circuitry: Watchdog timer. ID chip detection (for future use).

Motion and control	C-663.12
Controller type	PID, parameter changing during operation
Servo cycle time	50 µs
Dynamics profile	Trapezoidal velocity profile
Microstep resolution	1/2048 full step
Encoder input	A/B quadrature, TTL, RS-422; 60 MHz
Limit switches	2 × TTL, programmable
Reference switch	1 × TTL, programmable
Index switch	1 x RS-422 for index pulse
Stall detection	Automatic motor stop when a programmable position error is exceeded (only in conjunction with sensor)

Electrical properties	C-663.12
Max. output voltage*	0 V to operating voltage, for direct control of stepper motors
Max. output power	60 W
Average output power	48 W
Power consumption, full load	48 W (max.)
Power consumption without load	3 W
Current limitation per motor phase	2.5 A

Interfaces and operation	C-663.12
Communication interfaces	USB, RS-232
Motor / sensor connection	HD Sub-D 26 (f)
Controller network	Up to 16 units on a single interface**
I/O lines	4 analog / digital inputs (0 to 5 V / TTL), 4 digital outputs (TTL)
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	Joystick, Y-cable for 2-D motion, pushbutton box

Miscellaneous	C-663.12
Operating voltage	24 to 48 V DC from external power adapter (48 V DC power adapter in the scope of delivery)
Max. current consumption	40 mA without load (when supplied with 48 V) 80 mA without load (when supplied with 24 V)
Operating temperature range	5 to 50 °C (temperature protection switches off at excessively high temperatures)
Mass	0.48 kg
Dimensions	130 mm × 76 mm × 40 mm (incl. mounting rails)

* Depending on the power adapter used
** 16 units with USB; 6 units with RS-232

Ordering Information

C-663.12
Compact Mercury Step stepper motor controller, 1 axis, closed-loop and open-loop operation, HD Sub-D 26, 48 V