

## C-663.12

### Mercury Step Stepper Motor Controller

1 Axis, for Closed-Loop and Open-Loop Operation, HD Sub-D 26, 48 V



- High microstep resolution
- Operating voltage to 48 V
- Open-loop and 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. Open-loop and closed-loop operation. Point-to-point motion, trapezoidal velocity profile. Networkable via daisy chain.

#### Extensive functionality

Powerful macro command language. Nonvolatile macro storage, e.g., for stand-alone functionality with autostart macro. Data recorder. ID chip for fast start-up. Parameter changing during operation. Extensive software support, e.g., for LabVIEW, dynamic libraries for Windows and Linux.

#### Interfaces

USB and RS-232 for commanding. Differential signal transmission for digital (A/B) encoder signals. TTL inputs for limit and reference point switches. Input for RS-422 signals for index switch. I/O lines (analog/digital) for automation. Interface for analog joystick.

Scope of delivery incl. 48-V wide-range-input power supply, USB cable, RS-232 cable, network cable for daisy chain and plug adapter for stages with Sub-D 15 connection

#### Related and compatible products

##### Related products

C-663.10C885 Mercury Step Stepper Motor Controllermodul

C-863 Mercury Servo Controller

### Suitable for the following mechanics

Respective models of the following series equipped with stepper motor:

L-220 High-Resolution Linear Actuator  
 L-239 High-Load Linear Actuator  
 L-402 Miniature Linear Stage  
 L-406 Compact Linear Stage  
 L-509 Precision Linear Stage  
 L-511 High-Precision Linear Stage  
 L-611 Precision Rotation Stage  
 L-731 Precision XY stage  
 M-060 • M-061 • M-062 Precision Rotation Stage  
 M-110 • M-111 • M-112 Compact Micro-Translation Stage  
 M-116 Precision Rotation Stage  
 M-126 High-Resolution Translation Stage  
 M-228 • M-229 High-Resolution Linear Actuator with Stepper Motor  
 M-230 • M-231 • M-232 High-Resolution Linear Actuator with DC and Stepper Motor  
 M-403 • M-404 Precision Translation Stage  
 M-406 Precision Linear Stage  
 M-413 M-414 High-Load Precision Stage  
 M-451 High-Load Precision Z Stage  
 M-505 Micropositioning Stages with Ballscrew Drives  
 M-511 • M-521 • M-531 High-Precision Linear Positioning Stage

### Specifications

<b>C-663.12</b>	
Function	Mercury Step stepper motor controller
Drive types	2-phase stepper motor
Axes	1
<b>Motion and control</b>	
Servo characteristics	PID, parameter changing during operation
Servo cycle time	50 µs
Dynamics profile	Trapezoidal velocity profile, point-to-point motion
Microstep resolution	1/2048 full step
Encoder input	A/B quadrature, TTL, RS-422; 60 MHz
Limit switches	2 × TTL, programmable
Reference point switches	1 × TTL, programmable
Index switch	1 × RS-422 for index pulse
Stall detection	Automatic motor stop when a programmable position error is exceeded (only in conjunction with sensor)
<b>Electrical properties</b>	
Operating voltage	24 to 48 V DC from external power supply (in scope of delivery)
Max. output voltage*	0 V to operating voltage, for direct control of stepper motors

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Power consumption, full load	48 W (max.)
Power consumption, no load	3 W
Max. output power (< 2 ms)	100 W
Average output power	< 48 W
Current limitation per motor phase	2.5 A
<b>Interfaces and operation</b>	
Communication interfaces	USB, RS-232
Motor / sensor connection	HD Sub-D 26 (w)
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, PITerminal
Software drivers	LabVIEW driver, dynamic libraries for Windows and Linux, MATLAB library
Supported functions	Start-up 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)
Manual control	Joystick, Y cable for 2-D motion, pushbutton box
<b>Miscellaneous</b>	
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 supply used

\*\* 16 units with USB; 6 units with RS-232

## Ordering Information

### **C-663.12**

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