

## Mercury Servo Controller

1 Axis, for DC Motors and PWM Motor Drivers



### C-863

- High-speed encoder input to 60 MHz
- Powerful macro programming language, e.g., for stand-alone operation
- Nonvolatile memory for macros and parameters
- Data recorder
- Daisy chain networking
- Connector for joystick

#### Digital motion controller for DC servo motors

1 axis. Motion control of PI positioning systems with DC motor: Direct motor control; PWM control for fast PI stages with integrated ActiveDrive amplifiers or with brushless motors and integrated block commutation. PID controller. Supports motor brake.

#### Interfaces and communication

USB and RS-232 interface for commanding. A/B quadrature encoder input. TTL inputs for limit and reference point switches. I/O lines (analog/digital) for automation. Connector for analog joystick. Daisy chain networking for up to 16 axes operated via a common computer interface.

#### Extensive functions, software support

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

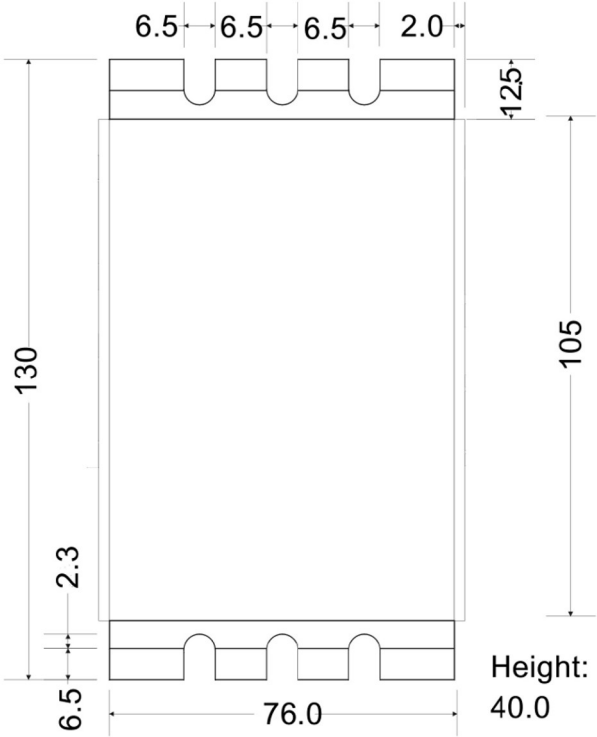
## Specifications

C-863.11 / C-863.12		
Function	DC motor control	
Drive types	DC motor, servo controlled Motors with PWM control, e.g., ActiveDrive amplifiers or brushless motors with integrated block commutation	
Axes	1	
Supported functions	Point-to-point motion. Startup macro. Data recorder for recording operating data such as motor voltage, velocity, position or position error. Internal safety circuitry: Watchdog timer. C-863.12 additional: ID chip detection	
Motion and control		
Controller type	PID controller, parameter changing during operation	
Servo cycle time	50 $\mu$ s	
Profile generator	Trapezoidal velocity profile	
Encoder input	A/B quadrature single-ended or differential TTL signal acc. to RS-422; 60 MHz	
Stall detection	Automatic motor stop when a programmable position error is exceeded	
Limit switches	2 $\times$ TTL (programmable polarity)	
Reference point switch	1 $\times$ TTL	
Motor brake	1 $\times$ TTL, can be switched by software	
Electrical properties		
	C-863.11	C-863.12
Max. output voltage*	0 V to operating voltage, for direct control of DC motors	0 V to operating voltage, for direct control of DC motors
Max. output power	30 W	60 W
Average output power	45 W	48 W
Power consumption, full load	30 W	48 W
Power consumption without load	2 W	3 W
Current limitation	2 A	2.5 A
Interfaces and operation		
Communication interfaces	USB; RS-232, Sub-D 9 (m)	
Motor connector	C-863.11: Sub-D 15 (f) / C-863.12: HD Sub-D 26 (f)	
Controller network	Up to 16 units** on a single interface	
I/O lines	4 analog / digital inputs, 4 digital outputs (TTL), 5 V 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-863.11	C-863.12
Operating voltage	15 to 30 V DC from external power adapter (15 V DC power adapter in the scope of delivery)	24 to 48 V DC from external power adapter (24 V DC power adapter in the scope of delivery)
Max. current consumption	80 mA without load (when supplied with 24 V)	40 mA without load (when supplied with 48 V) 80 mA without load (when supplied with 24 V)
Operating temperature range	5 to 50 $^{\circ}$ C	5 to 50 $^{\circ}$ C (temperature protection switches off at excessively high temperatures)
Mass	0.3 kg	0.48 kg
Dimensions	130 mm $\times$ 76 mm $\times$ 40 mm (incl. mounting rails)	130 mm $\times$ 76 mm $\times$ 40 mm (incl. mounting rails)

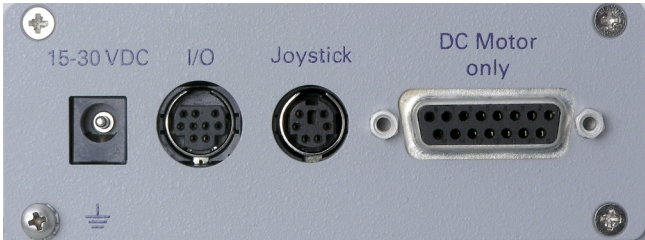
\* The output voltage depends on the connected power supply.

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

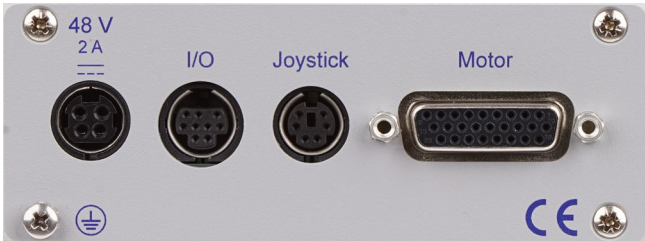
## Drawings / Images



C-863, dimensions in mm



C-863.11: Rear view



C-863.12: Rear view



*Scope of delivery: Short instructions (detailed user documentation is currently available for download), CD with user software, drivers, and documentation, USB and RS-232 cable for connecting to the host PC, daisy chain network cables, and wide input range power supply with power cord.*

## Ordering Information

### **C-863.11**

Mercury servo controller, for DC motors and PWM motor driver, 1 axis, D-sub 15, USB, RS-232, I/O, connector for analog joystick

### **C-863.12**

Mercury servo controller, for DC motors and PWM motor driver, 1 axis, HD D-sub 26, USB, RS-232, I/O, connector for analog joystick

## Accessories

### **C-863.AD11**

Power amplifier for DC motors to 120 W, for inductive limit switches, D-sub 25 (motor), D-sub 9 (sensor), D-sub 15 (controller)

### **C-863.AD12**

Power amplifier for DC motors to 120 W, for mechanical, optical, and Hall effect limit switches, D-sub 25 (motor), D-sub 9 (sensor), D-sub 15 (controller)

### **C-819.20**

Analog joystick for 2 axes

### **C-819.20Y**

Y cable for connecting 2 controllers to a joystick C-819.20

### **C-170.IO**

I/O cable, 2 m, open end

### **C-170.PB**

Pushbutton box with 4 buttons and 4 LEDs