Motion Controller for DC Motors, 4 or 6 Axes

For Positioners with Closed-Loop DC Motor, USB, RS-232, TCP/IP, SPI, I/O, Joystick

C-884.4DC • C-884.6DC

- PID servo control with dynamic parameter switching

- Powerful macro programming language, e.g., for stand-alone operation

- Data recorder

- Integrated interfaces: USB, RS-232, Ethernet, SPI, I/O, joystick

- Trajectory support for 1- or 2-D motion patterns

Digital motion controller for DC servo motors

4 or 6 axes. Dual-core architecture for increased performance and flexibility by separating command processing and position control. Simple adaptation / extension possible for OEM products. Motion control of PI positioning systems with DC motors: Direct motor control, PWM control for PI positioning stages with integrated ActiveDrive amplifiers or integrated block commutation (brushless motors). Supports motor brake.

Motion profiles

Point-to-point, trapezoidal velocity profile. User-definable trajectories (e.g., circles, sine curves) from externally fed points.

Interfaces and communication

Interfaces: TCP/IP, USB and RS-232 for commands. A/B quadrature encoder input. TTL inputs for limit and reference point switches. I/O lines (analog/digital) for automation. USB interface for human interface devices.

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.

24.10.2018

Specifications

C-884.4DC / C-884.6DC	
Function	Position control for closed-loop DC motors
Processor	Dual-core architecture. Controller on a DSP core, with extendable command interpreter in an ARM core under Linux
Axes	C-884.4DC: 4 / C-884.6DC: 6
Supported functions	Linear vector motion. Point-to-point motion. User-definable trajectories. Startup macro. PI Python. Data recorder for recording operating data such as motor voltage, velocity, position or position error. ID chip detection.

Motion and servo controller	C-884.4DC / C-884.6DC
Controller type	PID controller, changing a parameter during operation
Servo cycle time	100 µs
Profile generator	Trapezoidal velocity profile
Encoder input	A/B quadrature (TTL differential according to RS-422), 50 MHz; BiSS interface
Stall detection	Automatic motor stop when a programmable position error is exceeded
Limit switches	2 × TTL per axis (programmable polarity)
Reference point switch	1 × TTL per axis
Motor brake	1 × TTL per axis, can be switched by software

Electrical properties	C-884.4DC / C-884.6DC
Max. output voltage*	24 V
Max. output power	240 W
Current limitation	2.5 A per axis

Interfaces and operation	C-884.4DC / C-884.6DC
Communication interfaces	TCP/IP: RJ45/Ethernet; USB: Mini-USB type B; RS-232: Sub-D 9 (m); SPI: DisplayPort
Motor connector	Sub-D 15 (f)
I/O lines	4 analog inputs (-10 to 10 V), resolution: 10-bit 4 digital inputs (5 V TTL) 4 digital outputs (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	USB interface for HID-compliant devices

Miscellaneous	C-884.4DC / C-884.6DC
Operating voltage	External power adapter 24 V / 5 A (120 W) in the scope of delivery
Max. current consumption	C-884.4DC: 11 A / C-884.6DC: 16 A
Current consumption without load	500 mA
Operating temperature range	5 to 50 °C
Mass	C-884.4DC: 1.77 kg / C-884.6DC: 1.97 kg
Dimensions	312 mm × 153.4 mm × 59.2 mm (incl. mounting rails)

* The output voltage depends on the connected power supply.

Ordering Information

C-884.4DC
Controller for DC motors, 4 axes, USB, RS-232, Ethernet, SPI, I/O, joystick connector

C-884.6DC
Controller for DC motors, 6 axes, USB, RS-232, Ethernet, SPI, I/O, joystick connector

24.10.2018