

C-848

Multi-Axis DC-Motor Controller



C-848.40 DC-Motor Controller with various PI-stages: M-112.2DG micro-translation stage; M-232.17 DC-Mike, M-062.DG rotary stage and M-235.5DG heavy duty DC-Mike.

PI General Command Set
Compatible

- **Integrated Linear Power Amplifiers and PWM Outputs**
- **Simultaneous Control of up to 4 DC Servo-Motors**
- **Powerful Macro Command Language**
- **Programmable Torque Limit**
- **Fast 32-bit Digital PID V-ff Servo Loop**
- **16 I/O Lines for Flexible Automation**
- **Electronic Gearing**
- **Motor-Brake Control Output**
- **Extensive Software Support**
- **RS-232 and Optional IEEE-488.2 Interfaces**

The C-848 is a flexible, multi-purpose, rackmount positioning and motion controller for DC servo-motors. It is designed for general positioning and automation tasks in research and industry.

Flexibility, Multi-Processor Architecture

Based on a rugged, high-performance industrial PC, the C-848 offers the flexibility

required in today's demanding and rapidly changing automation, prototyping and production processes. In addition to the general processor handling communication and macro command execution, a fast DSP motion-control chip set is dedicated to trajectory generation and servo-control based on position information supplied by incremental encoders (linear scales, rotary encoders). In addition to 3 inputs per channel for limit switches and home position, eight TTL inputs and eight TTL outputs are available for flexible automation.

The C-848 provides flexible and fast high-level-command handling and has advanced features such as stackable macros. The command language complies with the PI General Command Set, which is a user-friendly, well structured language reflecting the device's functionality. The C-848 also offers advanced features such as linear interpolation, electronic gearing, real-time origin position capture and fast 32-bit PID +V-ff servo-control parameters (can be changed on-the-fly).

Integrated Servo Amplifiers / PWM Output

Integrated, low-noise, 5-watt linear power amplifiers allow operation of any PI micropositioning system without additional external amplifiers, reducing costs and simplifying the setup. In addition to the linear motor drivers, PWM (pulse width modulation) output signals are available to drive PI micropositioning stages equipped with ActiveDrive™ motors (e.g. M-511.DD, M-126.PD) or

external PWM power amplifiers from other manufacturers.

Easy-to-Use Software / Programming

For ease of operation, the C-848 is compatible with the PI General Command Set, designed to allow flexible combinations with other PI motion controllers (fiber aligners, stepper-motor controllers and piezo controllers for ultra-fast, sub-nanometer motion control). This intuitive command set saves valuable programming time by its convenient and easy-to-remember structure.

Control of the C-848 is provided through the RS-232 or an optional IEEE-488 interface. For manual control, the unit can be operated with a C-819.10 joystick.

In addition to an ample array of software tools such as LabVIEW™ drivers and DLL libraries, the C-848 comes with the operating software C-848 Control providing all functions for single command execution as well as macro command facilities.

To facilitate setup, any supported PI MicroPositioning stage just needs to be selected from a menu and all default control parameters will be set. The C-848 can also run in stand-alone mode, and a standard computer keyboard and monitor can be plugged for direct programming.

PI General Command Set

The C-848 is to a large extent freely programmable and its command structure conforms to the PI General Command Set. This command set is common to most PI piezo and motor controllers, and is de-

Ordering Information

C-848.40
DC-Motor Controller, 4 Axes,
19" Rack Mount, RS-232

C-848.40i
DC-Motor Controller, 4 Axes,
19" Rack Mount, RS-232 and IEEE488

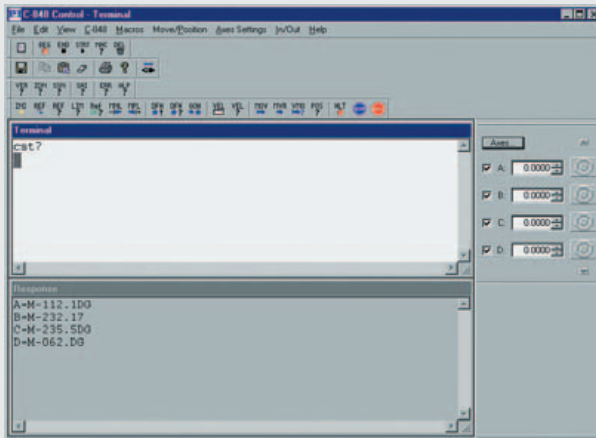
C-848.20
DC-Motor Controller, 2 Axes,
19" Rack Mount, RS-232

C-848.20i
DC-Motor Controller, 2 Axes,
19" Rack Mount, RS-232 and IEEE488

Accessories
C-819.10
Analog Joystick



Easy configuration of the C-848 motion controller.



C-848 Control

signed for multi-axis operation. This greatly reduces the effort required to produce custom programs, especially in environments which include a number of different controllers. Included with the C-848 is user-interface software as well LabView™ and other driver sets.

Technical Data

Model	C-848
Function	Rack-mountable DC-servo-motor controller
Channels	4 (C-848.40), 2 (C-848.20)
Servo characteristics	32-bit programmable PID V-fly filter, 100 µs/ enabled axis; parameter changes on-the-fly
Profile modes	Trapezoidal, electronic gearing
Output power / resolution	Analog H-bridge ± 12 V, 5 watts/channel, 12-bit D/A converters, optional output for PWM drivers (10 bit, 24 kHz)
Current limitation	1 A peak (short-circuit proof)
Encoder input	AB (quadrature) TTL signals (single-ended or RS-422 differential mode), max. 10 ⁶ counts/sec
Stall detection	Motor stop, triggered by programmable position error
Limit switches (per axis)	2 TTL programmable soft limits
Origin switches (per axis)	1 TTL real-time position capture
I/O ports	8 TTL inputs, 8 TTL outputs (pull-up)
Motor brake output	12 V, software controllable
Interface / Communication	RS-232 (cable included), (IEEE 488.2 optional)
Command Set	> 100 high-level commands, PI General Command Set compatible
Host software & programming Tools	C-848 Control statt operating program, LabView™ drivers, libraries for C, Pascal, BASIC for Windows™
Firmware updates	By floppy disk drive
Motor connectors (per axis)	15-pin (f) sub-D
Operating voltage	90 to 264 VAC, 50 to 60 Hz, wide range P/S
Dimensions	447 x 450 x 90 mm (19" rack mountable)
Weight	8.4 kg