

C-860

Mercury™ Palm Top DC Motor Controller

(Preliminary Datasheet)



Mercury™ Palm Top Controller with M-110 Micro Stage

- ORDERING INFORMATION**
- C-860.00**
Mercury Palm Top DC Motor Controller, Master Set (Address = 0), Including Power Supply
 - C-860.S1**
Mercury Palm Top DC Motor Controller, Slave Set, Address = 1, Including Power Supply
 - C-860.S2**
Same as C-860.S1 but Address Set to 2
 - C-860.S3**
Same as C-860.S1 but Address Set to 3
 - C-860.10**
Mercury Palm Top DC Motor Controller, w/o Power Supply
 - C-890.P12**
Wide range power supply for Mercury Controller

- High Performance at Low Cost
- Compatible with all PI DC-MicroPositioners, **no External Amplifier Required**
- Ideal for OEM Applications
- Stand-Alone Functionality
- Network Feature for Multi-Channel Applications
- Macro Command Language
- High Level Command Language Interface
- Non-Volatile EEPROM for Macros and Parameter Settings
- 31-bit Position, Velocity, and Acceleration Registers
- Digital PID Filters with 16-bit Coefficients
- Parameters can be Changed On-the-Fly
- Quadrature Incremental Encoder Interface
- Software for Win 95, 98, NT
- TTL Inputs for Limit & Origin Switches
- Motor Brake Control Output

The new Mercury™ Palm Top DC Motor Controller is the optimal solution for motion control applications where a single-axis precision positioner is to be controlled by a PC or PLC.

Application examples: Flexible automation, quality control, test equipment, photonics packaging, fiber alignment.

Integrated Amplifier & PWM Outputs

The unique Mercury™ concept combines a high performance motion controller and an integrated power amplifier in an extremely small package. Additional PWM control output lines allow the direct operation of all DC-Motor driven PI micropositioning systems, even high speed stages, such as the M-500 ActiveDrive™ Translation Stages, reducing costs, increasing reliability and simplifying the set-up.

Dual Processor Architecture

The Mercury™ controller employs a highly specialized processor (LM629) providing high performance PID motion control with many options of trajectory generation and filter settings. Position, velocity and other motion parameters can be changed on-the-fly. For additional system safety and performance, all communication and command parsing processes are handled by a second, independent processor.

Any quadrature TTL incremental encoder can be used for position feedback (linear scales and rotary encoders, interferometers).

Limit switch, and origin switch inputs and a motor brake output are standard, too.

Macro Command Language

The Mercury controller offers a high level Mnemonic Command Language with **Macro** and **Compound** command functionality. Macros can be stored in the non-volatile EEPROM for later recall. An auto start macro is available to run automation tasks after power up (no computer communication required!).

Network Capability

Up to 6 Mercury™ controllers can be networked for multi-axis motion control applications. Each set includes **software**, the C-890.P12 wide range **power supply** and an RS-232 **communication cable**. Slave sets come with a matching slave communication cable and the individual address setting (can also be changed by the user).

Partial Listing of Commands

- DH Define Home position
- MR Move Relative
- SV Set Velocity
- DD Define Derivative gain
- TP Tell Position
- EM Execute Macro

TECHNICAL DATA:	
Function	Stand alone DC-Servo Motor Controller
Servo characteristics	31 bit velocity, acceleration & position registers, 16 bit programmable PID, 256 μs, parameter changes on-the-fly
Output power	6 Watts PWM on board, additional output for PWM drivers
Encoder input	A/B (quadrature),TTL signals (single ended or RS-422 differential mode), max. 10 ⁶ counts / sec
Stall detection	Motor stop, servo off, triggered by programmable position error
Limit switches	2 TTL (pull-up/ pull-down, programmable)
Origin switches	1 TTL (pull-up/ pull-down, programmable), real time position capture
Motor brake output	5 V TTL , software controllable
Interface / Communication	RS-232, 9 pin (m) D-sub (cable included)
Command Set:	> 40 high level mnemonic commands, ASCII format, compound & macro command capability (non-volatile EEPROM)
Motor connectors	15 pin (f) D-sub
Internal safety features	"Watchdog" timer
Operating voltage	12 - 15 V, 1 - 2 A
Dimensions	40 x 68 x 130 mm
Weight	0.3 kg

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