

# Digital Piezo Controller Module for C-885 PIMotionMaster

For Piezo Actuator Nanopositioning Systems with Capacitive Sensor, 1 Axis



## E-709.1CC885

- Linearity error to 0.02 %
- Comprehensive I/O functions
- Wave generator
- Data recorder
- Extensive software support

### Digital controller for single-axis piezo nanopositioning systems

DSP/ARM processor with 150 MHz and 32-bit floating point accuracy. 10 kHz sensor update rate. P-I controller, two notch filters. Linearization algorithms based on 5th-order polynomials. Voltage range -30 to 130 V.

### Extensive functions, software support

Wave generator. Data recorder. Autozero. Trigger I/O. Software-configurable parameters. Extensive software support, e.g., for LabVIEW, C, C++, MATLAB, python; compatible with  $\mu$ Manager, MetaMorph, Andor iQ. PIMikroMove user software.

### Plug-and-play installation in the C-885 PIMotionMaster

Can be inserted in any free slot. Automatic detection and external communication (USB, Ethernet) by the processor and interface module of the C-885. Can be expanded with optional digital inputs and outputs. Power via the power supply of the C-885.

## Specifications

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Function	Controller module for piezo nanopositioning systems, for C-885 PIMotionMaster modular multi-axis controller system
Axes	1
Supported functions	Wave generator. Data recorder. Autozero. Trigger I/O.
Processor	DSP 32-bit floating point, 150 MHz
Controller type	P-I, 2 notch filters
Sampling rate, servo control	10 kHz
Sampling rate, sensor	10 kHz

Sensor	
Sensor type	Capacitive
Linearization	5th order polynomials
Sensor bandwidth	5 kHz
Sensor resolution	16 bit
External synchronization	For C-885 PIMotionMaster not supported

Amplifier	
Output voltage	-30 V to 130 V
Peak output power (<5 ms)	10 W
Average output power (>5 ms)	5 W
Peak current (<5 ms)	100 mA
Average output current (>5 ms)	50 mA
Current limitation	Short-circuit proof
Resolution DAC	17 bit

Interfaces and operation	
Communication interfaces	USB or Ethernet, via C-885.M1 / C-885.M2 Digital Processor and Interface Module
Piezo / sensor connection	Sub-D special connector
I/O connector	HD Sub-D 26 (f) 1 analog input 0 to 10 V 1 sensor monitor 0 to 10 V 1 digital input (LVTTTL, programmable) 1 analog output 5 digital outputs (LVTTTL, 3x predefined, 2x programmable)
Command set	PI General Command Set (GCS)
User software	PIMikroMove
Application programming interfaces	API for C / C++ / C# / VB.NET / MATLAB / python, drivers for LabVIEW, compatible with MetaMorph, µManager, Andor iQ

Electrical properties and environment	
Operating voltage	24 V DC, supply via C-885 PIMotionMaster
Max. power consumption	24 W
Operating temperature range	5 to 50°C (above 40°C, power derated)
Dimensions	186.42 mm × 128.4 mm (3 RU) × 19.98 mm (4 HP)
Mass	280 g

## Ordering Information

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Digital Piezo controller module for PIMotionMaster, 1 axis, -30 to 130 V, capacitive sensor