

Digital Motion Controller

FOR NEXLINE PIEZO STEPPING DRIVES

E-712.1AM



- + Special control algorithms for NEXLINE® nanopositioning linear- motor actuators
- + Highly stable 20- bit D/ A converter
- + Servo frequency 50 kHz
- + Flexible interfaces: Ethernet, RS-232, USB

Digital Motion Controller

The E-712.1AM is a high- performance single channel piezo controller for high- precision and powerful NEXLINE® drives with incremental encoders. It is equipped with high- performance, low- noise amplifiers and is capable of controlling NEXLINE® step algorithms. The P- I controller offers 2 configurable notch filters.

Comprehensive Functions

The controller is equipped with a data recorder and a wave generator. The comprehensive software package also contains LabVIEW drivers and shared libraries for Windows and Linux.

Interfaces

Ethernet, USB, RS-232 as well as 8 digital inputs and outputs each for triggers. The LEMO interface enables external synchronization.

NEXLINE®

High- load stepping drives combine piezo clamping and shear actuators, in order to move a rod. The drives feature particularly high forces and stiffnesses. They are capable of dynamically compensating oscillations in the range of a few micrometers with nanometer resolution.

Fields of application

Industry and research. Semiconductor manufacturing and inspection.

Specifications

E- 712.1AM		Unit
Function	Modular digital controller for NEXLINE® piezo stepping drives	
Axes	1	
Processor	PC- based, real- time operating system	
Servo frequency	50	kHz
Sensor		
Servo characteristics	P- I, two notch filters	
Sensor type	Incremental, analog signals (sin/ cos)	
Sensor resolution	16- bit, quantized	bit
External synchronization	Yes	
Amplifier		
Amplifier channels	4	
Output voltage	-250 to 250	V
Peak output power per channel	45	W
Average output power per channel	15	W
Peak output current per channel	180	mA
Average output current per channel	60	mA
Current limitation	Short- circuit- proof	
Resolution DAC	20- bit, interpolated	bit
Overheat protection	Output voltage switch- off at 75 °C	
Interfaces and operation		
Interface / communication	Ethernet, USB, RS-232	
Piezo / sensor connection	Sub- D 25- pin (f)	
Digital input/ output	MDR20; 8 × IN, 8 × OUT; TTL	
Command set	PI General Command Set (GCS)	
User software	NanoCapture, PIMikroMove	
Software drivers	LabVIEW driver, shared libraries for Windows and Linux	
Supported functions	NEXLINE® servo algorithms, data recorder, wave generator, trigger I/ O	
Display and indicators	LEDs for OnTarget, Error, Power	
Linearization	4th order polynomials, DDL option (Dynamic Digital Linearization)	
Miscellaneous		
Operating temperature range	5 to 50	°C
Mass	5.35	kg
Dimensions	9.5" chassis, 236 mm x 132 mm x 296 mm + handles (47 mm length)	
Max. power consumption	100	W
Operating voltage	90 to 240 VAC, 50 to 60 Hz	

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