

Digital Controller for PICMAWalk Walking Drives

1 to 3 Axes, for Drives with Incremental Sensors



E-712.xAN

- Customized control algorithms for PICMAWalk walking drives
- Plug-and-play, thanks to PI proprietary controller technology
- Flexible interfaces: TCP/IP, USB, RS-232, SPI
- Compatible with GCS (PI General Command Set)
- Wave generator
- Data recorder

Digital controller for PICMAWalk walking drives

1 to 3 axes with integrated power amplifiers and interpolator. Supports all motion modes of PiezoWalk® technology. 20-bit digital/analog converter resolution. Linearization based on fourth-order polynomials.

Interfaces and communication

TCP/IP, USB, RS-232 and SPI for commanding. Differential signal transmission for analog (sin/cos) encoder signals. TTL signal inputs for reference point switch.

Extensive functions, software support

Wave generator. Trigger inputs and outputs. Data recorder. Various control algorithms can be selected, including PID position control with secondary velocity control or PID velocity control. Parameter changing during operation. Extensive software support, e.g., for LabVIEW.

Fields of application

Microscopy. Automation technology. Positioning tasks in photonics applications and permanent image inspection tasks.

Specifications

	E-712.1AN • E-712.2AN • E-712.3AN
Function	Digital controller for walking drives with incremental sensor
Supported drives	PICMAWalk
Supported axes	E-712.1AN: 1 / E-712.2AN: 2 / E-712.3AN: 3
Housing with wide input range power supply	E-712.1AN • E-712.2AN • E-712.3AN
Input voltage range	100 to 240 V AC
Input voltage frequency	50 to 60 Hz
Maximum power consumption	225 VA
Fuse	2 A TH
Digital processor and interface module	E-712.1AN • E-712.2AN • E-712.3AN
Communication interfaces	TCP/IP, USB, RS-232, SPI
Processor	PC-based
Sampling rate, servo control	Max. 50 kHz
Sampling rate, sensor	Max. 50 kHz
External sensor synchronization	Yes
Digital inputs	8 × TTL to MDR connection, 20 pin
Digital outputs	8 × TTL to MDR connection, 20 pin
Command set	PI General Command Set (GCS)
Supported functions	Wave generator. Trigger inputs and outputs. Data recorder. Various control algorithms can be selected, e.g., P-I, two notch filters; Advanced Piezo Control (must be ordered separately, order number E-712.U1); PID position control with subordinate velocity control, two notch filters; PID velocity control, two notch filters.
Display	LEDs for OnTarget, Err, Power
Linearization	Fourth-order polynomials DDL option (Dynamic Digital Linearization), must be ordered separately (order number E-710.SCN) Advanced Linearization option, must be ordered separately (order number E-712.U4)

Amplifier and control module	E-712.1AN • E-712.2AN • E-712.3AN
Output voltage	-30 V to 135 V
Amplifier channels per module	4
Peak output power per channel	25 W*
Average output power per channel	8 W
Peak output current per channel	250 mA
Average output current per channel	150 mA
Current limitation	Short-circuit proof
Digital-analog converter resolution	20 bit effective
Temperature sensor	Max. 75 °C, deactivation of the piezo output voltage
Connection	Sub-D 37 (f)
Dimensions	270 mm × 324 mm × 139 mm (L × W × H)
Mass	E-712.1AN: 4.1 kg / E-712.2AN: 4.62 kg / E-712.3AN: 5.13 kg

* The maximum output power is limited by the power adapter of the housing and the number of available channels.

[Ask about custom designs!](#)

Ordering Information

E-712.1AN

Digital controller for PICMAWalk walking drives with incremental sensors, 1 axes, TCP/IP, USB, RS-232, SPI interfaces for communication

E-712.2AN

Digital controller for PICMAWalk walking drives with incremental sensors, 2 axes, TCP/IP, USB, RS-232, SPI interfaces for communication

E-712.3AN

Digital controller for PICMAWalk walking drives with incremental sensors, 3 axes, TCP/IP, USB, RS-232, SPI interfaces for communication

Accessories

E-710.SCN

Firmware extension DDL (Dynamic Digital Linearization)

E-712.U4

Firmware update Advanced Linearization Option

E-712.U1

Firmware extension Advanced Piezo Control option