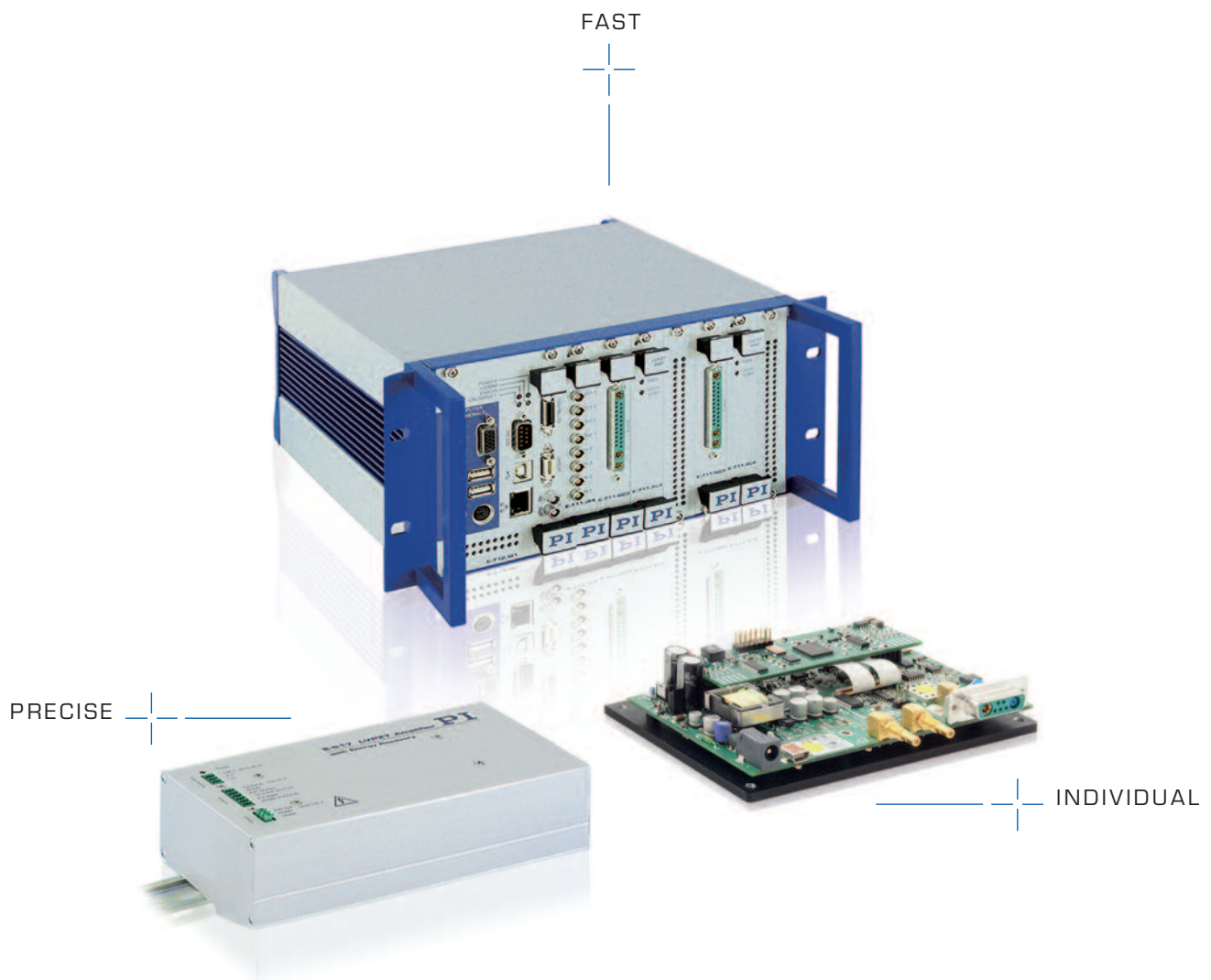


Piezo Nanopositioning Controllers

Digital or Analog?



Selection Criteria for Piezo Nanopositioning Controllers and Power Amplifiers

Choosing the right piezo controller depends on the actual application situation. A wide variety of criteria such as limitations to the installation space available, single-axis or multi-axis solutions, or the necessity of

having PC control determine which amplifier or controller is the right one.

A number of analog and digital controllers are available for nanopositioning tasks:

Your application requires ...	Which Piezo servo controller is suitable?
Frequent load changes or changes to the mode of operation	Set parameters easily with software: All digital ones from PI, including the E-609 series
Reasonably priced	Digital: E-709 or E-609; Analog: E-610, E-625, E-621)
3 to 6 channels	Digital: E-725, E-710, E-712; Analog: E-500, E-612
More than 6 channels	Networkable controllers such as E-621, E-625, E-665; modular controller such as E-712, E-500
Resolution	Digital high-end solutions from PI such as E-753, E-712, E-725; Every analog one
Optimum dynamic linearity	Digital high-end solutions from PI with DDL option
Long-term stability (thermal)	All piezo controllers and amplifiers from PI
Linearity / accuracy	All digital ones from PI, including the E-709 series: Digitalization polynomials up to 5th order; additional DDL option
Position control by means of analog input signal	All analog ones; Digital ones E-709, E-609, E-753 or E-712 with analog IN option
Real-time commanding	Digital ones with PIO-option; SPI-interface (standard for E-709!), TCP/IP for transmission rates up to 1 kHz; all controllers with analog I/O
Control in real-time or with high servo rates	All analog ones; E-712, E-753, E-725
Fast, non-periodic motion in several axes, tracking	E-712
Virtual axes and multi-axis synchronization	Digital multi-axis controllers such as E-712, E-725
Digital communication interfaces; user-defined periodic motion profiles; data recorder	All digital ones; E-625, E-621, E-665; Modular controller with E-517 digital operation module
Stand-alone functionality with macros	Modular controller with E-517 digital operating unit
Trigger I/Os	All digital ones; E-625, E-621, E-665; Modular controllers with E-517 digital operating unit

Selection Criteria for Highly Dynamic Applications

Your application is highly dynamic ...	Which high-power piezo amplifier is suitable?
Positioning with sub-nanometer accuracy and outstanding stability	E-505 amplifier module in the E-505 controller system; For long-term stability position control with capacitive or strain gauge sensors as an optional extra
Dynamic scanning with high linearity	E-506 linearized amplifier with charge control for maximum dynamics; E-505 power amplifier with position control
Dynamic scanning in continuous operation	E-617, E-504 switched amplifier with energy recovery for minimum energy consumption
Dynamic scanning in continuous operation, high capacitive loads	E-618 with particularly large charging current up to 20 A for very steep rising edges E-505.10 amplifier with large charging current up to 10 A
Fast switching, low number of cycles	E-505.10 amplifier with large charging current up to 10 A E-617, E-504 switched amplifier with energy recovery

PI General Catalog

Request it now!

The 530 page hardbound catalogue from PI is the most comprehensive reference book on the fundamentals of nano-positioning, piezo systems and micro-positioning technology yet. The catalog contains 200 product families, with more than 1000 drawings, graphs, images and technical diagrams.



Headquarters

GERMANY

Physik Instrumente (PI) GmbH & Co. KG
 Auf der Römerstraße 1
 76228 Karlsruhe/Palmbach
 Tel: +49 (721) 4846-0
 Fax: +49 (721) 4846-1019
 Email: info@pi.ws
 www.pi.ws

PI Ceramic GmbH
 Lindenstraße
 07589 Lederhose
 Tel: +49 (36604) 882-0
 Fax: +49 (36604) 882-4109
 Email: info@piceramic.de
 www.piceramic.de

Subsidiaries

USA (East) & CANADA

PI (Physik Instrumente) L.P.
 16 Albert St.
 Auburn, MA 01501
 Tel: +1 (508) 832 3456
 Fax: +1 (508) 832 0506
 Email: info@pi-usa.us
 www.pi-usa.us

USA (West) & MEXICO

PI (Physik Instrumente) L.P.
 5420 Trabuco Rd., Suite 100
 Irvine, CA 92620
 Tel: +1 (949) 679 9191
 Fax: +1 (949) 679 9292
 Email: info@pi-usa.us
 www.pi-usa.us

JAPAN

PI Japan Co., Ltd.
 Akebono-cho 2-38-5
 Tachikawa-shi
 Tokyo 190-0012
 Tel: +81 (42) 526 7300
 Fax: +81 (42) 526 7301
 Email: info@pi-japan.jp
 www.pi-japan.jp

PI Japan Co., Ltd.
 Hanahara Dai-Ni Building #703
 4-11-27 Nishinakajima,
 Yodogawa-ku, Osaka-shi,
 Osaka 532-0011
 Tel: +81 (6) 6304 5605
 Fax: +81 (6) 6304 5606
 Email: info@pi-japan.jp
 www.pi-japan.jp

UK & IRELAND

PI (Physik Instrumente) Ltd.
 Trent House, University Way,
 Cranfield Technology Park,
 Cranfield, Bedford MK43 0AN
 Tel: +44 (1234) 756 360
 Fax: +44 (1234) 756 369
 Email: uk@pi.ws
 www.physikinstrumente.co.uk

ITALY

Physik Instrumente (PI) S. r. l.
 Via G. Marconi, 28
 20091 Bresso (MI)
 Tel: +39 (02) 665 011 01
 Fax: +39 (02) 610 396 56
 Email: info@pionline.it
 www.pionline.it

FRANCE

PI France S.A.S.
 244 bis, avenue Marx Dormoy
 92120 Montrouge
 Tel: +33 (1) 55 22 60 00
 Fax: +33 (1) 41 48 56 62
 Email: info.france@pi.ws
 www.pifrance.fr

CHINA

Physik Instrumente (PI Shanghai) Co., Ltd.
 Building No. 7-106
 Longdong Avenue 3000
 201203 Shanghai
 Tel: +86 (21) 518 792 98
 Fax: +86 (21) 687 900 98
 Email: info@pi-china.cn
 www.pi-china.cn