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piezosystemjena
incredibly precise

PRODUCT OVERVIEW



ABOUT piezosystem jena

Established in 1991, piezosystem jena offers piezo micro positioning, piezo nano positioning and metrology solutions to the semiconductor, aerospace, microscopy and synchrotron community. We have an extensive knowledge and in-depth technical expertise in the application of piezo technology to nano positioning tasks, and in the design of piezo flexure stages and development of piezo-mechanical systems. Piezo based instruments are equipped with our unique piezo technology and offer XY or 3D motion with nearly unlimited resolution. The partnerships we form with our clientele in applications such as super resolution microscopy, AFM, process control, semiconductor metrology and nanopositioning for synchrotron radiation are long-lasting and mutually beneficial.

MIPOS Series		Part number	Travel z (µm)	Resolution (nm)	Resonant (Hz)	Description
MIPOS 100		O-303-00	100	0.2*	890	The piezo focus positioner MIPOS 100 series with compact design, high resolution, and high resonant frequency.
MIPOS 100 SG		O-303-01	80	2	890	
MIPOS 100 PL CAP		O-323-06	100	1	410	
MIPOS 250		O-370-00	250	0.5*	320	The piezo focus positioner MIPOS 250 series with compact design and high resolution.
MIPOS 250 SG		O-370-01	200	5	320	
MIPOS 250 CAP		O-370-06	200	1	320	
MIPOS 500		O-350-00	500	0.9*	230	The piezo focus positioner MIPOS 500 series with compact design, high resolution, and long travel.
MIPOS 500 SG		O-350-01	400	12	230	
MIPOS 600		O-380-00	600	0.9*	190	The piezo focus positioner MIPOS 600 series with compact design, high resolution, and long travel.
MIPOS 600 SG		O-380-01	500	12	190	
One Axis Stages		Part number	Travel x, z (µm)	Resolution (nm)	Resonant (Hz)	Description
PX 38		T-101-00	39	0.07*	760	X axis positioner with compact design, high resolution, and high speed.
PX 38 SG		T-101-01	32	0.7	760	
PX 100		T-104-00	100	0.2*	790	X axis positioner with compact design, high resolution, and high speed.
PX 100 SG		T-104-01	80	2	790	
PX 200		T-106-00	200	0.4*	177	X axis positioner with compact design, high resolution, and high speed.
PX 200 SG		T-106-01	160	4	177	
PX 400		T-108-00	400	0.8*	200	X axis positioner with compact design, high resolution, and high speed.
PX 400SG		T-108-01	320	8	200	

SG - Strain gage closed loop sensor
CAP - Capacity closed loop sensor

(*) open loop

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One Axis Stages	Part number	Travel x, z (µm)	Resolution (nm)	Resonant (Hz)	Description
PX 500 PX 1500 	S-605-89	500	1.2*	450	X axis positioner with high resolution and ultra-high travel - up to 1500 µm.
	S-622-00	1500	3	180	
nanoX 200 nanoX 200 SG nanoX 200 CAP 	T-106-20	240	0.4*	700	Dual piezo design stage for high dynamic and high load capability - up to 10 kg.
	T-106-21	200	4	700	
	T-106-26	200	1	700	
nano X 400 nano X 400 SG nano X 400 CAP 	T-108-20	480	0.8*	400	Dual piezo design stage for high dynamic and high load capability - up to 5 kg.
	T-108-21	400	8	400	
	T-108-26	400	2	400	
SCANIUS ONE 	T-601-09	120 (mm)	100	--	The SCANIUS ONE series for ultra-long travel with high precision.
PZ 38 PZ 38 SG PZ 38 CAP 	T-102-00	38	0.08*	760	Z axis positioner with compact design, high resolution, and high speed.
	T-102-01	32	0.7	760	
	T-102-06	32	0.7	760	
PZ 100 PZ 100 SG PZ 100 CAP 	T-105-00	100	1.2	660	Z axis positioner with compact design, high resolution, and high speed.
	T-105-01	80	3	660	
	T-105-06	80			
PZ 200 OEM PZ 200 SG OEM 	S-626-00	200	0.4*	625	Z axis positioner with ultra-compact design, high resolution, and high speed.
	S-626-01	160	4	625	
PZ 400 PZ 400 SG 	T-118-00	400	0.8*	250	Z axis positioner with compact design, high resolution, and long travel.
	T-118-01	320	8	250	
PZ 700 SI 	S-605-90	700	1.4*	230	Z axis positioner with a long travel range and an inside aperture of 70 mm x 70 mm.

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Two Axis Stages		Part number	Travel x, y (µm)	Resolution (nm)	Resonant (Hz) x/y	Description
PXY 16 PXY 16 CAP		S-644-00	16	0.04*	325	The piezo positioner PXY series with compact design and high resolution.
		S-644-06	12	1	325	
PXY 100 PXY 100 SG PXY 100 CAP		T-203-00	100	0.2*	340/480	The piezo positioner PXY series with compact design and high resolution.
		T-203-01	80	2	340/480	
		T-203-06	80	1		
PXY 200 PXY 200 SG		T-227-00	200	0.4*	350/350	The piezo positioner PXY series with compact design and high resolution.
		T-227-01	160	4	350/350	
nanoSXY 400 nanoSXY 400 CAP		T-224-00	400	0.8*	300/450	The piezo positioner nanoSXY series with compact design, high resolution, high speed, low profile, and long travel.
		T-224-06	320	1	300/450	
Three Axis Stages		Part number	Travel x, y, z (µm)	Resolution (nm)	Resonant (Hz) x/y/z	Description
microTRITOR miniTRITOR		T-400-00	9	0.07*	2100/2230/2290	The world's smallest 3-Dimensional piezo nano positioner with high resolution.
		T-401-00	38	0.16*	540/600/500	
TRITOR 38 TRITOR 38 SG		T-402-00	38	0.07*	630/685/915	The piezo positioner TRITOR series with compact design, high resolution, and high speed in three axes.
		T-402-01	30	0.8		
TRITOR 100 TRITOR 100 SG TRITOR 100 CAP		T-403-00	100	0.2*	500/550/480	The piezo positioner TRITOR series with compact design, high resolution, and high speed in three axes.
		T-403-21	80	2		
		T-403-06	80	1		
TRITOR 400 TRITOR 400 SG TRITOR 400 CAP		T-406-00	400	0.8*	180/280/140	The piezo positioner TRITOR series with high resolution and high speed and long travel in three axis.
		T-406-01	320	35		
		T-406-06	320	1		

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Five Axis Stage		Part number	Travel x, y, z (μm)/tip-tilt (mrad)	Resolution (nm)/(μrad)	Resonant (Hz) x/y/z	Description
PENTOR PENTOR SG 	T-450-00	100/ \pm 2	0.2/0.008*	680/750/580	The piezo positioner PENTOR series combine a three axis translation system and a two axis tilting system.	
	T-450-01	80/ \pm 1.6	2/0.08	680/750/580		
One Axis Tilting Stages		Part number	tip (mrad)	Resolution (μrad)	Resonant (Hz)	Description
PSH 4/1 	K-120-00	\pm 2	0.008*	6500	The piezo mirror tilting platforms PSH 4/1 series provide ultra-fast positioning in one axis with sub- μ rad accuracy.	
	K-232-00 K-232-01	35 26	0.07* 0.7	1200		
PSH 35/1 PSH 35/1 SG 	K-232-00	35	0.07*	1200	The piezo mirror tilting platforms PSH 35 series provide fast positioning in one axis, sub- μ rad accuracy and large tilting range.	
	K-232-01	26	0.7			
Two Axis Tilting Stages		Part number	tip-tilt (mrad)	Resolution (μrad)	Resonant (Hz)	Description
PKS 1-1/2" PKS 1-1" 	K-700-00	1	0.002*	450	The PKS 1 tilting mirror system is for fast and fine mirror adjustment, with the adjustment of 1 mrad open-loop and \pm 2° manual.	
	K-701-00			900		
PSH 10/2 PSH 10/2 SG 	K-110-00	\pm 4	0.02* 0.2	3500	The piezo mirror tilting platforms PSH 10/2 series provides fast positioning in two axes, with sub- μ rad accuracy.	
	K-110-01					
PSH 25/2 PSH 25/2 SG 	K-125-00	\pm 20	0.2*	1400	The piezo mirror tilting platforms PSH 25 series provides fast positioning and long travel in two axes, with sub- μ rad accuracy.	
	K-125-01	\pm 16	0.3			
PSH 40 PSH 40 SG 	K-340-00	\pm 18	0.1*	400, with a \varnothing 18 x 4 mm mirror	The PSH 40 is designed for high acceleration and vibration environments. It provides high resolution and low power consumption.	
	K-340-01 D/E	\pm 15	0.1			

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Micrometer Screw Piezo Drives	Part number	Travel x (µm)	Resolution (nm)	Resonant (Hz)	Description
MICI 200	S-703-00	250	0.56*	332	MICI 200 series improve the accuracy of the micrometer screws by offering up to 250 µm travel and 0.56 nm resolution motion.
MICI 200 SG	S-703-01	200	6	332	



Piezo Gripper	Part number	Travel x (µm)	Free gap (mm)	Weight (g)	Description
Grippy 3	S-805-00	275	0.3	29	Grippy series was designed for micro systems handling application by providing high speed motion up to 300 µm.
Grippy 4	S-805-50	280	0.7-1.4	40	



Stack Type Actuators	Part number	Travel z (µm)	Resolution (nm)	Resonant (Hz)	Description
PA 8/14	B-201-00	10	0.02*	40000	The PA series actuators are based on stack type actuators made by using multilayer technology. The PA series stack type actuators are internally pre-loaded, making them ideal for dynamic applications.
PA 8/14 SG	B-201-01	8	0.1	40000	
PA 25/14	B-203-00	30	0.06*	15000	
PA 25/14 SG	B-203-01	24	0.5	15000	
PA 70/14	B-208-00	80	0.17*	6000	
PA 70/14 SG	B-208-01	64	1.6	6000	
PA 100/14	B-211-00	110	0.23*	4400	
PA 100/14 SG	B-211-01	88	2.2	4400	



Piezo Controllers	Part number	Description
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NV 200/D NET



E-730-820

The NV 200/D NET is a digital smart controller with serial and ethernet interfaces for local and remote control of piezo actuators. The user can drive positioning applications through a network allowing for flexibility and use in critical environments. For dynamic applications a real time SPI interface is implemented. The amplifier can drive piezo elements with up to 400 mA. With a 16 bit resolution, the NV200/D guarantees high positioning accuracy and low noise.

Included with the NV200/D controller is proprietary PiSoWorks software which gives the user complete control over both the actuator and the controller for a complete solution. The software will automatically identify and display the connected amplifier and actuator. SetSt functionality offers smooth jumps by avoiding oscillation and overshoot. Special ILC (Iterative Learning Control) functionality uses a proprietary algorithm to learn the actuator's unique behavior and then compensates to generate higher closed-loop speeds compared to regular PID control.

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ENV 800



E-280-000

Piezo analog system ENV series consist of at least 3 modules:

1. The casing: size and type can be changed per customer requirements.
2. The ENT module: supplies the main voltages for the piezo amplifier module.
3. The ENV piezo amplifier: verifies depending on the power requirements. The maximum current can be as high as 1600 mA.

30DV300



E- 754-400

Digital control electronics 30DV300 comes with an auto calibration routine and automatic identification ASI-Function. All values of the actuating system, like capacitance, measurement system, resonant frequency and motion, are automatically stored in the amplifier. The controller can output current of up to 300 mA.

NV40/3 CLE



E-101-23

The piezo amplifier NV 40/3 includes a voltage amplifier, a display, and a PC-interface. The high resolution display shows the voltage of the actuator, along with other information such as: mode of operation and the temperature of the amplifier. Due to low noise ($0.3 \text{ mV}_{\text{RMS}}$) of the output current (40 mA), The amplifier system is ideally suited for positioning applications with sub-nm resolution.

12V40



E-440-011

The piezo amplifier 12V40 offers the user the choice to control a piezoelectric element manually or via analog modulation input with a signal of 0 to 10 VDC with nearly unlimited step resolution. The output current of 12V40 amplifier is 40 mA.

nano box USB



E-320-00

The nano box USB is designed mainly to control piezo electrical actuators in static and low dynamic application. The low noise level of the output signal of only 3mV allows extremely precise control. The simple connection from USB to PC enables fast implementation of high precision positioning tasks for any workplace. The output signal ranges from 0 to 130 V and 10 mA continuous current.

D-drive



E-750-000

Digital control electronics D-drive provides 20 bit resolution with up to 6 output channels. All features can be controlled via PC and the main functions can be directly regulated on front panel. D-drive also implements free adjustable features, such as a slew rate, a programmable notch filter and low pass filter. A build-in function generator offers sine, triangular and square functions as well as noise and sweep function.

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HIGH FORCE HIGH POWER ACTUATORS


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high power actuators by piezosystem jena

High Power Stack Type Actuators	Part number	Travel z (µm)	Blocking force up to (N)	Resonant (Hz)	Description
 <p>PSt 1000/10/7 PSt 1000/16/80 PSt 1000/35/200</p> <p>* Metal housing & preload available</p>	HP1-1000-07	7	4000	60000	High stiffness, resonant and force make solid stack type actuators the perfect solution for high dynamic and high power applications.
	HP1-1600-80	80	12000	15000	
	HP1-3500-200	200	50000	4000	

High Power Ring Type Actuators	Part number	Travel z (µm)	Blocking force up to (N)	Resonant (Hz)	Description
 <p>HPSt 1000/10-5/7 HPSt 1000/25-15/40 HPSt 1000/35-25/100</p> <p>* Metal housing & preload available</p>	HH1-1005-07	7	3500	50000	The free central opening of these ring actuators leads to high bending stability and good heat dissipation.
	HH1-2515-40	40	13000	20000	
	HH1-3525-100	100	20000	10000	

High Power Shakers	Part number	Travel z (µm)	Blocking force up to (N)	Resonant (Hz)	Description
 <p>PiSha 150/16/3 PiSha 150/35/80 PiSha 1000/10/25</p>	HP1-1600-20-Sha	3	1000	30000	The high stiffness, force and bandwidth make PiSha shaker a perfect solution for mechanical testing and modal analysis.
	HP1-3500-02-Sha	12	50000	23000	
	HP1-1000-25-Sha	25	4000	30000	

High Power Shock Generators	Part number	Travel z (µm)	Max acceleration (m/s ²)	Resonant (Hz)	Description
 <p>PIA 1000/16/20 PIA 1000/25/60 PIA 1000/35/80</p>	HP1-1600-20-PIA	20	100000	40000	PIA shock generators are able to produce mechanical pulses with highest accelerations and shortest pulse width.
	HP1-2500-60-PIA	60	100000	20000	
	HP1-3500-80-PIA	80	100000	15000	

High Voltage Piezo Amplifiers	Part number	Description
 <p>RCV 1000/7</p>	HV-RCV1000-7	The switching amplifier RCV 1000/7 with a bandwidth of 2000 Hz is specially designed for the use with hpower actuators or other capacitive loads with at least 2 µF capacitance. With an output power of 7 kW and its energy recovery principle, it provides high performance for dynamic applications.
 <p>HVP 1000/200</p>	HV-HVP-1000-200	The high voltage pulser HVP 1000/200 was designed to drive hpower actuators and pulsers with the current as high as 200 A. The charging and discharging process can be completed in a few µs.

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