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PXY & PZ D12

Compact Piezo Scanner

- ***Motion range up to 200 µm***
- ***Accurate parallel motion due to flexure guidance system***
- ***High resonant frequency up to 760 Hz***
- ***Easily combined with other piezo electrical systems***

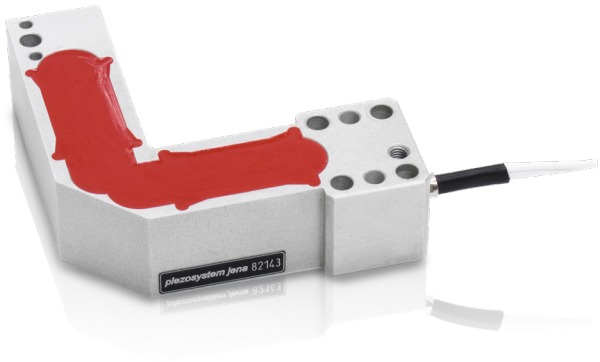

Image: PXY 80 D12

Due to solid state flexure and parallelogram construction, the PZ 38 nano-positioning stage can travel without any mechanical play in the X and Z axes, and provide a much higher resolution than is possible with mechanical or electromechanical systems.

This PZ piezo stage can be easily combined with XY-elements of the XYZ series or with tilting piezo-electric modules of the PSH series to allow positioning with all degrees of freedom. Additionally this Z-axis nano-positioning stage can run dynamically.

The PZ 38 can optionally be equipped with measurement systems (strain gauge or capacitive sensors) that compensate for hysteresis.

Variants:

- PXY 40 D12
- PXY 80 D12
- PXY 200 D12
- PZ 8 D12
- PZ 20 D12

Recommended Controller:

NV 40/3

E-101-20

Applications

- Optics and fiber positioning
- Laser optics
- Scanning systems
- Micro-manipulation

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Technical Data

		Unit	PXY 40 D12	PXY 80 D12	PXY 200 D12	PZ 8 D12	PZ 20 D12
Part no		-	S-605-37	S-605-10	S-605-20	S-605-60	S-605-63
Axes		-	x, y	x, y	x, y	z	z
Motion open-loop (±10%)*		µm	40	80	200	8	20
Capacitance (±20%)**		µF	0.7	1.7	2.6	0.7	0.7
Resolution open-loop*		nm	0.08	0.16	0.4	0.02	0.04
Resonant frequency	x, y	Hz	1100 / 1300	900 / 1200	400 / 600	-	-
	z		-	-	-	3000	1800
Stiffness (per axis)		N/µm	1.5 / 1.8	0.8 / 0.55	0.3 / 0.2	4.7	3.3
Max. push forces (per axis)		N	60/72	64/44	60/40	37.6	66
Max. pull forces (per axis)		N	6/7	6/4	6/4	4	7
Voltage range		V	-20 ... +130				
Connector	Voltage/sensor	-	LEMO				
Cable length		m	1	1	1	1	1
Material		-	stainless steel				
Dimensions (l/w/h)		mm	54 x 53.5 x 20	54 x 53.5 x 16	57.5 x 64 x 16	21 x 26 x 15	20.5 x 26 x 15
Weight		g	90	90	160	13	16

series PXY D12 + z-axis extension PZ D12 with SG feedback sensor		Unit	-	PXY 80 D12	PXY 200 D12	PZ 8 D12	PZ 20 D12
Part no		-	-	S-605-14	S-605-21	S-605-61	S-605-64
Motion open-loop (±10%)* per axis		µm	-	80	200	8	20
Motion closed-loop (±0.2%)* per axis		µm	-	65	160	6.4	16
Feedback sensors		-	-	strain gauge			
Resolution closed-loop*		nm	-	1.6	4	0.16	0.4
Typ. repeatability		nm	-	5	9	2	3
Max. push force (per axis)		N	-	64/44	60/40	37.6	66
Max. pull force (per axis)		N	-	6/4	6/4	4	7
Connector	Voltage/sensor	-	-	LEMO/ODU (analog) / D-Sub (digital)			
Cable length		m	-	2	2	2	2
Weight		g	-	90	160	30	45

series PXY D12 + z-axis extension PZ D12 with CAP feedback sensor		Unit	-	PXY 80 D12	PXY 200 D12
Part no		-	-	S-605-16	S-605-26
Motion open-loop (±10%) per axis		µm	-	80	200
Motion closed-loop* (±0.2%) per axis		µm	-	65	160
Feedback sensors		-	-	capacitive sensor	
Resolution closed-loop*		nm	-	1	
Typ. repeatability		nm	-	5	6
Max. push force (per axis)		N	-	64/44	60/40
Max. pull force (per axis)		N	-	6/4	6/4
Connector	Voltage/sensor	-	-	LEMO/ODU (analog) / D-Sub (digital)	
Cable length		m	-	2	2
Dimensions (l x w x h)		mm	-	64 x 63.5 x 22	75.5 x 69 x 27
Weight		g	-	155	225

* typical value measured with NV 40/3 amplifier (closed loop: NV 40/3 CLE amplifier) and the resolution is only limited by the noise of the power amplifier and metrology
** typical value for small electrical field strength