

## series PXY

150 V

- accurate parallel motion using parallelogram principles
- motion without mechanical play due to solid state hinges
- highest resolution in nm and sub-nm range
- integrated lever transmission
- motion up to 200  $\mu\text{m}$  x 200  $\mu\text{m}$
- can be easily combined with other piezoelectrical and mechanical positioning systems
- precision pin holes for accurate adjustment
- central hole

### applications:

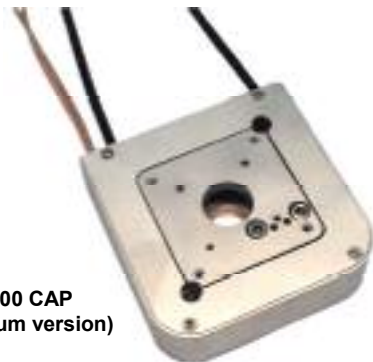
- optics, fiber positioning, laser tuning
- precision adjustment in scientific applications
- two dimensional scanning systems
- automation



PXY 38



PXY 200



PXY 100 CAP  
(vacuum version)

### technical data:

operating voltage:	-20 to +130 V
temperature range:	-20 to 80 °C (0 to 180 °F)
housing:	stainless steel; top and bottom plate made of anodized aluminum
connector:	LEMO
cable length:	1m

Solid state hinges in parallelogram construction provide parallel motion without mechanical play in the x and y direction. These construction principles result in a very high resolution which gets far beyond the resolution of mechanical and electromechanical positioning systems.

The PXY series can be easily mounted to other positioning systems and can be equipped with measurement devices that overcome the effect of hysteresis.

Dynamic operation is possible and the PXY elements are very suitable for solving scanning problems. In particular, the central hole can be helpful in optical applications.

### mounting instructions:

The elements of the series PXY consist of actuators integrated in a housing with an internal lever transmission.

The stage is fixed to a base plate by using two diagonal drill holes. Components can be mounted on the top plate by two diagonal tap holes and can be accurately located by using the precision pin holes (indicated N).

Since the lever mechanism works in both directions, forces between housing and top plate need to be avoided, as they could damage the stage.

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series PXY		unit	PXY 38	PXY100	PXY 200
part no.			T-201-00	T-203-00	T-227-00
motion ( $\pm 10\%$ )	x-direction	$\mu\text{m}$	38	100	200
	y-direction	$\mu\text{m}$	38	100	200
max. voltage		V	-10...+150	-10...+150	-10...+150
capcitance each direction***		nF	700	1800	5200
resolution*		nm	0.07	0.2	0.4
resonant frequency	x-direction	Hz	730	380	350
	y-direction	Hz	1090	480	350
stiffness	x-direction	N/ $\mu\text{m}$	1.55	1.1	0.65
	y-direction	N/ $\mu\text{m}$	1.4	0.95	0.65
max. load		N	100	75	100
force generation	x-direction	N	59	110	40
	y-direction	N	53	95	40
dimensions	length L	mm	25	40	70
	width B	mm	25	40	70
	height H	mm	16	20	25
	N	mm	$\varnothing 2 \text{ G7 x 3}$	$\varnothing 3 \text{ G7 x 3}$	-
	K1, K2	mm	2.2	3.9	22
	J	mm	8	10	12.5
diameter central	A	mm	2	9	28
hole pattern	spacing C	mm	20	32	63
	thread M	mm	M2 x 3	M3 x 4	M3 x 4
	P	mm	$\varnothing 2.2 / \varnothing 4 \text{ x } 15$	$\varnothing 3.3 / \varnothing 6 \text{ x } 19$	-
weight		g	45	102	325
connector	voltage	-	LEMO 0S.302	LEMO 0S.302	LEMO 0S.302
series PXY with integrated strain gauge measurement		unit	PXY 38 SG	PXY 100 SG	PXY 200 SG
part no.			T-201-01	T-203-01	T-227-01
motion (each axis)	open loop	$\mu\text{m}$	38	100	200
	closed loop	$\mu\text{m}$	32	80	160
resolution*		nm	0.07/1	0.2/2	0.4/4
repeatability**		nm	37	51	45
non-linearity**		%	0.12	0.12	0.09
dimensions	length L	mm	40	60	70
	width B	mm	40	60	70
	height H	mm	23	21	25
weight		g	100	175	350
connector	sensor	-	LEMO 0S.304	LEMO 0S.304	LEMO 0S.304
series PXY with integrated capacitive measurement system		unit	-	PXY 100 CAP	-
part no.			-	T-203-06	-
motion (each axis)	open loop	$\mu\text{m}$	-	100	-
	closed loop	$\mu\text{m}$	-	80	-
resolution*		nm	-	2	-
repeatability**		nm	-	$\pm 9$	-
non-linearity**		%	-	-	-
dimensions	length L	mm	-	65	-
	widrth B	mm	-	65	-
	height H	mm	-	20	-
weight ( $\pm 10\%$ )		g	-	300	-
connector	sensor	-	-	LEMO 0S.650	-

\* measured with E-103-18 amplifier

\*\* typical value measured with  $-20\text{V}$  to  $130\text{V}$

\*\*\* typical value for small electrical field strength

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