

## **PX 100**

- **accurate parallel motion in one direction because of parallelogram principles**
- **easy adjustment**
- **motion without any mechanical play because of solid state hinges**
- **integrated lever transmission**
- **motion up to 100 µm**
- **easily combined with other piezoelectrical systems (especially xy and tilting systems)**
- **easily combined with mechanical positioning systems precision pin holes for accurate adjustment**



Due to the nature of the solid state flexure and parallelogram construction, the travel of these stages is without mechanical play in the x or z axes. A much higher resolution, achievable with mechanical or electromechanical systems, is possible. The PX series stages can be easily combined with xy and tilting piezoelectric modules to give positioning in all degrees of freedom.

The PX stages can be equipped with measurement systems that overcome the effect of hysteresis. Dynamic work of the elements is possible.

### **specifications:**

operating voltage: -20 to +130 V  
temperature range: -20 to 80 °C  
housing: functional parts made from stainless steel  
top and bottom plate aluminium anodised  
connector: LEMO  
cable length: 1 m

### **options:**

- integrated measurement system (strain gauge; capacitive measurement system)
- vacuum / low temperature version
- high load version
- other modifications available on request

### **recommended supply:**

NV 40/3; ENV 40; 12V40

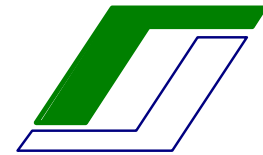
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series PX part no.	unit	PX 38 T-101-00	PX 100 T-104-00	PX 200 T-106-00	PX 300 T-107-00	PX 400 T-108-00
motion ( $\pm 10\%$ )**	$\mu\text{m}$	38	100	200	300	400
max. load****	N	100	100	10	10	10
max. voltage	V	150	150	150	150	150
capacitance each direction***	nF	600	1800	1800	2500	5200
resolution open loop*	nm	0.07	0.18	0.37	0.56	0.75
resonant frequ. without add. mass	Hz	760	790	177	177	200
stiffness	N/ $\mu\text{m}$	1	1	0.08	0.08	0.16
force generation (blocking force)	N	30	100	16	24	64
dimensions						
length L	mm	25	40	52	52	52
width B	mm	25	40	48	48	48
height H	mm	18	20	20	20	20
holes for precision pins N	mm	$\varnothing 2\text{G7} \times 3$	$\varnothing 3\text{G7} \times 3$	$\varnothing 3\text{G7} \times 4$	$\varnothing 3\text{G7} \times 4$	$\varnothing 3\text{G7} \times 4$
K	mm	9.5	16	18	18	18
J	mm	10	5	9	9	9
hole pattern spacing C	mm	20	32	32	32	32
thread M	mm	M2 x 4	M3 x 5	M3 x 4	M3 x 4	M3 x 4
thread P	mm	$\varnothing 2.2 / \varnothing 4 \times 12$	$\varnothing 3.3 / \varnothing 6 \times 18$			
rotational error	$\mu\text{rad}$					
$\vartheta_x$	$\mu\text{rad}$	10	10	10	10	10
$\vartheta_y$	$\mu\text{rad}$	10	10	10	10	10
$\vartheta_z$	$\mu\text{rad}$	10	10	20	20	30
mounts directly to	-	PXY 38 PZ 38 TRITOR 38	PXY 100 PZ 100 TRITOR 100	PX 400 PX 300 PX 200	PX 400 PX 300 PX 200	PX 400 PX 300 PX 200
weight	g	40	85	175	175	175
connector voltage	-	LEMO	LEMO	LEMO	LEMO	LEMO OS.250
series PX with integrated measurement system part no.	unit	PX 38 SG T-101-01	PX 100 SG T-104-01	PX 200 SG T-106-01	PX 300 SG T-107-01	PX 400 SG T-108-01
motion**						
open loop	$\mu\text{m}$	38	100	200	300	400
closed loop	$\mu\text{m}$	32	80	160	240	320
repeatability	nm	23	29	36	62	75
non-linearity	%	0.1	0.8	0.06	0.20	0.09
dimensions						
length L	mm	40	40	52	52	52
width B	mm	40	40	48	48	48
height H	mm	25	20	22	22	22
weight	g	77	85	180	180	180
connector sensor	-	LEMO OS.304	LEMO OS.304	LEMO OS.304	LEMO OS.304	LEMO OS.304
series PX with integrated measurement system part no.	unit	-	PX 100 CAP T-104-06	PX 200 CAP T-106-06	PX 300 CAP T-107-06	PX 400 CAP T-108-06
motion**						
open loop	$\mu\text{m}$	-	100	200	300	400
closed loop	$\mu\text{m}$	-	80	160	240	320
resolution						
open loop	nm	-	0.18	0.37	0.56	0.75
closed loop	nm	-	1	1	1	1
repeatability	nm	-	15	13	18	38
non-linearity	%	-	0.05	0.036	0.035	0.042
dimensions						
length L	mm	-	40	52	52	52
width B	mm	-	40	48	48	48
height H	mm	-	29	20	20	20
weight	g	-	85	180	180	180
connector sensor	-	-	LEMO OS.650	LEMO OS.650	LEMO OS.650	LEMO OS.650

\* measured with E-103-18 amplifier  
 \*\* typical value measured with -20V to 130V  
 \*\*\* typical value for small electrical field strength  
 \*\*\*\* also available as high load version