# *PX 300*

- **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 300 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<br>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 (± 10 %)** | | µm | 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/µm | 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 | ∅ 2G7 x 3 | ∅ 3G7 x 3 | ∅3G7 x 4 | ∅3G7 x 4 | ∅3G7 x 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 | ∅ 2.2 / ∅ 4 x 12 | ∅ 3.3 / ∅ 6 x 18 | | | |
| rotational error | Θx | µrad | 10 | 10 | 10 | 10 | 10 |
| | Θy | µrad | 10 | 10 | 10 | 10 | 10 |
| | Θz | µrad | 10 | 10 | 20 | 20 | 30 |
| mounts directly to | | - | PXY 38 | PXY 100 | PX 400 | PX 400 | PX 400 |
| | | - | PZ 38 | PZ 100 | PX 300 | PX 300 | PX 300 |
| | | - | TRITOR 38 | TRITOR 100 | PX 200 | PX 200 | PX 200 |
| weight | | g | 40 | 85 | 175 | 175 | 175 |
| connector | voltage | - | LEMO | LEMO | LEMO | LEMO | LEMO |
| **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 | µm | 38 | 100 | 200 | 300 | 400 |
| | closed loop | µm | 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 |
| | heigth H | mm | 25 | 20 | 22 | 22 | 22 |
| weight | | g | 77 | 85 | 180 | 180 | 180 |
| connector | sensor | - | LEMO 0S.304 | LEMO 0S.304 | LEMO 0S.304 | LEMO 0S.304 | LEMO 0S.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 | µm | - | 100 | 200 | 300 | 400 |
| | closed loop | µm | - | 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 |
| | heigth H | mm | - | 29 | 20 | 20 | 20 |
| weight | | g | - | 85 | 180 | 180 | 180 |
| connector | sensor | - | - | LEMO 0S.650 | LEMO 0S.650 | LEMO 0S.650 | LEMO 0S.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

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