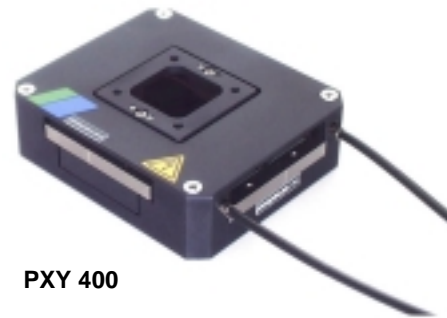




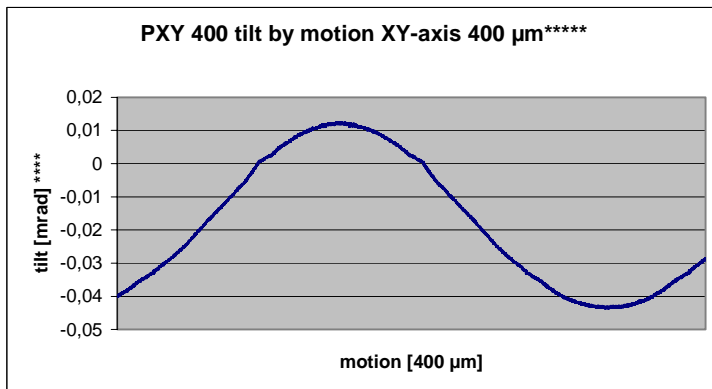
PXY 400

150 V

- motion up to 400 μm x 400 μm
- high resonant frequency
- integrated pre-load
- motion without mechanical play due to solid state hinges



PXY 400



applications:

- scanning systems
- wafer positioning
- scanning probe microscopy
- automation
- handling systems

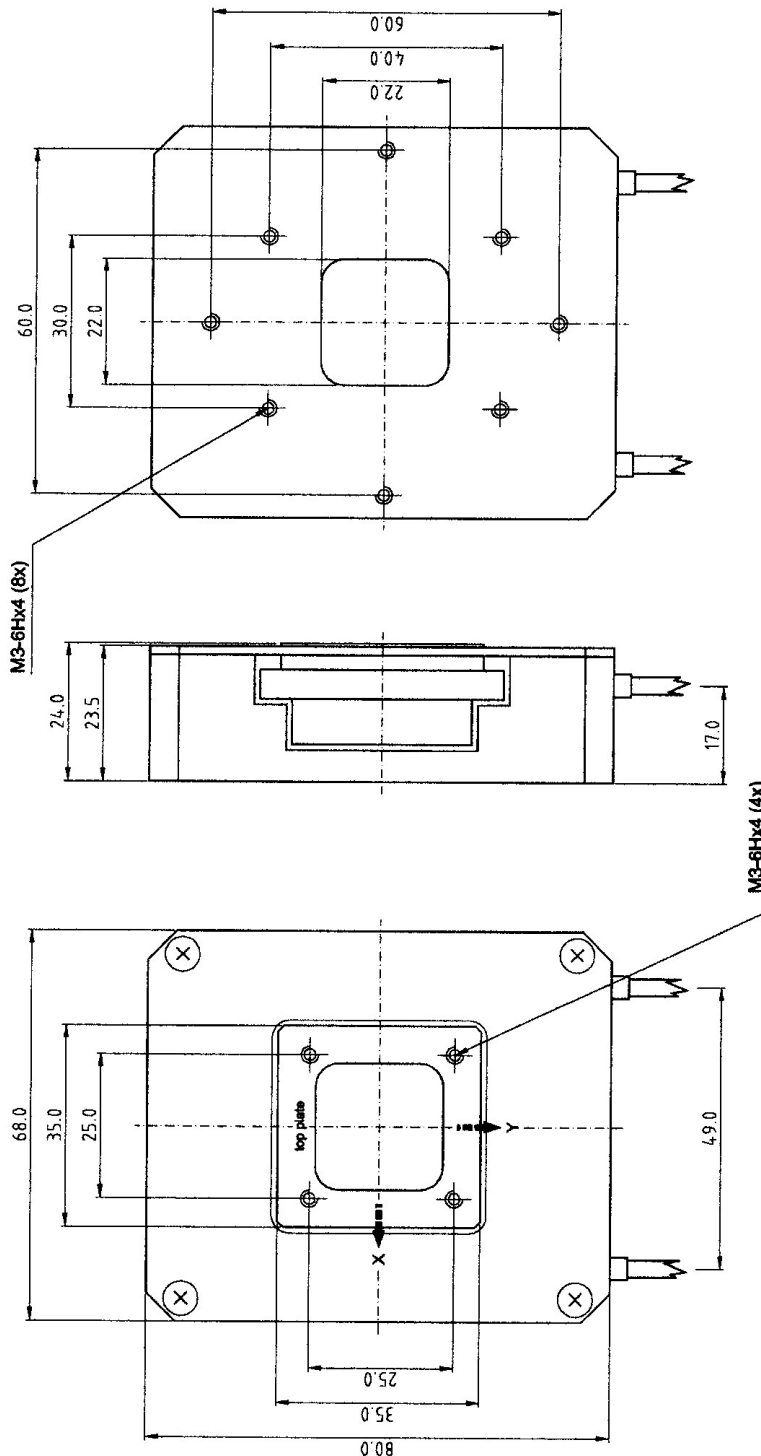
series PXY part no.	unit	PXY 400 T-208-00
motion in x and y**	μm	400
operating voltage	V	-10 to +150
integrated feedback system	-	no
capacitance	x-axis	μF 7.6
($\pm 20\%$)***	y-axis	μF 7.6
resolution open loop*		nm 0.53
resonant frequency		
without additional mass	x-axis	Hz 385
	y-axis	Hz 240
with additional mass m = 70 g	x-axis	Hz 164
	y-axis	Hz 130
temperature range	$^{\circ}\text{C}$	-20 to 80
connector	-	
cable length	m	1
dimensions	length L	mm 80
	width B	mm 68
	height H	mm 24
free central space	mm^2	22 x 22
weight	g	275

Applications in the field of microscopy often require a positioning element with a free central hole. The model PXY 400 combines its compact size with a large motion of 400 μm (16 mil) in the x and y directions. A new design of the actuator produces a high resonant frequency and an improved dynamical behavior. Its free central space of 22 x 22 mm^2 makes this element ideally suited to a large number of applications such as wafer positioning, scanning, and handling systems.

* measured with E-103-18 amplifier
 ** typical value measured with -20V to 130V
 *** typical value for small electrical field strength
 **** measured with ZYGO Interferometer
 ***** typical measurement value PXY 400 part no. 3184



COMPETENCE
IN PRECISION



ORIGINAL

part-no.	part-name	date
T-208-00	PXY400	13. JUNI 2001
file name	OK: date/sign.	customers drawing
PT20800	ÄZ 0	piezosystem jena
	scale	
	1:1	



Notes for mounting and use of piezo electrically driven positioning stages

Piezo electrically driven positioning stages are built for high precision positioning. Please handle careful. Especially for mounting other parts on the top plate. Please avoid torque forces when fastening screws in order to avoid damage to the actuator. Please avoid tensile forces greater than the given pre-load!

Please note, for standard actuators and actuators equipped with strain gauge sensors, the tolerance of the open loop motion is -10% to +40%. The tolerance of the capacitance is +/- 20%. The closed loop travel is 80% of the open loop travel. The resolution is only limited by the noise of the amplifier, and all given resolution values are based on measurements with the E-103-18 amplifier.

Standard calibration will be done without any load on the actuator. On customer request, defined loads (up to the max. load) can be calibrated during manufacturing once to optimize a system. Additional calibration has to be paid by the customer. The standard cable length is 1m. The vacuum and cryogenic version cable length of the actuator is 0.6m. The extension cable length outside the vacuum chamber is 1.2m.

The total cable length of actuators equipped with strain gauge feed back sensors is 1m.

Actuators equipped with strain gauge feed back sensors and external pre-amplifier – please see added “E” on the part number - have a total cable length of 2m. A signal pre-amplifier box is in line with the cable 0.3m behind the actuator. The size of the cable box is BxHxL=12x16x45mm.

Actuators equipped with capacitive feed back sensors have a total cable length of 2m. A signal pre-amplifier box is in line with the cable 0.3m behind the actuator. The size of the cable box is (BxHxL=55x12x105mm).

For further question please ask us!

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