

ANPx101ext

linear, horizontal stepper positioner with extended travel range

Technology	
travel mechanism	inertial piezo drive

Size and Dimensions	
footprint; height	24 x 48; 11.5 mm
maximum size (outer position)	24 x 48; 11.5 mm

Coarse Positioning Mode	
travel (step mode)	12 / 20 mm
typical minimum step size	50 nm @ 300 K, 10 nm @ 4 K
maximum speed (@ 300 K, no load)	approx. 3 mm/s

Fine Positioning Mode	
scan range	7.5 µm @ 300 K, 1.2 µm @ 4 K
scan resolution	sub-nm resolution

Materials (non-magnetic)	
positioner body	Titanium (other materials on request)
actuator	PZT ceramics
connecting wires	insulated twisted pair, Cu
weight	35 g

Load	
maximum vertical load	100 g
maximum static forces along the axis	4 N
maximum dynamic force along the axis	2 N
maximum torque on the axis	10 Ncm

Mounting	
frontside mounting	four through holes for M2
backside mounting	four threads M2,5 x 4 mm
load mounting	six threads M2 x 3 mm

Article Numbers			
/RT Version	--	/LT Version	--
/HV Version	--	/LT/HV Version	--
/UHV Version	--	/LT/UHV Version	--

Compatibility with Electronics	
ANC106 piezo step controller	/RT version only
ANC150 piezo step controller	all versions
ANC200 piezo scan controller	all versions
ANC300 piezo positioning controller	all versions
ANC350 piezo controller	all versions

Working Conditions	
mounting orientation	axis horizontal
magnetic field range	0 .. 31 T
temperature range (/RT, /HV, /UHV)	0 .. 100 °C
temperature range (/LT, /LT/HV, /LT/UHV)	10 mK .. 300 K
max. bake out temperature (/UHV, /LT/UHV)	150 °C
minimum pressure (/RT, /LT)	1E-4 mbar
minimum pressure (/HV, /LT/HV)	1E-8 mbar
minimum pressure (/UHV, /LT/UHV)	5E-11 mbar

Connectors and Feedthroughs	/RT, /LT Versions	all /HV, /UHV Versions
connector type	2-pole pin plug, ø 0.5 mm, d = 2 mm,	two female conn., for pin ø 1 mm,
connector type	integrated connector	30 cm cable with connector
electrical feedthrough solution	COC230/LT	COC230/HV, COC230/UHV

Temperature Dependent Data	@ 300K	@ 4K (only /LT versions)
input voltage range	0 .. +100V	0 .. +100V
typical actuator capacitance	1550 nF	220 nF
typical step size (min .. max)	0.05 .. 2 µm	10 .. 500 nm
fine positioning range	7.5 µm	1.2 µm

Accuracy of Movement	
repeatability of step sizes	typically 5 % over full range
forward / backward step asymmetry	typically 5 %

Position Encoder	
encoder options	/NUM, /RES

Exemplary Drawings for the ANPx101eXT with 20 mm travel

