ANPx101

linear, horizontal stepper positioner providing highest stability

Technology	
travel mechanism	inertial piezo drive

Size and Dimensions	
footprint; height	24 x 24; 11 mm
maximum size	29 x 24; 11 mm

Coarse Positioning Mode	
travel (step mode)	5 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	5 µm @ 300 K, 0,8 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	20 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	two through holes for M2
backside mounting	two threads M2.5 x 4 mm
load mounting	six threads M2 x 3 mm

Article Numbers			
/RT Version	1001317	/LT Version	1001285
/HV Version	1001313	/LT/HV Version	1001316
/UHV Version	1001314	/LT/UHV Version	1001315

Compatibility with Electronics	
ANC106 piezo step controller	/RT version only
ANC300 piezo positioning 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 .. 373 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,	2-pole pin plug (PEEK), ø 0.5 mm, d = 2 mm,
connector type	integrated connector	30 cm cable with connector
electrical feedthrough solution	COC230/LT	COC230/HV, COC230/UHV

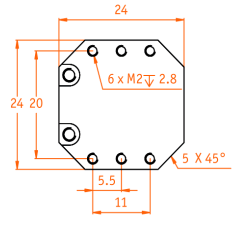
Temperature Dependent Data	@ 300K	@ 4K (only /LT versions)
input voltage range	0 .. +100V	0 .. +100V
typical actuator capacitance	1050 nF	150 nF
typical step size (min .. max)	0.05 .. 2 µm	10 .. 500 nm
fine positioning range	5 µm	0,8 µm

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

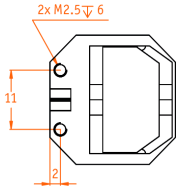
Position Encoder	
encoder options	/NUM, /RES

Drawings

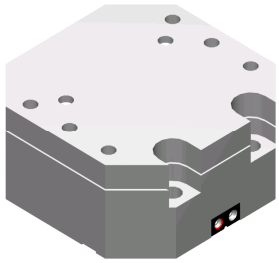
top view



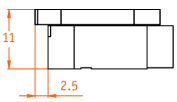
bottom view



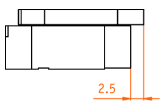
3D view



inner position



outer position



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