

# ANPz101

highest stability, open loop, linear, vertical stepper positioner

## Technical Specifications

### Technology

travel mechanism inertial piezo drive

### Size and Dimensions

footprint; height 24 x 24; 20 mm  
maximum size 24 x 24; 25 mm  
weight 36 g

### Coarse Positioning Mode

	@ 300 K	@ 4 K
input voltage range	0 .. 60 V	0 .. 60 V
typical actuator capacitance	1.05 µF	0.15 µF
travel range (step mode)	5 mm	5 mm
typical minimum step size	0.05 µm	10 nm
maximum drive velocity	≈ 3 mm/s	

### Fine Positioning Mode

	@ 300 K	@ 4 K
input voltage range	0 .. 100 V	0 .. 150 V
fine positioning range	0 .. 5 µm	0 .. 0.8 µm
fine positioning resolution	sub-nm	sub-nm

### Materials (non-magnetic)

positioner body titanium (other materials on request)  
actuator PZT ceramics  
connecting wires insulated twisted pair, copper

### Load

mounting orientation: axis vertical (@ 300 K)

maximum load 2 N (200 g)  
maximum static force along the axis 8 N  
maximum dynamic force along the axis 5 N

### Mounting

from the top 2 through holes dia 2.2 mm, cntrbr. f. M2  
from the bottom 2 threads M2.5 x 3.4 mm  
load on top 10 threads M2 x 3.3 mm

### Article Numbers

/RT Version	1001485
/HV Version	1001484
/UHV Version	1001483
/LT Version	1001486
/LT/HV Version	1001487
/LT/UHV Version	1001488

### Compatibility with Electronics

ANC300 piezo positioning controller	all versions
ANC350 piezo positioning controller	all versions

### Working Conditions

mounting orientation	axis vertical
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

### Accuracy of Movement

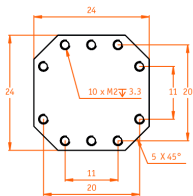
repeatability of step sizes	typically 5 % over full range
forward / backward step asymmetry	typically 5 - 10 % depending on load

### Connectors and Feedthroughs

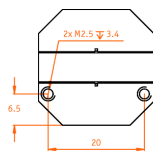
	/RT, /LT Versions	all /HV, /UHV Versions
connector type	2-pole pin plug, ø 0.5 mm, d = 2 mm, integrated connector	2-pole pin plug (PEEK), ø 0.5 mm, d = 2 mm, 30 cm cable with connector
electrical feedthrough solution	VFT/LT	VFT/HV, VFT/UHV

## Technical Drawings

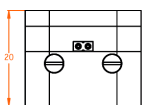
top view



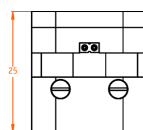
bottom view



inner position



outer position



3D view

