

# ANPz30

the smallest, open loop, linear, vertical stepper positioner

## Technical Specifications

### Technology

travel mechanism inertial piezo drive

### Size and Dimensions

footprint; height  $\varnothing$  11; 12 mm  
maximum size  $\varnothing$  11; 14.5 mm  
weight 3.8 g

### Coarse Positioning Mode

	@ 300 K	@ 4 K
input voltage range	0 .. 60 V	0 .. 60 V
typical actuator capacitance	1.05 $\mu$ F	0.15 $\mu$ F
travel range (step mode)	2.5 mm	2.5 mm
typical minimum step size	0.025 $\mu$ m	10 nm
maximum drive velocity	$\approx$ 1 mm/s	

### Fine Positioning Mode

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

### Materials (non-magnetic)

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

### Load

**mounting orientation: axis vertical (@ 300 K)**  
maximum load 0.1 N (10 g)  
maximum static force along the axis 0.3 N  
maximum dynamic force along the axis 0.2 N

### Mounting

from the bottom 2 threads M2 x 1 mm  
load on top 2 threads M1.6 x 1 mm

### Article Numbers

/RT Version	1000028
/HV Version	1000046
/UHV Version	1000013
/LT Version	1000006
/LT/HV Version	1000406
/LT/UHV Version	1000019

### 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

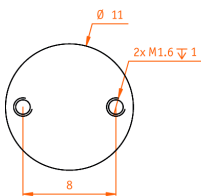
repeatability of step sizes	typically 5 % over full range
forward / backward step asymmetry	typically 5 - 10 % depending on load

### Connectors and Feedthroughs

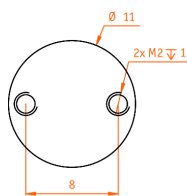
	/RT, /LT Versions	all /HV, /UHV Versions
connector type	2-pole pin plug, $\varnothing$ 0.5 mm, d = 2 mm, 30 cm cable with connector	2-pole pin plug (PEEK), $\varnothing$ 0.5 mm, d = 2 mm, 30 cm cable with connector
electrical feedthrough solution	VFT/LT	VFT/HV, VFT/UHV

## Technical Drawings

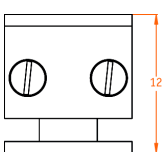
top view



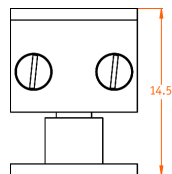
bottom view



inner position



outer position



3D view

