

# ANPz102/RES

closed loop, linear, vertical stepper positioner with resistive encoder

## Technical Specifications

### Technology

travel mechanism inertial piezo drive

### Size and Dimensions

footprint; height 24 x 24; 27 mm  
maximum size 24 x 24; 32 mm  
weight 55 g

### Coarse Positioning Mode

	@ 300 K	@ 4 K
input voltage range	0 .. 60 V	0 .. 60 V
typical actuator capacitance	1.106µF	0.15 µF
travel range (step mode)	5 mm	5 mm
typical minimum step size	50 nm	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 (upgrade option: copper beryllium)  
actuator PZT ceramics  
connecting wires insulated twisted pair, copper

### Load (@ ambient conditions)

mounting orientation: axis vertical  
maximum load 2 N (200 g)  
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	1009460
/HV version	1009462
/UHV version	1009463
/LT version	1009461
/LT/HV version	1009464
/LT/UHV version	1009465

### Compatibility with Electronics

ANC350 piezo positioning controller ANC350/RES

### Working Conditions

mounting orientation axis vertical  
magnetic field range 0 .. 31 T  
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

### Position Encoder

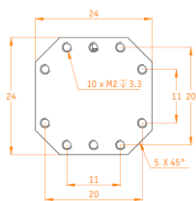
readout mechanism resistive sensor  
sensor power (when measuring) 1 µW .. 1 mW  
encoded travel range full travel  
sensor resolution ≈ 200 nm  
repeatability 1..2 µm  
linearity (over full travel) < 1%  
absolute accuracy typically < 1% of travel range

### Connectors and Feedthroughs /RT, /LT Versions

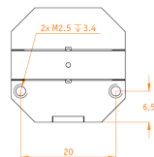
	/RT, /LT Versions	all /HV, /UHV Versions
connector type	2-pole pin plug, ø 0.5 mm, d = 2 mm, 30 cm cable with connector additional 3-pole plug	2-pole pin plug (PEEK), ø 0.5 mm, d = 2 mm, 30 cm cable with connector additional 3-pole plug (PEEK)
encoder connector	---	VFT/HV, VFT/UHV
electrical feedthrough solution	---	

## Technical Drawings

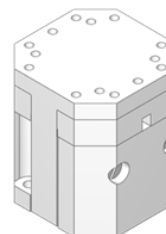
top view



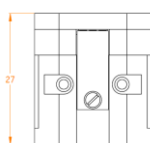
bottom view



3D view



inner position



outer position

