

# ANSxyz100hs

modular open loop xyz-scanner for 2" scanning probe applications, dedicated for tuning fork applications

## Technical Specifications

### Technology

travel mechanism piezo driven lever arm mechanism

### Size and Dimensions

footprint; height 24 x 24; 10 mm  
weight 19 g

### Fine Positioning Mode

	@ 300 K	@ 4 K
fine positioning range (xyz)	40 x 40 x 4.3 $\mu\text{m}^3$	9 x 9 x 2 $\mu\text{m}^3$
input voltage range (xy)	0 .. 120 V	0 .. 150 V
input voltage range (z)	0 .. 60 V	0 .. 150 V
typical actuator capacitance (xy)	0.6 $\mu\text{F}$	100 nF
typical actuator capacitance (z)	2.5 $\mu\text{F}$	340 nF
fine positioning resolution	sub-nm	

### Materials (non-magnetic)

positioner body titanium (upgrade option: beryllium copper)  
actuator PZT ceramics  
connecting wires insulated twisted pair, copper

### Load (@ ambient conditions)

mounting orientation: axis horizontal

maximum torque on the axis 20 Ncm  
maximum load 1 N (100 g)

### Mounting

from the top 2 through holes M2 x 5 mm  
from the bottom 2 threads M2.5 x 5 mm  
load on top 4 threads M2 x 3 mm

### Article Numbers

/RT Version	1002585
/HV Version	1002586
/UHV Version	1002587
/LT Version	1002588
/LT/HV Version	1002589
/LT/UHV Version	1002590

### Compatibility with Electronics

ANC300 piezo positioning controller	ANM200, ANM300
ANC350 piezo positioning controller	ANC350 scan and readout controller
Analog voltage amplifier	ANC250

### Accuracy of Movement

repeatability of step sizes	no coarse positioning capability
scan repeatability	typically 0.1 %
forward / backward step asymmetry	no coarse positioning capability
creep	typically 0.5 - 0.8 % per decade of time
linearity	typically 5 - 10 %

### Working Conditions

mounting orientation	xy horizontally, z vertically
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	three 2-pole pin plugs, $\varnothing$ 0.5 mm, d = 2 mm, 30 cm cable with connector	three 2-pole pin plugs (PEEK), $\varnothing$ 0.5 mm, d = 2 mm, 30 cm cable with connector
electrical feedthrough solution	VFT/LT	VFT/HV, VFT/UHV

## Technical Drawings

