ANSxyz100

open loop xyz-scanner for 2" scanning probe 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)	50 x 50 x 24 µm³	30 x 30 x 15 µm³
input voltage range	0 .. 60 V	0 .. 150 V
typical actuator capacitance (xy)	5.4 µF	750 nF
typical actuator capacitance (z)	1.4 µF	200 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	6 threads M2 x 3 mm

Article Numbers	
/RT Version	1001239
/HV Version	1001309
/UHV Version	1001312
/LT Version	1001238
/LT/HV Version	1001311
/LT/UHV Version	1001310

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

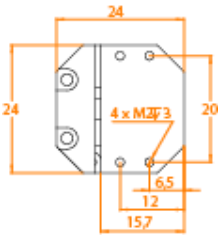
Accuracy of Movement	
repeatability of step sizes	no coarse positioning capability
scan repeatability	typically 0.1 %
forward / backward step asymmetry	no coarse positioning capability
creep	typically 0.5 - 0.8 % per decade of time
linearity	typically 5 - 10 %

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

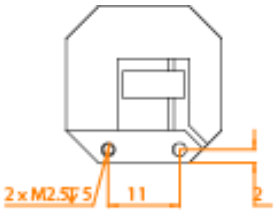
Connectors and Feedthroughs	/RT, /LT Versions	all /HV, /UHV Versions
connector type	three 2-pole pin plugs, ø 0.5 mm, d = 2 mm, 30 cm cable with connector	three 2-pole pin plugs (PEEK), ø 0.5 mm, d = 2 mm, 30 cm cable with connector
electrical feedthrough solution	VFT/LT	VFT/HV, VFT/UHV

Technical Drawings

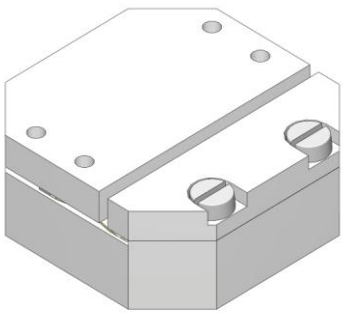
top view



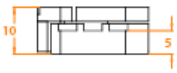
bottom view



3D view



side view



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