ANPz51eXT

compact, open loop, linear, vertical stepper positioner with extended travel range

Technical Specifications

Technology	
travel mechanism	inertial piezo drive

Size and Dimensions	
footprint; height	15 x 15; 17 mm
maximum size	15 x 15; 23 mm
weight	13 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)	6 mm	6 mm
typical minimum step size	50 nm	10 nm
maximum drive velocity	≈ 1 mm/s	

Fine Positioning Mode	@ 300 K	@ 4 K
input voltage range	0 .. 100 V	0 .. 150 V
fine positiong range	0 .. 5 µm	0 .. 0.8 µm
fine positioning resolution	sub-nm	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 vertical
maximum load	0.5 N (50 g)
maximum dynamic force along the axis	1 N

Mounting	
from the bottom	2 threads M2 x 5 mm
load on top	4 threads M1.6 x 2 mm

Article Numbers	
/RT Version	1009004
/HV Version	1009005
/UHV Version	1009006
/LT Version	1009007
/LT/HV Version	1009008
/LT/UHV Version	1009009

Compatibility with Electronics	
ANC300 piezo positioning controller	ANM150, ANM300

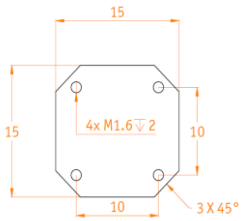
Working Conditions	
mounting orientation	axis vertical
magnetic field range	0 .. 31 T
temperature range (/LT, /LT/HV, /LT/UHV)	10 mK .. 373 K
max. bake out temperature (/UHV, /LT/UHV)	150 °C
minimum pressure (/RT, /LT)	1E-4 mbar
minimum pressure (/HV, /LT/HV)	1E-8 mbar
minimum pressure (/UHV, /LT/UHV)	5E-11 mbar

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

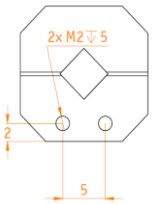
Connectors and Feedthroughs	/RT, /LT Versions	all /HV, /UHV Versions
connector type	2-pole pin plug, ø 0.5 mm, d = 2 mm, 30 cm cable with connector	2-pole pin plug (PEEK), ø 0.5 mm, d = 2 mm, 30 cm cable with connector
electrical feedthrough solution	VFT/LT	VFT/HV, VFT/UHV

Technical Drawings

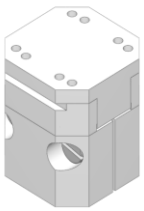
top view



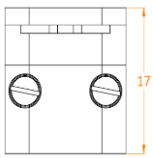
bottom view



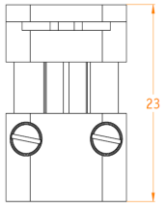
3D view



inner position



outer position



attocube
pioneers of precision