

ANPx51/RES

compact, closed loop, linear, horizontal stepper positioner with resistive encoder

Technical Specifications

Technology

travel mechanism inertial piezo drive

Size and Dimensions

footprint; height 15 x 18; 9.2 mm
maximum size 18 x 18; 9.2 mm
weight 7.2 g

Coarse Positioning Mode

	@ 300 K	@ 4 K
input voltage range	0 .. 60 V	0 .. 60 V
typical actuator capacitance	1.05 μ F	0.15 μ F
travel range (step mode)	3 mm	3 mm
typical minimum step size	50 nm	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 μ m	0 .. 0.8 μ m
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 horizontal
Load (@ ambient conditions) 0.25 N (25 g)
maximum dynamic force along the axis 1 N

Mounting

from the top 2 through holes dia 1.7 mm, cntrbr. f. M1.6
from the bottom 2 threads M2 x 2.5 mm
load on top 4 threads M1.6 x 2.5 mm

Article Numbers

/RT Version	1003261
/HV Version	1003263
/UHV Version	1003264
/LT Version	1003262
/LT/HV Version	1003265
/LT/UHV Version	1003266

Compatibility with Electronics

ANC350 piezo positioning controller ANC350/RES

Working Conditions

mounting orientation	axis horizontal
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

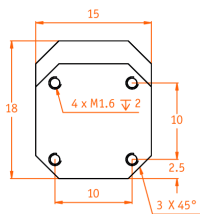
readout mechanism	resistive sensor
sensor power (when measuring)	1 μ W .. 1 mW
encoded travel range	full travel
sensor resolution	\approx 200 nm
repeatability	1.2 μ m
linearity (over full travel)	< 1%
absolute accuracy	typically < 1.5 % of travel range

Connectors and Feedthroughs /RT, /LT Versions

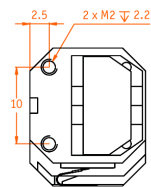
	/RT, /LT Versions	all /HV, /UHV Versions
connector type	2-pole pin plug, \varnothing 0.5 mm, d = 2 mm, 30 cm cable with connector additional 3-pole plug	2-pole pin plug (PEEK), \varnothing 0.5 mm, d = 2 mm, 30 cm cable with connector additional 3-pole plug (PEEK)
encoder connector	VFT/LT	VFT/HV, VFT/UHV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

Technical Drawings

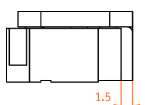
top view



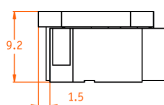
bottom view



inner position



outer position



3D view

