

## ANPz100/IND

linear, vertical stepper positioner with inductive encoder for closed loop operation

Technology	
travel mechanism	inertial piezo drive

Size and Dimensions	
footprint; height	24 x 24; 25 mm
maximum size (outer position)	24 x 24; 30 mm

Coarse Positioning Mode	
travel (step mode)	6 mm
typical minimum step size	50 nm @ 300 K, 10 nm @ 4 K
maximum speed (@ 300 K, no load)	approx. 3 mm/s

Fine Positioning Mode	
scan range	9 µm @ 300 K, 1.8 µm @ 4 K
scan resolution	sub-nm resolution

Materials (non-magnetic)	
positioner body	Titanium (other materials on request)
actuator	PZT ceramics
connecting wires	insulated twisted pair, Cu
weight	56 g

Load	
maximum vertical load	200 g
maximum static forces along the axis	8 N
maximum dynamic force along the axis	5 N
maximum torque on the axis	10 Ncm

Mounting	
frontside mounting	two through holes for M2
backside mounting	two threads M2,5 x 4 mm
load mounting	twelve threads M2 x 3 mm

Article Numbers			
/RT Version	1001482	/LT Version	1001481
/HV Version	1001897	/LT/HV Version	1001896
/UHV Version	---	/LT/UHV Version	---

Compatibility with Electronics	
ANC106 piezo step controller	/RT version only
ANC150 piezo step controller	all versions
ANC200 piezo scan controller	all versions
ANC350 piezo controller	all versions
ARC100 readout controller	---
ARC200 readout controller	all versions

Working Conditions	
mounting orientation	axis vertical
magnetic field range	0 .. 31 T
temperature range (/RT, /HV, /UHV)	0 .. 100 °C
temperature range (/LT, /LT/HV, /LT/UHV)	1 .. 300 K
max. bake out temperature (/UHV, /LT/UHV)	---
minimum pressure (/RT, /LT)	1E-4 mbar
minimum pressure (/HV, /LT/HV)	1E-8 mbar
minimum pressure (/UHV, /LT/UHV)	---

Connectors and Feedthroughs	/RT, /LT Versions	all /HV, /UHV Versions
connector type	2-pole pin plug, ø 0.5 mm, d = 2 mm,	two female conn., for pin ø 1 mm,
connector type 3.Zeile	30 cm cable with connector	30 cm cable with connector
electrical feedthrough solution	COC230/LT	COC230/HV, COC230/UHV
encoder connector	2 additional 2-pole plugs	4 additional female connectors

Temperature Dependent Data	@ 300K	@ 4K (only /LT versions)
input voltage range	0 .. +120 V	0 .. +120 V
typical actuator capacitance	600 nF	100 nF
typical step size (min .. max)	0.05 .. 3 µm	10 .. 500 nm @ 4 K
fine positioning range	9 µm	1.8 µm

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

Position Encoder	
readout mechanism	inductive encoder (non-contact)
sensor power (when measuring)	20 mW
encoded travel range	6 mm
sensor resolution	approx. 400 nm
repeatability	1 - 2 µm
linearity (over full travel)	0
absolute accuracy	0

