

## ANPx341/RES

## **Technical Specifications**

Technology	
travel mechanism	inertial piezo drive
positioner type	linear
Size and Dimensions	
footprint; height	45x44; 11.5mm
max installation space	44x53.3; 11.5mm
weight	83 g
Materials	
positioner body	titanium
actuator	PZT ceramics
connecting wires	insulated twisted pair, copper
bearings	ceramics
Options	
environmental options	/HV, /LT, /LT/HV, /LT/UHV, /RT, /UHV
Compatibility with Electronics	
ANC350 piezo positioning controller	ANC350/RES
Load (@ ambient conditions)	
maximum torque on the axis	20 Ncm
maximum load	20 N
maximum dynamic force along the axis	2 N
Coarse Positioning Mode	
input voltage range	0 - 60 V
typical actuator capacitance @ 300 K	1.6 μF
typical actuator capacitance @ 4 K	0.22 μF
travel range (step mode)	20 mm
typical minimum step size @ 300 K	100 nm
typical minimum step size @ 4 K	20 nm
maximum drive velocity @ 300 K	approx. 3 mm/s
Fine Positioning Mode	
fine positioning range @ 300 K	7.5 µm
fine positioning range @ 4 K	1.2 µm
fine positioning resolution	sub-nm
input DC voltage range @ 300 K	0 - 100 V
input DC voltage range @ 4 K	0 - 150 V
Accuracy of Movement	
repeatability of step sizes	typically 5 % over full range
forward / backward step asymmetry	typically 5 %

readout mechanism resistive sensor sensor power (when measuring) 0.01 - 1 mW sensor resolution approx. 200 nm repeatability 12 µm linearity (over full travel) < 1 %  Mounting	Position Encoder	
sensor resolution approx. 200 nm repeatability 12 µm linearity (over full travel) <1 %  Mounting no. of through holes at the top 4 diameter of through holes at the top 2.2 mm type of screw at the top M2 no. of threads at the bottom 4 type of screw at the bottom M2.5 x 2 mm no. of threads for load on top 10 type of screw for load on top M2 x 3 mm Working Conditions mounting orientation axis horizontal magnetic field range 0-31 T minimum pressure (/RT) 1E-4 mbar minimum pressure (/HV) 1E-8 mbar minimum pressure (/HV) 1E-8 mbar temperature range (/LT) 273 K 373 K temperature range (/LT) 10m K 373 K  Connectors and Feedthroughs cable 30 cm cable with connector electrical feedthrough solution VFT/LT encoder connector additional 3-pole plug  Versions /RT version 1006753 /HV version 1007276 /LT/HV version 1007276 /LT/HV version 1008359 /HL/HV version 1008356 /HL/LT version 1008356 /HL/LT version 1008356	readout mechanism	resistive sensor
repeatability 12 µm linearity (over full travel) <1 %  Mounting no. of through holes at the top 4 diameter of through holes at the top 2.2 mm type of screw at the top M2 no. of threads at the bottom 4 type of screw at the bottom M2.5 x 2 mm no. of threads for load on top 10 type of screw for load on top M2 x 3 mm Working Conditions mounting orientation axis horizontal magnetic field range 0-31 T minimum pressure (/RT) 1E-4 mbar minimum pressure (/HV) 1E-8 mbar minimum pressure (/HV) 5E-11 mbar temperature range (/LT) 273 K 373 K temperature range (/LT) 10m K 373 K  Connectors and Feedthroughs cable 30 cm cable with connector electrical feedthrough solution VFT/LT encoder connector additional 3-pole plug  Versions /RT version 1006753 /HV version 1007276 /LT/HV version 1007278 /HL/HV version 1008359 /HL/HV version 1008356 /HL/LT version 1008356 /HL/LT version 1008356	sensor power (when measuring)	0.01 - 1 mW
linearity (over full travel)  Mounting no. of through holes at the top 4 diameter of through holes at the top type of screw at the top N2 no. of threads at the bottom 4 type of screw at the bottom N2.5 × 2 mm no. of threads for load on top 10 type of screw for load on top M2 × 3 mm Working Conditions mounting orientation magnetic field range 0 - 31 T minimum pressure (/RT) 1E-4 mbar minimum pressure (/HV) 1E-8 mbar minimum pressure (/UHV) 5E-11 mbar temperature range (/LT) 273 K 373 K temperature range (/LT) 10mK 373 K  Connectors and Feedthroughs cable electrical feedthrough solution VFT/LT encoder connector additional 3-pole plug Versions /RT version 1006753 /HV version 1006755 /LT version 1007276 /LT/HV version 1007277 /LT/UHV version 1008359 /HL/HV version 1008356 /HL/LT version 1008356 /HL/LT version 1008356	sensor resolution	approx. 200 nm
Mounting no. of through holes at the top diameter of through holes at the top type of screw at the top no. of threads at the bottom type of screw at the bottom At type of screw at the bottom no. of threads for load on top type of screw for load on top type of screw for load on top Morking Conditions mounting orientation magnetic field range noinimum pressure (/RT) minimum pressure (/HV) 1E-8 mbar minimum pressure (/UHV) 5E-11 mbar temperature range (/RT) 273K 373K temperature range (/LT) 10mK 373K  Connectors and Feedthroughs cable electrical feedthrough solution vFT/LT encoder connector dditional 3-pole plug  Versions /RT version 1006753 /HV version 1006755 /LT version 1007276 /LT/HV version 1007277 /LT/UHV version 1008359 /HL/RT version 1008356 /HL/LT version 1008354 /HL/LT version 1008356	repeatability	12 µm
no. of through holes at the top diameter of through holes at the top type of screw at the top no. of threads at the bottom 4 type of screw at the bottom A2.5 x 2 mm no. of threads for load on top 10 type of screw for load on top Working Conditions mounting orientation magnetic field range noinum pressure (/RT) minimum pressure (/HV) 1E-8 mbar minimum pressure (/HV) 1E-8 mbar minimum pressure (/RT) 10mK 373K temperature range (/LT) 10mK 373K Connectors and Feedthroughs cable alo 30 cm cable with connector electrical feedthrough solution VFT/LT encoder connector Wersions // RT version 1006753 // HV version 1006755 // LT version 1007276 // LT/HV version 1007278 // HL/HT version 1008356 // HL/LT version 1008356 // HL/LT version 1008356 // HL/LT version 1008356	linearity (over full travel)	< 1 %
diameter of through holes at the top type of screw at the top no. of threads at the bottom 4 type of screw at the bottom N2.5 x 2 mm no. of threads for load on top 10 type of screw for load on top Max 3 mm Working Conditions mounting orientation axis horizontal magnetic field range 0 - 31 T minimum pressure (/RT) 1E-4 mbar minimum pressure (/HV) 1E-8 mbar minimum pressure (/HV) 5E-11 mbar temperature range (/RT) 273K 373K temperature range (/LT) 10mK 373K  Connectors and Feedthroughs cable 30 cm cable with connector electrical feedthrough solution VFT/LT encoder connector Additional 3-pole plug Versions //RT version 1006753 //HV version 1006755 //LT version 1007276 //LT/HV version 1007277 //LT/UHV version 1008359 //HL/HT version 1008356 //HL/UHV version 1008356 //HL/UHV version 1008356	Mounting	
type of screw at the top no. of threads at the bottom 4 type of screw at the bottom M2.5 x 2 mm no. of threads for load on top 10 type of screw for load on top M2 x 3 mm Working Conditions mounting orientation magnetic field range 0 - 31 T minimum pressure (/RT) 1E-4 mbar minimum pressure (/HV) 1E-8 mbar minimum pressure (/UHV) 5E-11 mbar temperature range (/RT) 273K 373K temperature range (/LT) 10mK 373K Connectors and Feedthroughs cable 30 cm cable with connector electrical feedthrough solution VFT/LT encoder connector additional 3-pole plug Versions /RT version 1006753 /HV version 1006755 /LT version 1007276 /LT/HV version 1007278 /LT/HV version 1008359 /HL/RT version 1008356 /HL/UHV version 1008356 /HL/UHV version 1008356 /HL/UHV version 1008356	no. of through holes at the top	4
no. of threads at the bottom  type of screw at the bottom  no. of threads for load on top  type of screw for load on top  Working Conditions  mounting orientation  magnetic field range  no. of threads for load on top  Working Conditions  mounting orientation  magnetic field range  no. 31 T  minimum pressure (/RT)  minimum pressure (/HV)  1E-8 mbar  minimum pressure (/UHV)  5E-11 mbar  temperature range (/RT)  273K 373K  temperature range (/LT)  10mK 373K  Connectors and Feedthroughs  cable  lectrical feedthrough solution  VFT/LT  encoder connector  additional 3-pole plug  Versions  /RT version  1006753  /HV version  1006755  /LT version  1007276  /LT/HV version  1007277  /LT/UHV version  1008359  /HL/HT version  1008356  /HL/LT version  1008356  /HL/LT version  1008356	diameter of through holes at the top	2.2 mm
type of screw at the bottom no. of threads for load on top 10 type of screw for load on top Working Conditions mounting orientation magnetic field range 0 - 31 T minimum pressure (/RT) minimum pressure (/HV) 1E-8 mbar minimum pressure (/UHV) 5E-11 mbar temperature range (/RT) 273K 373K temperature range (/LT) 10mK 373K  Connectors and Feedthroughs cable aloc magnetic field range 9 0-31 T minimum pressure (/HV) 1E-8 mbar minimum pressure (/UHV) 5E-11 mbar  temperature range (/RT) 273K 373K  Connectors and Feedthroughs cable aloc magnetic field range VFT/LT encoder connector additional 3-pole plug  Versions /RT version 1006753 /HV version 1006754 /UHV version 1007276 /LT/UHV version 1007277 /LT/UHV version 1007278 /HL/HT version 1008359 /HL/HT version 1008356 /HL/LT version 1008356	type of screw at the top	M2
no. of threads for load on top type of screw for load on top Working Conditions mounting orientation magnetic field range minimum pressure (/RT) minimum pressure (/HV) minimum pressure (/HV) minimum pressure (/HV)  temperature range (/CT)  connectors and Feedthroughs cable electrical feedthrough solution electrical feedthrough solution VFT/LT encoder connector  Versions /RT version 1006753 /HV version 1006755 /LT version 1007276 /LT/HV version 1007277 /LT/UHV version 1008359 /HL/HV version 1008356 /HL/LT version 1008356 /HL/LT version 1008356 /HL/LT version 1008356 /HL/LT version 1008356	no. of threads at the bottom	4
type of screw for load on top  Working Conditions  mounting orientation  magnetic field range  minimum pressure (/RT)  minimum pressure (/HV)  minimum pressure (/HV)  temperature range (/RT)  connectors and Feedthroughs  cable  electrical feedthrough solution  electrical feedthrough solution  VFT/LT  encoder connector  Wersions  /RT version  /HV version  /LT version  /LL version  /L vers	type of screw at the bottom	M2.5 x 2 mm
Working Conditions mounting orientation axis horizontal magnetic field range 0 - 31 T minimum pressure (/RT) 1E-4 mbar minimum pressure (/HV) 1E-8 mbar minimum pressure (/UHV) 5E-11 mbar temperature range (/RT) 273K 373K temperature range (/LT) 10mK 373K  Connectors and Feedthroughs cable 30 cm cable with connector electrical feedthrough solution VFT/LT encoder connector additional 3-pole plug  Versions /RT version 1006753 /HV version 1006754 /UHV version 1006755 /LT version 1007276 /LT/HV version 1007277 /LT/UHV version 1007278 /HL/RT version 1008359 /HL/RT version 1008359 /HL/UV version 1008354 /HL/LT version 1008356	no. of threads for load on top	10
mounting orientation axis horizontal magnetic field range 0 - 31 T minimum pressure (/RT) 1E-4 mbar minimum pressure (/HV) 1E-8 mbar minimum pressure (/UHV) 5E-11 mbar temperature range (/RT) 273 K 373 K temperature range (/LT) 10m K 373 K  Connectors and Feedthroughs cable 30 cm cable with connector electrical feedthrough solution VFT/LT encoder connector additional 3-pole plug  Versions /RT version 1006753 /HV version 1006754 /UHV version 1006755 /LT version 1007276 /LT/HV version 1007277 /LT/UHV version 1007278 /HL/RT version 1008359 /HL/HV version 1008359 /HL/UHV version 1008354 /HL/LT version 1008354 /HL/LT version 1008356	type of screw for load on top	M2 x 3 mm
magnetic field range 0 - 31 T minimum pressure (/RT) 1E-4 mbar minimum pressure (/HV) 1E-8 mbar minimum pressure (/UHV) 5E-11 mbar temperature range (/RT) 273 K 373 K temperature range (/LT) 10m K 373 K  Connectors and Feedthroughs cable 30 cm cable with connector electrical feedthrough solution VFT/LT encoder connector additional 3-pole plug  Versions /RT version 1006753 /HV version 1006754 /UHV version 1006755 /LT version 1007276 /LT/HV version 1007277 /LT/UHV version 1007278 /HL/RT version 1008359 /HL/HV version 1008359 /HL/UHV version 1008354 /HL/LT version 1008356	Working Conditions	
minimum pressure (/RT)         1E-4 mbar           minimum pressure (/HV)         1E-8 mbar           minimum pressure (/UHV)         5E-11 mbar           temperature range (/RT)         273K 373K           temperature range (/LT)         10mK 373K           Connectors and Feedthroughs         30 cm cable with connector           electrical feedthrough solution         VFT/LT           encoder connector         additional 3-pole plug           Versions         /RT version           /HV version         1006753           /HV version         1006754           /UHV version         1007276           /LT version         1007277           /LT/UHV version         1008359           /HL/HT version         1008359           /HL/UHV version         1008354           /HL/LT/HV version         1008356	mounting orientation	axis horizontal
minimum pressure (/HV)         1E-8 mbar           minimum pressure (/UHV)         5E-11 mbar           temperature range (/RT)         273K373K           temperature range (/LT)         10mK373K           Connectors and Feedthroughs         30 cm cable with connector           cable         30 cm cable with connector           electrical feedthrough solution         VFT/LT           encoder connector         additional 3-pole plug           Versions         1006753           /HV version         1006754           /UHV version         1006755           /LT version         1007276           /LT/HV version         1007278           /HL/RT version         1008359           /HL/HV version         1008350           /HL/UHV version         1008354           /HL/LT/HV version         1008356	magnetic field range	0 - 31 T
minimum pressure (/UHV) 5E-11 mbar  temperature range (/RT) 273K 373K  temperature range (/LT) 10mK 373K  Connectors and Feedthroughs  cable 30 cm cable with connector  electrical feedthrough solution VFT/LT  encoder connector additional 3-pole plug  Versions  /RT version 1006753  /HV version 1006754  /UHV version 1006755  /LT version 1007276  /LT/HV version 1007277  /LT/UHV version 1007278  /HL/RT version 1008359  /HL/HV version 1008355  /HL/UHV version 1008356  /HL/LT version 1008354  /HL/LT version 1008356	minimum pressure (/RT)	1E-4 mbar
temperature range (/RT) 273K 373K  temperature range (/LT) 10mK 373K  Connectors and Feedthroughs cable 30 cm cable with connector electrical feedthrough solution VFT/LT encoder connector additional 3-pole plug  Versions /RT version 1006753 /HV version 1006754 /UHV version 1006755 /LT version 1007276 /LT/HV version 1007277 /LT/HV version 1007278 /HL/RT version 1008359 /HL/HV version 1008355 /HL/HV version 1008356	minimum pressure (/HV)	1E-8 mbar
temperature range (/LT)	minimum pressure (/UHV)	5E-11 mbar
Connectors and Feedthroughs           cable         30 cm cable with connector           electrical feedthrough solution         VFT/LT           encoder connector         additional 3-pole plug           Versions           /RT version         1006753           /HV version         1006754           /UHV version         1007276           /LT/HV version         1007277           /LT/UHV version         1007278           /HL/RT version         1008359           /HL/HV version         1008356           /HL/LT version         1008354           /HL/LT/HV version         1008356	temperature range (/RT)	273K 373K
cable       30 cm cable with connector         electrical feedthrough solution       VFT/LT         encoder connector       additional 3-pole plug         Versions         /RT version       1006753         /HV version       1006754         /UHV version       1006755         /LT version       1007276         /LT/HV version       1007277         /LT/UHV version       1008359         /HL/RT version       1008355         /HL/UHV version       1008360         /HL/LT version       1008354         /HL/LT/HV version       1008356	temperature range (/LT)	10mK373K
electrical feedthrough solution         VFT/LT           encoder connector         additional 3-pole plug           Versions         1006753           /RT version         1006754           /UHV version         1006755           /LT version         1007276           /LT/HV version         1007277           /LT/UHV version         1008359           /HL/HV version         1008355           /HL/UHV version         1008360           /HL/LT version         1008354           /HL/LT/HV version         1008356	Connectors and Feedthroughs	
encoder connector         additional 3-pole plug           Versions         /RT version         1006753           /HV version         1006754           /UHV version         1006755           /LT version         1007276           /LT/HV version         1007277           /LT/UHV version         1008359           /HL/HV version         1008355           /HL/UHV version         1008360           /HL/LT version         1008354           /HL/LT/HV version         1008356	cable	30 cm cable with connector
Versions           /RT version         1006753           /HV version         1006754           /UHV version         1006755           /LT version         1007276           /LT/HV version         1007277           /LT/UHV version         1008359           /HL/HV version         1008355           /HL/UHV version         1008360           /HL/LT version         1008354           /HL/LT/HV version         1008356	electrical feedthrough solution	VFT/LT
/RT version     1006753       /HV version     1006754       /UHV version     1006755       /LT version     1007276       /LT/HV version     1007277       /LT/UHV version     1008359       /HL/HV version     1008355       /HL/UHV version     1008360       /HL/LT version     1008354       /HL/LT/HV version     1008356	encoder connector	additional 3-pole plug
/HV version     1006754       /UHV version     1006755       /LT version     1007276       /LT/HV version     1007277       /LT/UHV version     1007278       /HL/RT version     1008359       /HL/HV version     1008355       /HL/UHV version     1008360       /HL/LT version     1008354       /HL/LT/HV version     1008356	Versions	
/UHV version     1006755       /LT version     1007276       /LT/HV version     1007277       /LT/UHV version     1007278       /HL/RT version     1008359       /HL/HV version     1008355       /HL/UHV version     1008360       /HL/LT version     1008354       /HL/LT/HV version     1008356	/RT version	1006753
/LT version     1007276       /LT/HV version     1007277       /LT/UHV version     1007278       /HL/RT version     1008359       /HL/HV version     1008355       /HL/UHV version     1008360       /HL/LT version     1008354       /HL/LT/HV version     1008356	/HV version	1006754
/LT/HV version     1007277       /LT/UHV version     1007278       /HL/RT version     1008359       /HL/HV version     1008355       /HL/UHV version     1008360       /HL/LT version     1008354       /HL/LT/HV version     1008356	/UHV version	1006755
/LT/UHV version     1007278       /HL/RT version     1008359       /HL/HV version     1008355       /HL/UHV version     1008360       /HL/LT version     1008354       /HL/LT/HV version     1008356	/LT version	1007276
/HL/RT version     1008359       /HL/HV version     1008355       /HL/UHV version     1008360       /HL/LT version     1008354       /HL/LT/HV version     1008356	/LT/HV version	1007277
/HL/HV version     1008355       /HL/UHV version     1008360       /HL/LT version     1008354       /HL/LT/HV version     1008356	/LT/UHV version	1007278
/HL/UHV version     1008360       /HL/LT version     1008354       /HL/LT/HV version     1008356	/HL/RT version	1008359
/HL/LT version 1008354 /HL/LT/HV version 1008356	/HL/HV version	1008355
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	/HL/LT/UHV version	

## **Technical Drawings**







