

ANR51

compact rotary stepper positioner with vertical rotation axis

| Technology | |
|------------------|----------------------|
| travel mechanism | inertial piezo drive |

| Size and Dimensions | |
|--|------------------------|
| footprint; height | 15 x 15 (Ø 20); 9.5 mm |
| through hole in the middle of the axis | Ø 1.5 mm |

| Coarse Positioning Mode | |
|----------------------------------|-------------------------------|
| travel (step mode) | 360° endless, both directions |
| typical minimum step size | 1 m° @ 300 K, 0.5 m° @ 4 K |
| maximum speed (@ 300 K, no load) | approx. 10°/s |

| Fine Positioning Mode | |
|-----------------------|---------------------------|
| scan range | 40 m° @ 300 K, 6 m° @ 4 K |
| scan resolution | µ° resolution |

| Materials (non-magnetic) | |
|--------------------------|---------------------------------------|
| positioner body | Titanium (other materials on request) |
| actuator | PZT ceramics |
| connecting wires | insulated twisted pair, Cu |
| weight | 10 g |

| Load | |
|--------------------------------------|---------|
| maximum vertical load | 30 g |
| maximum static torque around axis | 0.3 Ncm |
| maximum dynamic torque around axis | 0.2 Ncm |
| maximum torque perpendicular to axis | 5 Ncm |

| Mounting | |
|--------------------|-------------------------|
| frontside mounting | --- |
| backside mounting | two threads M2 x 3 mm |
| load mounting | two threads M1.6 x 1 mm |

| Article Numbers | | | |
|-----------------|---------|-----------------|---------|
| /RT Version | 1003285 | /LT Version | 1003286 |
| /HV Version | 1003287 | /LT/HV Version | 1003289 |
| /UHV Version | 1003288 | /LT/UHV Version | 1003290 |

| Compatibility with Electronics | |
|-------------------------------------|------------------|
| ANC106 piezo step controller | /RT version only |
| ANC300 piezo positioning 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) | 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 | 2-pole pin plug, Ø 0.5 mm, d = 2 mm, | 2-pole pin plug (PEEK), Ø 0.5 mm, d = 2 mm, |
| connector type | 30 cm cable with connector | 30 cm cable with connector |
| electrical feedthrough solution | VFT/LT | VFT/HV, VFT/UHV |

| Temperature Dependent Data | @ 300K | @ 4K (only /LT versions) |
|--------------------------------|------------|--------------------------|
| input voltage range | 0 .. +60 V | 0 .. +60 V |
| typical actuator capacitance | 2050 nF | 400 nF |
| typical step size (min .. max) | 1 .. 50 m° | 0.5 .. 25 m° |
| fine positioning range | 40 m° | 6 m° |

| Accuracy of Movement | |
|-----------------------------------|-------------------------------|
| repeatability of step sizes | typically 5 % over full range |
| forward / backward step asymmetry | typically 5 % |

| Position Encoder | |
|------------------|------|
| encoder options | /RES |

