

# ANR101/NUM(+)

closed loop, rotary stepper positioner with vertical rotation axis and optoelectronic encoder

## Technical Specifications

|  |   |                                       |                                    |
|--|---|---------------------------------------|------------------------------------|
| <b>Technology</b>                      |   | <b>Compatibility with Electronics</b> |                                    |
| travel mechanism                       | inertial piezo drive                        | ANC350 piezo positioning controller   | ANC350/NUM                         |
| <b>Size and Dimensions</b>             |   | <b>Working Conditions</b>             |                                    |
| footprint; height                      | 24 x 27 (Ø 30); 18 mm                       | mounting orientation                  | axis vertical                      |
| weight                                 | 45.5 g                                      | magnetic field range                  | 0 .. 7 T                           |
| through hole in the middle of the axis | Ø 2 mm                                      | temperature range (/RT, /HV, /UHV)    | 0 .. 100 °C                        |
| <b>Coarse Positioning Mode</b>         |   | max. bake out temperature (/UHV)      | 150 °C                             |
| <b>@ 300 K</b>                         |   | minimum pressure (/RT)                | 1E-4 mbar                          |
| input voltage range                    | 0 .. 60 V                                   | minimum pressure (/HV)                | 1E-8 mbar                          |
| typical actuator capacitance           | 1.2 µF                                      | minimum pressure (/UHV)               | 5E-11 mbar                         |
| travel range (step mode)               | 360° endless, both directions               | <b>Accuracy of Movement</b>           |                                    |
| typical minimum step size              | 1 m°  | wobble                                | ± 1 mrad                           |
| maximum drive velocity                 | ≈ 30 °/s                                    | <b>Position Encoder</b>               |                                    |
| <b>Fine Positioning Mode</b>           |   | readout mechanism                     | optoelectronic: /NUM & /NUM+/(U)HV |
| <b>@ 300 K</b>                         |   | sensor power (when measuring)         | /NUM: 300 mW & /NUM+/(U)HV: 50 mW  |
| input voltage range                    | 0 .. 120 V                                  | encoded travel range                  | 360°                               |
| fine positioning range                 | 0 .. 70 m°                                  | wavelength of illumination            | 870 nm                             |
| fine positioning resolution            | µ°  | sensor resolution                     | 0.1 m°                             |
| <b>Materials (non-magnetic)</b>        |   | repeatability                         | 2 m°                               |
| positioner body                        | titanium (upgrade option: copper beryllium) | linearity (over full travel)          | < 0.01 %                           |
| actuator                               | PZT ceramics                                | absolute accuracy                     | < 0.01 % of travel range           |
| connecting wires                       | insulated twisted pair, copper              | <b>Connectors and Feedthroughs</b>    |                                    |
| <b>Load (@ ambient conditions)</b>     |   | <b>/RT Versions</b>                   | <b>all /HV, /UHV Versions</b>      |
| maximum load                           | 1 N (100 g)                                 | connector type                        | 14-pole connector                  |
| maximum dynamic torque around axis     | 0.8 Ncm                                     | electrical feedthrough solution       | ---                                |
| <b>Mounting</b>                        |   |                                       |                                    |
| from the top                           | 2 through holes dia 2.4 mm, cncbr. f. M2    |                                       |                                    |
| from the bottom                        | 2 threads M2.5 x 4 mm                       |                                       |                                    |
| load on top                            | 6 threads M2 x 3 mm                         |                                       |                                    |
| <b>Article Numbers</b>                 |   |                                       |                                    |
| /RT version                            | 1002550                                     |                                       |                                    |
| /HV version                            | #   |                                       |                                    |
| /UHV version                           | #   |                                       |                                    |

## Technical Drawings

