

ECR3030/NUM(+)

nanoprecise closed loop stepper rotator for endless rotation in both directions with optoelectronic sensor

Technical Specifications

Technology

travel mechanism inertial piezo drive

Size and Dimensions

footprint; height 30 x 30; 13.5 mm
maximum size 30 x 30; 13.5 mm
weight (aluminum/stainless steel) 28/66 g

Coarse Positioning Mode

input voltage range 0 .. 60 V
typical actuator capacitance 1.15 μ F
travel range (step mode) 360 ° endless
typical minimum step size 0.4 m°
maximum drive velocity (@ 45 V) 10 °/s

Fine Positioning Mode

input voltage range 0 .. 100 V
fine positioning range 0 .. 12 m°
fine positioning resolution μ °

Materials

positioner body (/RT) aluminum
positioner body (/HV, /UHV) stainless steel
actuator PZT ceramics
connecting wires insulated twisted pair, copper
bearings stainless steel

Load (@ ambient conditions) **mounting orientation: axis vertical**

maximum load 0
maximum dynamic torque around axis 2 Ncm

Mounting

from the top 4 through holes dia 2.2 mm, cntrbr. f. M2
from the bottom 4 threads for M2.5 x 2 mm
load on top 8 threads M2 x 2.3 mm
load at the front L-bracket

Article Numbers

/RT version aluminum 1006207
/RT version stainless steel 1006209
/HV version stainless steel #
/UHV version stainless steel #

Compatibility with Electronics

ECC100 piezo positioning controller all versions

Working Conditions

mounting orientation arbitrary
temperature range (/RT, /HV, /UHV) 0 .. 100 °C
max. bake out temperature (/UHV) 150 °C
minimum pressure (/RT) 1E-4 mbar
minimum pressure (/HV) 1E-8 mbar
minimum pressure (/UHV) 5E-11 mbar

Accuracy of Movement

repeatability of step sizes typically 5 % over full range
forward / backward step asymmetry 10%
wobble 6 mrad

Position Encoder

readout mechanism optoelectronic: /NUM & /NUM+/(U)HV
sensor power (when measuring) /NUM: 300 mW & /NUM+/(U)HV: 50 mW
encoded travel range 360 °
wavelength of illumination 870 nm
sensor resolution 0.01 m°
repeatability 1 m°
absolute accuracy < 0.01% of travel range

Connectors and Feedthroughs **/RT Versions** **all /HV, /UHV Versions**

connector type 14-pole connector 15-pin D-Sub connector
50 cm cable with connector 50 cm cable with connector
electrical feedthrough solution --- VFT/HV, VFT/UHV

Technical Drawings

