

NANO STEPPER ACTUATOR UHV (NSAU)



Features

- UHV compatible (completely sealed by welding)
- All stainless steel construction
- Contamination free (no particle generation)
- Nanometer resolution
- Absolute position feedback (no homing needed)
- Push-pull load capacity, large stroke: 10 mm
- Self-locking (set-and-forget)
- Suited for harsh environments (dust)
- Compatible with many motion controllers

Description / Applications

The Nano Stepper Actuator (NSAU) is a completely sealed linear actuator developed for highly accurate positioning in Ultra High Vacuum (UHV) or Ultra Clean Environments. A stepper motor combined with a high quality reduction and ball screw offers backlash free nanometer resolution and high load capacity. Electrical limit switches and motor temperature sensing are standard integrated and the absolute encoder offers the user high resolution position feedback and absolute position information, even after a power-off.

Specifications

specs	unit	NSAU-010A
ACTUATOR SPECIFICATIONS		
Active axes	-	1
Type of motion	-	x
Range	mm	10
Max. velocity	mm/s	0.2
Step resolution nominal	nm	50 (full step)
Step resolution best	nm	2.5 (20x micro stepping)
Repeatability	-	2 x step resolution
Accuracy full stroke	µm	6 (IT5)
Backlash	m	none
Axial load capacity	N	± 300
Radial load capacity	N	5% of actual axial load
Axial stiffness	N/m	2e7
Mass	kg	1.0
Vacuum compatibility	-	UHV
Bake-out temperature	°C	<100
Stepper motor	-	2 phase, bipolar
Max current / phase	A	<0.8
Resistance / phase	Ω	5,4
Inductance / phase	mH	1,5
Limit switches	-	Normally open, switch to GND
Thermal sensor	-	Pt1000, keep below 80°C
Encoder voltage	VDC	4.75-5.5
Encoder current, typical	A	0,08
Encoder resolution *	-	12 bit ST 12 bit MT 2,44nm/count
Encoder interface	-	SSI, RS485/RS422 compatible
DRIVE ELECTRONICS		
Controller	-	CAB-230(115), NCM1
* ST is SingleTurn resolution, counts per revolution MT is MultiTurn resolution, the number of countable revolutions		

Mechanical and electrical information

Download 3D-Step files, interface drawings and user manuals from:
<https://www.jpe-innovations.com/cryo-nano-products/>

Contact

For quotations, orders, customization or specials, please contact us at:
<https://www.jpe-innovations.com/contact/>

Ordering Information

NSAU-010A /UHV

Nano Stepping Actuator UHV-Absolute Encoder