

Nano-SPMZ

Features

- ▶ *Single axis Micro and Nanopositioning*
- ▶ *25mm coarse motion with hi-res encoder*
- ▶ *30 micron nanopositioning*
- ▶ ***pico** position sensor technology*
- ▶ *Closed loop control*

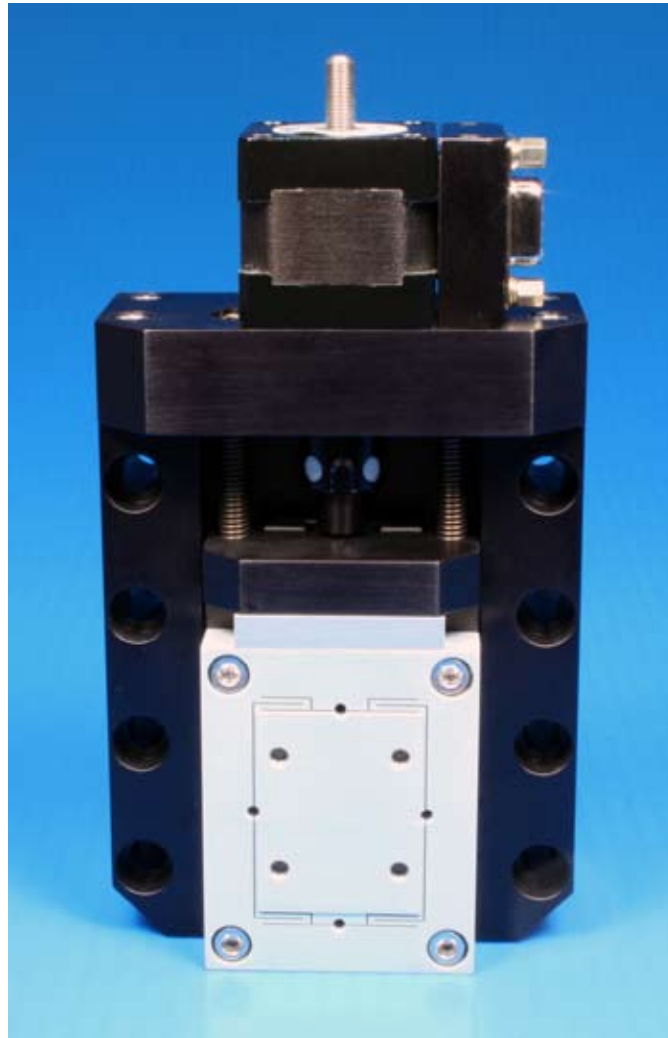
Typical Applications

- ▶ *Nanoindenting*
- ▶ *Nanomanipulation*

LabVIEW Compatible USB Interfaces



Examples, tutorial, and Nano-Route[®] 3D supplied with Nano-Drive[®] USB interfaces.



Nano-SPMZ constructed from aluminum.

Product Description

The Nano-SPMZ integrates single axis micropositioning and high resolution nanopositioning into a compact unit which is compatible with optical tables and standard mounting accessories. Stepper motor driven coarse positioning over 25mm can produce a minimum step size of 95nm. An optional high resolution linear encoder incorporated into the coarse positioning stage continuously

monitors positions down to 20nm. Nanopositioning over 30 microns provides the ultimate positioning resolution of 60 picometers with the stability of the proprietary **pico** position feedback sensors. The USB digital interface provides direct PC control of the micropositioner and nanopositioner as well as access to the linear encoder and position sensor inside the nanopositioner.

Technical Specifications

Micropositioner

Range of motion (micropositioner)	25 mm
Micropositioning step size	95 nm
Maximum speed.....	4 mm/sec
Motion Profile	
Motion >500 steps	Automatic accel/decel control
Motion ≤500 steps	Constant 1 step/ms
Linear encoder resolution	20 nm
Body Material	Aluminum
Controller	Micro-Drive™
Computer interface	Bidirectional USB

Nanopositioner

Range of motion (nanopositioner).....	30 μm
Maximum resolution (nanopositioner)	0.06 nm
Resonant frequency (nanopositioner)	4kHz ±20%
Resonant Frequency (100g load)	2 kHz ±20%
Stiffness.....	3.0 N/μm ±20%
Recommended max. load (horizontal)*	1.0 kg
Recommended max. load (vertical)*	0.5 kg
Body Material	Aluminum
Controller	Nano-Drive®
Computer interface	USB

* Larger load requirements should be discussed with our engineering staff.

