Motion Controller | NanoDrive

NEW

Preliminary Available Q2, 2025

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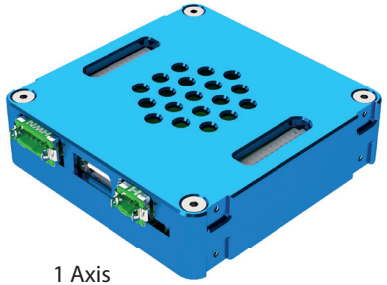
The NanoDrive is an ultra-compact motion controller compatible with all Micronix piezo motors, stepper motors, BLDC motors and DC motors. Multiple axes can be stacked as a compact multi-axis controller and interface with a computer via a RS-485 connector or USB Type C with support for power delivery.

KEY FEATURES

- Configurable motor type (Piezo Motor, Stepper Motor, BLDC and Brushed DC Motor)
- Ultra-compact and modular design allows stacking for multi-axis applications
- Low profile, <14mm height per axis
- Open loop resolution down to < 1 nm (piezo)
- Closed loop resolution down to < 1 nm (dependent on encoder)
- A quad B differential digital (RS-422) and absolute (BiSS-C) encoder interface



1 Axis

3 Axis*
(Top Axis is a Fan Module for cooling)

TECHNICAL DATA

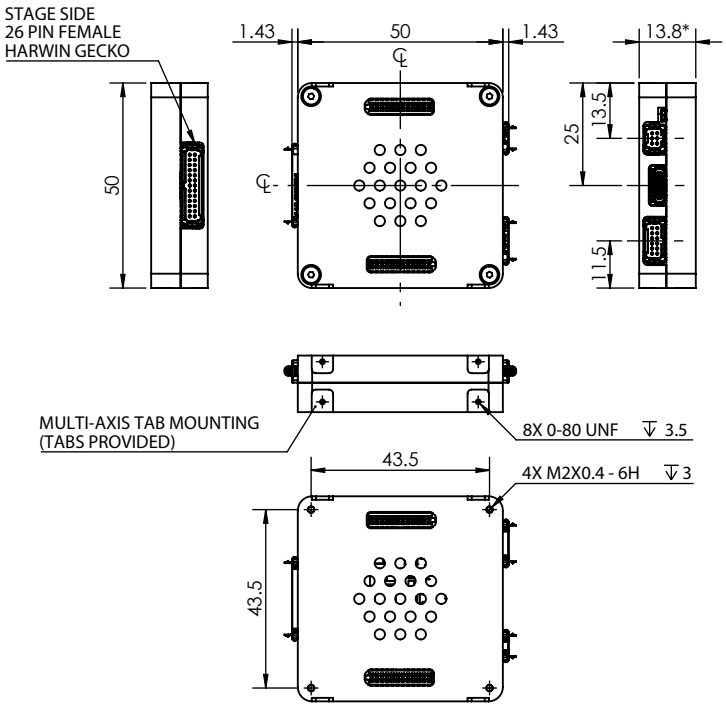
Axes	1, Stackable up to 6
Motor Type	Piezo Motor, Stepper Motor, BLDC Motor, DC Motor
Interface	USB Type C-PD, RS-485
Commands	ASCII
Input Power	10-48 V on 6 Pin Connector, USB Type C (PD - 100 W max)
Motor Output	Max Voltage 48 V, Max Current 1.2A (high current option for BLDC/DC 3A)
Resolution	< 1 nm
Trajectory Mode	Trapezoidal velocity profile
Trajectory Update Frequency	1 kHz
Servo Clock Frequency	10 kHz
Program Storage	32 storable programs
Enclosure Dimensions	L50 x W50 x H13.8 mm
Software	Windows GUI, LabView VI, Python

ORDERING INFORMATION

NanoDrive- [ ][ ][ ][ ] **0**

DRIVE	
Piezo Motor	**1**
Stepper Motor/BLDC Motor	**2**
High Current BLDC/DC Motor	**3**
AXES	
1	**1**
:	:
Up to 6 Axes	**6**
POWER SUPPLY **	
50W (24V 2.10A)	**0**
65W (24V 2.71A)	**1**
100W (36V 2.78A)	**2**
90W (48V 1.88A)	**3**
ENCODER INTERFACE	
Digital Incremental (RS-422)	**0**
Absolute (BiSS-C)	**1**

** Power supply dependent on stage specification.
Micronix will choose proper supply matching the stage.



• all dimensions are in millimeters

*2 or more axis stacks will include a fan enclosure the same height as 1 axis enclosure

Specifications are subject to change without notice.

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PRECISION MOTION SOLUTIONS