

6- Axis Motion Hexapod

FAST AND COMPACT FOR HIGH DYNAMICS APPLICATIONS



H-811.S11

- + Travel ranges to 34 mm / 42°
- + Velocity to 25 mm/ s
- + Dynamics to 25 Hz over 0.1° travel range
- + Integrated wave generator
- + Developed for test stations for image stabilization
- + CIPA certified



Certificate of
Registration of
Vibratory Apparatus

Reference- class 6- axis positioning system

Parallel- kinematic design for six degrees of freedom making it significantly more compact and stiff than serial- kinematic systems, higher dynamic range, no moved cables: Higher reliability, reduced friction. Vacuum- compatible version to 10^{-6} hPa available

Direct drive with brushless DC motors (BLDC) and long- life ball screws

High precision, velocity and lifetime

H-811.S11 incl. 6D controller for Hexapods, plus two additional servo axes

- Digital I/ O interfaces for trigger signal emission
- Precise running of predefined motion profiles with high path accuracy

Powerful digital controller, open software architecture

User- defined, stable pivot point, software- selectable. Positions commanded in Cartesian coordinates. Macro programming. Open source LabVIEW driver set. Work space simulation software. Virtual Hexapod machine software. Optional: Collision avoidance software (external obstacles)

Fields of application

Research and industry, test systems, e.g. for image stabilization in cameras and mobile devices

Specifications

Preliminary data	H-811.S11	Unit	Tolerance
Active axes	X, Y, Z, x', y', z'		
Motion and positioning			
Travel range* X, Y, Z	$\pm 17, \pm 16, \pm 6.5$	mm	
Travel range* x', y', z'	$\pm 10, \pm 10, \pm 21$	°	
Single- actuator design resolution	80	nm	
Min. incremental motion X, Y	2	μm	typ.
Min. incremental motion Z	1	μm	typ.
Min. incremental motion x', y', z'	12	μrad	typ.
Repeatability X, Y	± 0.5	μm	typ.
Repeatability Z	± 0.2	μm	typ.
Repeatability x', y'	± 8	μrad	typ.
Repeatability z'	± 15	μrad	typ.
Max. velocity X, Y, Z	25	mm/ s	
Max. velocity x', y', z'	325	mrad/ s	
Typ. velocity X, Y, Z	10	mm/ s	
Typ. velocity x', y', z'	250	mrad/ s	
Mechanical properties			
Load (base plate horizontal / any orientation)	1.5 / 0.3	kg	max.
Holding force, de- energized (base plate horizontal / any orientation)	15 / 2.5	N	max.
Motor type	Brushless DC Motor		
Miscellaneous			
Operating temperature range	0 to 50	°C	
Material	Stainless steel, aluminum		
Mass	2.2	kg	± 5 %
Cable length	2	m	± 10 mm

Technical data specified at 20 ± 3 °C.

* The travel ranges of the individual coordinates (X, Y, Z, x', y', z') are interdependent. The data for each axis in this table shows its maximum travel, where all other axes are at their zero positions. If the other linear or rotational coordinates are not zero, the available travel may be less.

Order Information

Mechanics with controller

H-811.S11

Miniature Hexapod Microrobot for High- Dynamics Applications, Direct Drive, 25 mm/ s, 1.5 kg Load, 2 m Cable, with 6- D Hexapod Controller, Control of 2 Additional Servo- Motor Axes Included, TCP/ IP and RS-232 Interface, 19" Chassis

Controllers / Drivers / Amplifiers

[C-887.311 Hexapod Control with EtherCAT®](#)

Related Products

[H-840 6- Axis Hexapod](#)

[H-824 6- Axis Hexapod](#)

[H-820 6- Axis Positioner with Controller](#)

[H-860KMAG High- Dynamics Hexapod](#)

[H-811 6- Axis Miniature Hexapod](#)

Technology

[Hexapodspezifische Software von PI | Hexapoden erfordern aufgrund ihres parallelkinematischen Aufbaus eine besonders komplexe Ansteuerung. Weiterlesen ...](#)

[Piezopositioniersysteme mit paralleler Kinematik | In einem Parallelkinematik- Mehrachsensystem gibt es nur eine bewegte Plattform, auf die alle Aktoren direkt einwirken. Weiterlesen ...](#)

[Hexapoden – Parallelkinematische Positioniersysteme | Ein Hexapod ist ein System für die Bewegung und Positionierung, Justierung und Verschiebung von Lasten in sechs Achsen im Raum, drei linearen und drei rotatorischen. Weiterlesen ...](#)

[Hexapod as Motion Simulator | Motion simulators have higher motion dynamics requirements \(shakers\). Learn more ...](#)

Drawings / Images

H-811, dimensions in mm

