

# EVO-AMI

## Compact two-axis positioning and rate table

EVO-AMI is a compact, two-axis positioning and rate table which features all required performance parameters for test and calibration of MEMS or FOG-based inertial navigation systems or optronic payloads.



### BENEFITS

- Best price/performance ratio on the market
- Compact size
- Maintenance free
- Automated testing
- Lowest cost of ownership
- Can operate within climatic chambers for temperature and motion simulation

### FEATURES

- Direct drive brushless electric motors
- High accuracy optical encoders
- Custom slip-ring options
- Climatic chamber option with LN<sub>2</sub>, CO<sub>2</sub> or mechanical refrigeration

### CONTROLLER FEATURES

Exail nGine controller including:

- Auto-tuning of controller parameters
- Adaptive sine
- Auto-tuned anti-cogging
- Real-time built-in-test
- Real time interface options
- Advanced unbalance and fault detection
- Axis cross-coupling compensation

Exail ProaXe Graphical User Interface (GUI)

### TRACK RECORD

Exail has been providing position/rate tables and motion simulators for more than 60 years, including more than 20 years with the combination of direct drive brushless electric motors and optical encoders. This unique experience allows Exail to build the most accurate, stable and dynamic systems, fulfilling all the needs for testing of inertial and optronic payloads.

### ADVANCED PERFORMANCES

EVO-AMI is designed with key components chosen for having the best quality. Brushless motors, optical encoders and slip-ring capsules are critical to the performance of the complete system. Every EVO-AMI comes with Exail nGine controller and ProaXe Graphical User Interface, which are the most advanced control electronics in terms of performance, efficiency and safety.

### A SCALABLE TEST-TABLE

EVO-AMI can evolve with your process. The compact, two-axis test-table may be combined with an EVO-10 single-axis test-table to create a three-axis solution and with a thermal-chamber (mechanical, LN<sub>2</sub>, CO<sub>2</sub>).

## TECHNICAL SPECIFICATIONS

### Payload definition

		EVO-AMI	EVO-AMI-XL
Nominal payload mass	kg	10	20
Maximum payload mass	kg	20	40
Maximum payload dimensions	mm	210 x 190 x 170	400 x 400 x 300

### Dynamic specifications

		Inner	Middle	(Outer)	Inner	Middle	(Outer)
Angular freedom *		∞	∞	∞	∞	∞	∞
Maximum rate **	deg/s	±1,000	±300	±300	±300	±300	±300
Peak acceleration	deg/s <sup>2</sup>	±4,000	±600	±600	±150	±150	±150
Rate accuracy over 360 deg	%	< 0.001	< 0.001	< 0.0005	< 0.001	< 0.001	< 0.0005
Rate stability over 360 deg	%	< 0.005	< 0.005	< 0.0005	< 0.005	< 0.005	< 0.0005
Bandwidth (-3dB/-90 deg)	Hz	> 20	> 20	> 20	> 20	> 20	> 20

### Geometrical specifications

		Inner	Middle	(Outer)	Inner	Middle	(Outer)
Position accuracy	arcsec	< ±10	< ±10	< ±10	< ±10	< ±10	< ±10
Position repeatability	arcsec	≤ ±5	≤ ±5	≤ ±5	≤ ±5	≤ ±5	≤ ±5
Maximum wobble	arcsec	< 20	< 20	< 20	< 20	< 20	< 20
Orthogonality	arcsec	< 30	< 30		< 30	< 30	

### Slip-ring | ROTARY JOINT

Lines	20 lines - 2A - 210VDC
Data type	Ethernet, RS232, RS422

### Thermal chamber | OPTIONAL

Cooling options	Air or water cooled cascade mechanical refrigeration, CO <sub>2</sub> or LN2
Range	°C -40 to +85
Stability	°C < ±1
Gradient	°C/min > -2 for cooling > +2 for heating
Homogeneity	°C < ±1.5

\* Limited option available

\*\* Very high performances not compatible with thermal chamber option

Note : All above specifications are subject to change or custom requirements

## TECHNICAL SPECIFICATIONS

### nGine controller features

Main features	Auto-tuning of controller parameters, adaptive sine bandwidth, auto tuned anti-cogging, real-time built-in-test, trajectory-file, advanced unbalance and fault detection
Remote interfaces	Standard: RS-232 and Ethernet Optional: USB, IEEE-488.2 (GPIB), SCRAMNet or VMIC
Analog inputs/outputs	Scalable analog inputs and outputs for position and rate
Graphical User Interface	ProaXe GUI software supplied for user computer
Options	Pedestal (to bring the TT to a convenient working height) Safety enclosure. Compliant with Machinery Directives (CE)

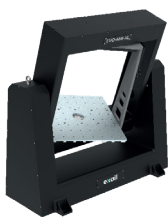
### Physical characteristics



**EVO-AMI**

550 x 275 x 505 mm-height

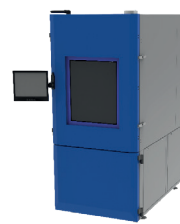
35 kg



**EVO-AMI-XL**

925 x 400 x 880 mm-height

65 kg



**Thermal chamber (optional)**

1235 x 1945 x 2110 mm-height

650 kg



**EVO-10M**

(optional outer axis for EVO-AMI)

505 x 485 x 996 mm-height

160 kg



**EVO-10L**

(optional outer axis for EVO-AMI-XL)

800 x 800 x 730 mm-height

165 kg

### Power and control characteristics



**Desktop**

360 x 430 x 130 mm-height

6 kg



**4U - 19"**

485 x 625 x 180 mm-height

14 kg



**36U - 19" Cabinet**

840 x 600 x 2015 mm-height

250 kg