Three-Axis Motion Simulator Model AC3337

Model AC3337

The Series AC3337 Three-Axis Test Tables are part of an economic series of rate tables. The model allows testing of several medium Inertial Measurement Units (IMU's) or Micro Electro Mechanical Systems (MEMS) sensors simultaneously. The simulator is capable of simulating the roll, pitch and yaw motion of a vehicle in space.

The axes are driven by direct drive brushless motors. The brushless motors offer excellent torque and since they have no wear parts the reliability is excellent. AC drive amplifiers produce the required current to power the motors. The table features excellent instantaneous rate stability and precise, stable absolute positioning.

The pitch axis is equipped with a stow lock to facilitate the safe loading/unloading of the UUT. The yaw axis is vertical and supports the middle axis. The simulator is secured to the facility floor using leveling wedges.

Slipring capsules take the signals and or power from the table base to the device under test. ACUTRONIC offers three standard slipring packages for better economy.

The table is controlled by the ACUTROL®3000 digital controller. The controller has a touch sensitive display and a scalable analog input/output interface. Optionally, the standard digital interfaces of IEEE-488 and Ethernet (TCP/IP) can be supplemented with VMIC or SCRAMNet reflective memory interfaces. For more details, please refer to the ACUTROL®3000 datasheet.

Dimensions	Height, max	mm	1810
	Height of middle axis	mm	1400
	Width across middle axis	mm	1390
	Base dimension	mm	1450 x 1450 (LxW) (turn diameter)
	Table top diameter	mm	300 (20xM6 helicoils)
	Table top offset	mm	87
	Table top flatness	mm	0.05
Unit Under Test (UUT)	Payload weight	kg	20 (nominal)
	Clearance envelope	mm	300 x 350 (ØxH)

Mech. specifications	**Roll Axis**	**Pitch Axis**	**Yaw Axis**
Orthogonality	+/-5”		+/-5”
Wobble	<5’’	<5’’	<5’’
Static and dynamic performances			
Angular freedom	Continuous	Continuous	Continuous
Positioning accuracy	5 arcsec RSS	5 arcsec RSS	5 arcsec RSS
Rate range	+/-1500°/s	+/-400°/s	+/-400°/s
Acceleration, no load with load	1’500°/s^2 Load inertia dependent	400°/s^2 Load inertia dependent	450°/s^2 450°/s^2

Slipring Configuration according to standard wiring schematics		
	Ways	**Connectors**
Wiring Typ 1A	70 lines rated 2A, 150VDC	2x 37pin D-Sub
Wiring Typ 2A	45 lines rated 2A, 150VDC +10 lines rated 5A, 150VAC	1x 50pin D-Sub 1x 15pin D-Sub
Wiring Typ 3A	45 lines rated 2A, 150VDC +4 lines rated 20A, 400VDC	1x 50pin D-Sub 1x 5pin D-Sub (5W5)

Options

- Standard (450mm) or customized (up to max. 450mm) table top (dynamic specification subject to change)
- RF (up to 18GHz) rotary joints for GPS signals
- Base template

Installation requirements

- 3 x400VAC +/-8% with ground (PE; no neutral required), 50/60Hz, 16Amps fused.

Packing details (approximate)

- Box 1 (simulator): 170x100x200cm (WxDxH), Grossweight: 735kg, Netweight: 500kg
- Box 2 (console): 85x100x235cm (WxDxH), Grossweight: 440kg, Netweight: 285kg

Delivery time

- 8 months average

For further information, contact:
ACUTRONIC USA Inc.
640 Alpha Drive, Pittsburgh, PA 15238
USA
Phone: 412-963-9400 Fax: 412-963-0816
Email: aus@acutronic.com

Internet: www.acutronic.com

ACUTRONIC Switzerland Ltd.
Techcenterstrasse 2, 8608 Bubikon
Switzerland
Phone: +41 55 253 23 23 Fax: +41 55 253 23 33
Email: marketing@acutronic.ch

Three-Axis Motion Simulator Model AC3337-TC

The Series AC3337-TC Three-Axis Test Tables are part of an economic series of rate tables.
The model allows testing of several medium Inertial Measurement Units (IMU's) or Micro Electro Mechanical Systems (MEMS) sensors simultaneously.

The axes are driven by direct drive brushless motors. The brushless motors offer excellent torque and since they have no wear parts the reliability is excellent. AC drive amplifiers produce the required current to power the motors. The table features excellent instantaneous rate stability and precise, stable absolute positioning.

The pitch axis is equipped with a stow lock to facilitate the safe loading/unloading of the UUT within the temperature chamber, cooled by the expansion of Carbon Dioxide CO_2 gas (-TCC) or Liquid Nitrogen (-TCN). The yaw axis is vertical and supports the middle axis. The simulator is secured to the facility floor using leveling wedges.

Slipring capsules take the signals and or power from the table base to the device under test. ACUTRONIC offers three standard slipring packages for better economy.

The table is controlled by the ACUTROL®3000 digital controller. For more details, please refer to the ACUTROL®3000 datasheet.

Dimensions	Height, max	mm	1810
	Height of middle axis	mm	1400
	Width across middle axis	mm	1390
	Base dimension	mm	1450 x 1450 (LxW) (turn diameter)
	Table top diameter	mm	300 (20xM6 helicoils)
	Table top offset	mm	25
	Table top flatness	mm	0.05
Unit Under Test (UUT)	Payload weight	kg	20 (nominal)
	Clearance envelope	mm	300 x 240 (ØxH) inside chamber
Thermal Chamber	Temperature Range	degC	-55 / +100
	Cooling gradient	degC/min	-4
	Heating gradient	degC/min	+4
	Stability	degC	+/-1.5

Mech. specifications	**Roll Axis**	**Pitch Axis**	**Yaw Axis**
Orthogonality	+/-5”		+/-5”
Wobble	<5’’	<5’’	<5’’
Static and dynamic performances			
Angular freedom	Continuous	Continuous	Continuous
Positioning accuracy	5 arcsec RSS	5 arcsec RSS	5 arcsec RSS
Rate range	+/-1’500°/s	+/-400°/s	+/-400°/s
Acceleration, no load with load	1’500°/s^2 Load inertia dependent	400°/s^2 Load inertia dependent	400°/s^2 400°/s^2

Slipring Configuration according to standard wiring schematics		
	Ways	**Connectors**
Wiring Typ 1B	52 lines rated 2A, 150VDC	2x 37pin D-Sub
Wiring Typ 2B	28 lines rated 2A, 150VDC +10 lines rated 5A, 150VAC	1x 50pin D-Sub 1x 15pin D-Sub
Wiring Typ 3B	28 lines rated 2A, 150VDC +4 lines rated 20A, 400VDC	1x 50pin D-Sub 1x 5pin D-Sub (5W5)

Options

- Customized (up to max. 300mm) table top (dynamic specification subject to change)
- RF (up to 18GHz) rotary joints for GPS signals
- Base template

Installation requirements

- 3 x400VAC +/-8% with ground (PE; no neutral required), 50/60Hz, 25Amps fused.
- LN_2 supply

Packing details (approximate)

- Box 1 (simulator): 170x100x200cm (WxDxH), Grossweight: 755kg, Netweight: 520kg
- Box 2 (console): 85x100x235cm (WxDxH), Grossweight: 460kg, Netweight: 305kg

For further information, contact:
ACUTRONIC USA Inc.
640 Alpha Drive, Pittsburgh, PA 15238
USA
Phone: 412-963-9400 Fax: 412-963-0816
Email: aus@acutronic.com

Internet: www.acutronic.com

ACUTRONIC Switzerland Ltd.
Techcenterstrasse 2, 8608 Bubikon
Switzerland
Phone: +41 55 253 23 23 Fax: +41 55 253 23 33
Email: marketing@acutronic.ch