



## Inertial Guidance Test and Calibration System Two-Axis Motion Simulator Model AC2267-TC

# ACUTRONIC



The Model AC2267-TC\_ is a two axis, high precision test stand equipped with a large temperature chamber. The size of the useful chamber volume permits the testing of several UUT's simultaneously. Since most of the test time is used reaching or dwelling at defined temperature levels, testing multiple units reduces the test and calibration cost considerably.

The table offers excellent instantaneous rate stability and precise and stable positioning. High precision encoding is achieved by industry standard position transducers. The systems are fitted with direct drive brushless motors offering high torque and therefore high accelerations. A wide variety of motors allows adjusting the torque capability according to customer requirements.

While the standard 52 line slipring capsule offered can meet most customer's needs, testing multiple UUT demands large slipring capsules with special connections which the customer must define.

Standard to ACUTRONIC slipring designs is the use of four-brush contacts per ring for signal lines to avoid micro interruptions, which could corrupt digital signals at high rotational speeds.

There are three cooling systems offered; cooling by the expansion of Liquid Nitrogen LN<sub>2</sub> (TCN), cooling by CO<sub>2</sub> gas (TCC) or cooling by a free-standing dual-stage electromechanical water-cooled refrigeration system (TCM). TCM is ecologically friendly and more economic over the useful lifespan of the test instrument.

The table is controlled by the ACUTROL®3000e digital controller. The controller has a touch sensitive display and a scalable analog input/output interface. Optionally, the standard Ethernet (TCP/IP) digital interface can be supplemented with IEEE-488 (GPIB) or RS232/422. For real time operation, VMIC or SCRAMNet reflective memory interfaces are available. For more details, please refer to the ACUTROL®3000e datasheet.

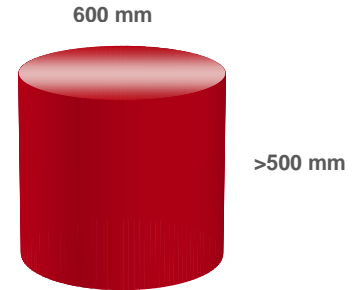


### Unit Under Test (UUT)

Mass (max)	120 kg
Mass (nominal)	40 kg
Maximum envelope	600 dia. x 500mm (inside chamber)
Table top diameter	660 mm dia.
Hole Pattern	50 mm grid, M6
Table top flatness	0.05 mm
Table top offset	0 mm

### Temperature Chamber

Temperature Range	-55 / +100 C°
Cooling gradient (peak)	-2 C° (-4 C° with LN <sub>2</sub> or CO <sub>2</sub> )
Heating gradient (peak)	+4 C°
Stability	+/- 1 C°



### Specifications

	Inner Axis	Outer Axis
Angular freedom	continuous	continuous
<b>Position</b>		
Accuracy	< 1 arc sec RSS	< 1.5 arc sec RSS
Command resolution	0.00001 deg	0.00001 deg
Repeatability	< 1 arc sec	<1 arc sec
<b>Rate</b>		
Range	± 1'200 deg/sec	± 600 deg/sec
Stability		
-over 360 deg	0.0001%	0.0001%
-over 10 deg	0.005%	0.005%
Command resolution	± 0.00001 deg/sec	± 0.00001 deg/sec
<b>Dynamic</b>		
Bandwidth (no load)	80 Hz at -3dB	15 Hz at -3dB
Acceleration (no load)	3'000 deg/sec <sup>2</sup>	200 deg/sec <sup>2</sup>
Option (O Axis)		400 deg/sec <sup>2</sup>
<b>Mechanical</b>		
Wobble	< 2 arc sec max	< 5 arc sec max
Orthogonality		< 5 arc sec

### Major Simulator Dimensions

Clearance Dimensions (W x D x H)	2'600 x 1'550 x 1'860 mm (inc. rotational clearance): Mass 1'800 kg
Height of TT	1'130 mm
Control and Power Cabinet (W x D x H)	650 x 820 x 1940 mm. Mass 320 kg

### Slipring Standard Options

	Ways	Connectors
Wiring Typ 1A	52 lines rated 2A, 150VDC	2x37pin D-Sub
Wiring Typ 2A	28 lines rated 2A, 150VDC	1x 50pin D-Sub
	+10 lines rated 5A, 150VAC	1x 15pin D-Sub
Wiring Typ 3A	28 lines rated 2A, 150VDC	1x 50pin D-Sub
	+4 lines rated 20A, 400VDC	1x 5pin D-Sub (5W5)

### Options

- Customized table top (dynamic specification subject to change)
- Electro Mechanical Brakes (for "noiseless" bias stability tests)
- Customized slipring and connector configurations
- Contactless Ethernet slipring for 1 Gbit/s
- RF (up to 18GHz) rotary joints for GPS signals up to 2 channels
- Fiber optic rotary joints for highest data rates up to 32 channels
- Gas/fluid rotary joints

**The specifications identified in this data sheet are representative of standard systems. To satisfy customer specific requirements ACUTRONIC is able to design systems with specifications that are increased or decreased relative to standard systems.**