

Inertial Guidance Test Instrument

Three Axis Rate and Positioning Table Series AC3350-08

Modes of Operation

- Absolute Positioning - resolution of 0.00001 degree
- Rate – absolute and relative rate, excellent instantaneous rate stability
- Track Mode – for real time simulation of motion profiles.
- Synthesis mode – sinusoidal motion by commanding amplitude and frequency
- Local or remote control via touch sensitive operator panel or digital interface
- Analog readout and command with 16 bit resolution



Description

The AC3350 motion simulator is a three degree-of-freedom test stand that can be used to test a wide variety of inertial navigation packages, motion sensors, and other inertial components.

The UUT (Unit Under Test) attaches to the inner (roll) gimbal. For this purpose the inner gimbal has T-slots for sliding nut. The design offers convenient flexibility in the mounting of the UUT or the holding fixture. All three axes of rotation have a single point of intersection.

Electrical sliprings allow connection between the UUT and external test equipment while the system turns. The standard slipring capsule features power rings and single shielded signal rings. Signal lines have four brush contacts per ring to avoid micro interruptions, which could corrupt digital signals. Beside the standard capsule there is a wide variety of slipring capsule designs and wiring schematics optional available. The table is equipped with direct drive permanent magnet brushless torquers. The servo feedback transducers are also direct mounted and consist of a two-pole resolver and a 720-pole Inductosyn.

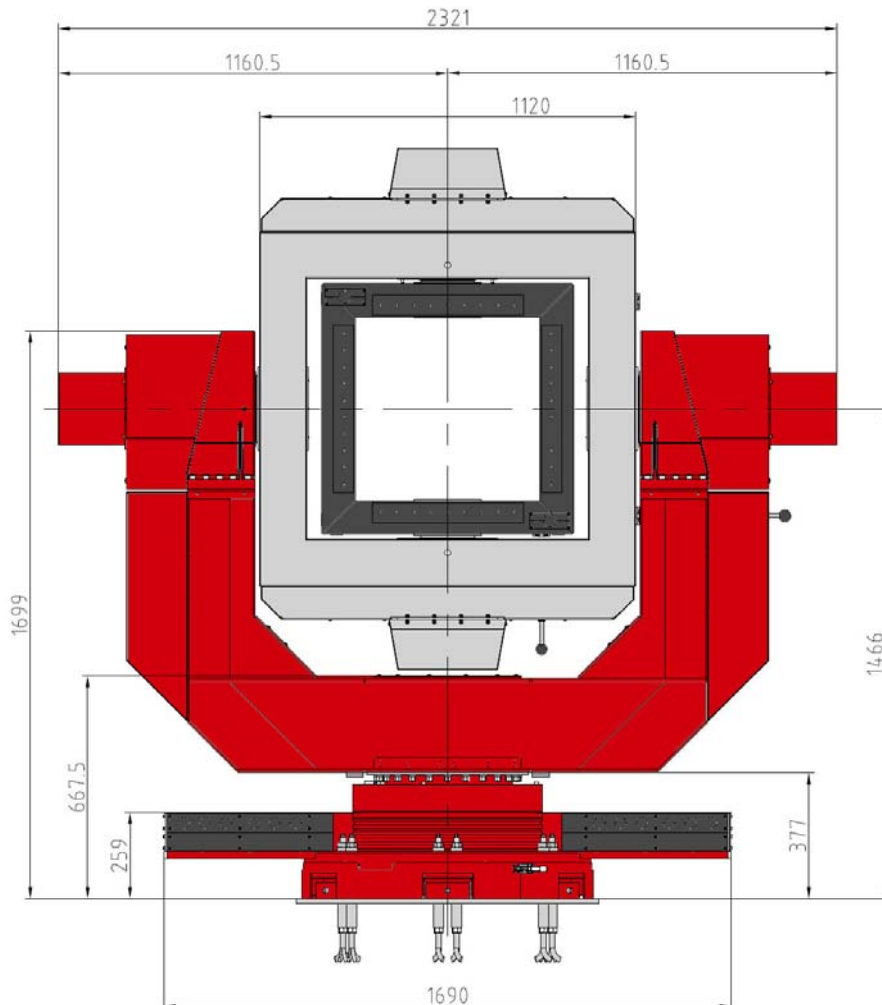
The ACUTROL® Model ACT3000 controls the table. The digital controller has a colour, touch sensitive display and scalable analog input/output interface. Optionally, the standard digital interfaces, IEEE-488 and Ethernet (TCP/IP) can be supplemented with a high speed, real time interface or many other commercially available computer interfaces.

PERFORMANCE SPECIFICATION

Unit Under Test	Payload Nominal	30kg	
	Payload Peak	50kg	
	Payload dimensions	500mm cube	
	Slipping Lines to UUT (Other options available)	100 ways	90 x 2A, 150VDC 10 x 20A, 400VAC

	<u>Inner axis</u>	<u>Middle axis</u>	<u>Outer axis</u>	
Model AC3350-08	roll	pitch	yaw	
Angular freedom	unlimited	unlimited	unlimited	
Position Accuracy	2secsRSS	2secsRSS	2secsRSS	arc secs
Wobble	5	5	5	arc secs
Orthogonality	<5	<5		arc secs
Rate Peak	+/- 1'000	+/- 500	+/- 400	deg/sec
Rate resolution	0.00001	0.00001	0.00001	deg/sec
Rate Stability	<0.0001%	<0.0001%	<0.0001%	over 360degs
Rate Stability	<0.05%	<0.05%	<0.05%	over 10degs
Acceleration peak, no load	2'500	350	150	deq/sec ²

TABLE ASSEMBLY



Options

- Torquers to meet extended rate and acceleration requirement
- Non standard slipping capsules (RF ways, 1553 Data Bus, GPS)
- SCRAMNet or VMIC digital interfaces for real time control

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