

ST-040-2T-02

Dual-axis temperature-controlled electric turntable

This dual-axis temperature-controlled electric rotary stage comprises a dual-axis electric rotary stage (inner/outer frame) and a temperature control unit. Its primary function is to provide high-precision angular positioning and velocity control for the test load, whilst simultaneously simulating ambient temperatures ranging from -55°C to $+120^{\circ}\text{C}$.



Product Features

- Dual-axis continuous rotation with a 360° infinite range
- Angular positioning accuracy of up to ± 5 arcseconds
- Wide speed range ($0.001^{\circ}/\text{s}$ to $500^{\circ}/\text{s}$)
- Temperature control range: -55°C to $+120^{\circ}\text{C}$
- Maximum load capacity: 40 kg
- User slip rings available in up to 120 rings

Suitable scenarios

Suitable for the aerospace and inertial navigation industries, it is used for high- and low-temperature dynamic performance testing and calibration of components such as inertial navigation systems, accelerometers and gyroscopes.

Technical Specifications

Parameter categories	Parameter items	Parameter values
Accuracy Performance	Angular position accuracy	$\leq \pm 5''$
	Angular position repeatability	$\leq \pm 3''$
	Rate stability	$\omega < 1^\circ/\text{s}$: 3×10^{-3} (averaged over 1°) $1-10^\circ/\text{s}$: 3×10^{-4} (averaged over 10°) $\omega \geq 10^\circ/\text{s}$: 3×10^{-5} (averaged over 360°)
Dynamic Performance	Maximum angular velocity	Inner frame: $\pm 500^\circ/\text{s}$ Outer frame: $\pm 200^\circ/\text{s}$
	Maximum angular acceleration	Inner frame: $\pm 300^\circ/\text{s}$ Outer frame: $\pm 100^\circ/\text{s}$
Range of Motion	Range of azimuth/elevation movement	Inner frame: 360° continuous Outer frame: 360° continuous
Mechanical Specifications	Load capacity	40 kg
	Table diameter/dimensions	$\varnothing 450$ mm (stainless steel)
Environmental Protection	Operating temperature	-55°C to $+120^\circ\text{C}$ (inside the temperature-controlled chamber)
Power and Communications	Power supply requirements	Three-phase 380 V / 50 Hz
	Control interface	RS-422 / Ethernet