

# ST-050-2T

## Dual-axis temperature-controlled turntable

This dual-axis temperature-controlled turntable consists primarily of a dual-axis mechanical turntable and a temperature control system. Its core function is to perform high-precision rate and position testing and calibration of inertial components, such as fibre-optic gyroscopes and IMUs, under controlled temperature conditions.



### Product Features

- Stable and reliable performance
- Simple and convenient operation
- Low purchase cost
- Load capacity of up to 50 kg
- High angular velocity accuracy
- Fast dual-axis synchronisation

### Suitable scenarios

Suitable for the inertial navigation and precision instrument manufacturing industries, it is used in the research and development, production, commissioning, maintenance and calibration of fibre-optic gyroscopes, IMUs (inertial measurement units) and other inertial components.

## Technical Specifications

| Parameter categories      | Parameter items                     | Parameter values                                                                                                                                                                                                                                           |
|---------------------------|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Accuracy Performance      | Angular position accuracy           | Inner ring $\pm 2''$ , outer ring $\pm 3''$                                                                                                                                                                                                                |
|                           | Rate stability                      | Better than $1 \times 10^{-3}$ when $\omega \leq 1^\circ/\text{s}$<br>Better than $1 \times 10^{-4}$ between 1 and $10^\circ/\text{s}$<br>Better than $1 \times 10^{-5}$ when $\omega \geq 10^\circ/\text{s}$<br>(averaged over $1^\circ$ to $360^\circ$ ) |
| Dynamic Performance       | Maximum angular velocity            | Inner loop $\pm 1200^\circ/\text{s}$ , outer loop $\pm 300^\circ/\text{s}$                                                                                                                                                                                 |
|                           | Maximum angular acceleration        | Inner loop $1000^\circ/\text{s}^2$ , outer loop $300^\circ/\text{s}^2$                                                                                                                                                                                     |
| Range of Motion           | Range of azimuth/elevation movement | Both inner and outer loops: infinitely continuous                                                                                                                                                                                                          |
| Mechanical Specifications | Load capacity                       | 50 kg                                                                                                                                                                                                                                                      |
|                           | Table diameter/dimensions           | $\Phi 400$ mm                                                                                                                                                                                                                                              |
| Environmental Protection  | Operating temperature               | Accuracy Performance                                                                                                                                                                                                                                       |
| Power and Communications  | Power supply requirements           | AC 220V $\pm 10\%$ / 50Hz                                                                                                                                                                                                                                  |
|                           | Control interface                   | Ethernet / RS-232                                                                                                                                                                                                                                          |