

AR-300-2W-02

Direct-drive dual-axis satellite tracking turntable

This turntable is a dual-axis (azimuth/elevation) direct-drive turntable, equipped with an absolute encoder and a locking mechanism, designed to drive an opto-mechanical payload for programme-controlled or real-time tracking of space targets such as satellites.



Product Features

- Dual-axis direct drive, TL-type structure
- Azimuth $\pm 358^\circ$, elevation -5 to 95°
- Tracking speed: azimuth $\geq 2^\circ/\text{s}$
- Absolute encoder, resolution 3 arcseconds
- Load capacity 30 kg, net weight ≤ 80 kg
- Dual-axis locking protection function

Suitable scenarios

Suitable for the satellite communications ground sector, serving as a tracking and pointing servo mechanism for quantum communications ground receiving stations, laser communications terminals or optical observation equipment.

Technical Specifications

Parameter categories	Parameter items	Parameter values
Accuracy Performance	Angular position accuracy	$\pm 3''$
	Angular position repeatability	$\pm 2''$
	Tracking/pointing accuracy	For spatial targets, single-axis error $< 5''$ (RMS); for stellar targets, error $< 0.5''$ within 10 seconds and $< 1''$ within 60 minutes
	Rate stability	$\omega \leq 1^\circ/\text{s}$: 2×10^{-3} (averaged over 1°) $1^\circ/\text{s} \leq \omega < 10^\circ/\text{s}$: 2×10^{-4} (averaged over 10°) $\omega \geq 10^\circ/\text{s}$: 2×10^{-5} (averaged over 360°)
Dynamic Performance	Maximum angular velocity	Azimuth: $\geq 10^\circ/\text{s}$ Pitch: $\geq 4^\circ/\text{s}$
	Maximum angular acceleration	Yaw: $\geq 1^\circ/\text{s}^2$ Pitch: $\geq 1^\circ/\text{s}^2$
Range of Motion	Range of azimuth/elevation movement	Azimuth: $\pm 358^\circ$ Elevation: -5° to $+95^\circ$
Mechanical Specifications	Load capacity	30 kg
	Work surface diameter/dimensions	300 mm
Environmental Protection	Protection rating	Ip20
	Operating temperature	0°C to $+40^\circ\text{C}$
Power and Communications	Power supply requirements	DC 48 V or AC 220 V
	Control interface	Ethernet/UDP, RS422/RS232 and azimuth/elevation encoder feedback interfaces