

Space

Leo / New Space



Space applications

Embark on your next LEO project with the unparalleled Netzer VLS product line - **the only space-proven COTS solutions engineered for excellence**, with affordable prices.

Our VLS series is designed to elevate your project, featuring compact dimensions, minimal weight, and the signature Netzer hollow shaft for unmatched precision. These characteristics are not just benefits; they're essentials for the demands of space exploration.

With a legacy of transforming commercially available components and conventional encoders for the cosmos Netzer has accumulated a unique expertise through numerous successful missions.

Our commitment to innovation means the VLS range meets the rigorous demands of TID (Total Ionizing Dose) and minimal outgassing - key factors for thriving in the harsh environment of space.

Unique values

Features

- **High Precision:** < 0.006 degree
- **Low Power Consumption:** < 100 mAmp
- **Space Proven Performance:** TID (30 Krad) SEE (1E11 p/cm²/s protons @ 200MeV) + Low outgassing.
- **Parylene Conformal Coating:** Improved Low outgassing (TML<1%, CVCM < 0.1%), reduces Tin Whiskers risk
- **Innovative Hollow Shaft Design**
- **Low Profile:** < 7 mm
- **Extreme Temperature Durability:** (including temp drift compensation)
- **Rigorous Testing & Production:** Shock, vibration, and ESS. Thermal vacuum optional
- **Service Life:** MTBF 15 years
- **Customizable Reporting**



Tested for Space



MTBF 15



Extended Temp Range



High Precision

VLS - Encoders for Space Applications - Technical Specifications

Electrical

Supply voltage	Current consumption	Communication	Clock frequency	Material (stator / rotor)	Position update rate
5V ±5%	~90 mA	SSI, BiSS-C	0.1- 5.0 MHz	Polyimide	35 kHz (Optional 375 kHz)

* RoHS compliant standard, non-RoHS optional.

General

VLS-60

OD / ID mm	Height mm	Weight gr.	Resolution	Accuracy	Rotor inertia	Max. speed
60 / 25	6	16	18-20 bit	±0.010°	2,000 gr · mm ²	4,000 rpm

VLS-80

OD / ID mm	Height mm	Weight gr.	Resolution	Accuracy	Rotor inertia	Max. speed
80 / 35	6.6	21	19-21 bit	±0.006°	9,100 gr · mm ²	2,000 rpm

VLS-100

OD / ID mm	Height mm	Weight gr.	Resolution	Accuracy	Rotor inertia	Max. speed
100 / 48	7	42	18-20 bit	±0.006°	15,500 gr · mm ²	4,000 rpm

VLS-140

OD / ID mm	Height mm	Weight gr.	Resolution	Accuracy	Rotor inertia	Max. speed
140 / 90	8	80	19-21 bit	±0.006°	88,500 gr · mm ²	2,000 rpm

VLS-170

OD / ID mm	Height mm	Weight gr.	Resolution	Accuracy	Rotor inertia	Max. speed
170 / 110	8	110	19-21 bit	±0.006°	183,250 gr · mm ²	2,000 rpm

VLS-247

OD / ID mm	Height mm	Weight gr.	Resolution	Accuracy	Rotor inertia	Max. speed
247 / 171	9	220	18-20 bit	±0.006°	781,000 gr · mm ²	4,000 rpm

Environment

EMC	*Operating temp.	Storage temp.	Relative humidity	Built In Test BIT
IEC 6100-6-2, IEC 6100-6-4	-40° C to +105° C	-55° C to +125° C	98% Non condensing	Optional
Protection	Vibration		Shock	
IP 40	7.7grms @ 20 to 2000 Hz (per MIL-810G)		100g 6msec saw-tooth (per IEC 60068-2-27:2009)	

* Extended optional

