

SSTL SSW-110 WHEEL



Surrey Satellite Technology SSW-110 wheel has been utilised on numerous key SSTL missions since 2014 as well as being purchased by various customers for their own spacecraft.

BENEFITS

- >7.5 year design life in LEO orbit or equivalent environment
- Fully integrated electronics
- Hermetically sealed mechanism
- Three fully qualified units
- More than 40 flight units in orbit

FEATURES

- Both current and speed modes implemented
- Single connector for communications & power
- Harness grounding
- Regenerated power returns back to spacecraft bus
- CANBUS or RS422 communications

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SPECIFICATIONS:

Model Code	SSW-110-OLX-1500	SSW-110-NLX-1500
Model Description	Oil lubricated steel bearings	Oil lubricated hybrid ceramic bearings
Design life	7.5 years (>5 billion revolutions*)	
Angular momentum	1.5 Nms	
Max speed (+/-)	5000 rpm	
Speed accuracy (~300rpm)	<0.1 rpm rms	
Max torque	0.011 N.m	
Operating temperature	-20 to +50°C	
Survival temperature	-30 to +60°C	
Radiation (TID)	<5 krad at wheel electronics	
Random vibration (qualification)	11 grms	5 to 8.5 grms **
First mode	>300 Hz	>300 Hz
Mass	2.6 kg	
Volume	Ø128x124 mm	
Moment of inertia (wheel)	0.0028 kg.m ²	
Static unbalance	<0.2 gcm	
Dynamic unbalance	<0.4 gcm ²	
Integrated electronics	Yes	
Power (standby) : 20°C	~ 1.2 W	
Power (5000rpm) : 20°C	~ 10 W	
Power (maximum torque) : 20°C	~ 113 W	
Supply voltage(s)	24.1 - 35V DC	
Data interface	CAN BUS or RS422 Full Duplex	
Tele command & telemetry data examples	Speed, motor current, PID gains, temperatures, internal voltages & currents	

* As of Q1 2021

** Axis dependent. Qualification levels limited for micro vibration, bearings have reduced load capacity compared to SSW-110-OLX-1500
Specifications may be subject to change

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W: sstl.co.uk
E: info@sstl.co.uk
T: +44 (0)1483 803803