



Solar array drive assembly

What is a type 1 solar array drive assembly?

The Type 1 Solar Array Drive Assembly offers a minimum weight, minimum power solution for positioning solar array panels at the lower end of the size/power spectrum. [Learn More >](#) The small satellite Solar Array Drive Assembly (SADA) is a lightweight and compact power solution for positioning solar array panels.

Who makes solar array drive assemblies?

For more than a decade, Honeybee Robotics has been leading designer and manufacturer of Solar Array Drive Assemblies (SADA's). While we often design customized solutions to meet specific requirements, we currently offer two standard configurations that address a wide range of applications.

What is a side-drive solar array drive mechanism (SADM)?

The Side-Drive Solar Array Drive Mechanism (SADM) consists of a slip ring assembly and an actuator coupled by a spur gear set, which, when driven by suitable drive electronics, will position the Solar Array toward the sun for maximum power and transfer the collected energy to the spacecraft power bus.

What is a small satellite solar array drive assembly (Sada)?

The small satellite Solar Array Drive Assembly (SADA) is a lightweight and compact power solution for positioning solar array panels. Continuous rotation of the solar array is facilitated by the integration of a slip ring assembly. [Learn More >](#)

What is a solar array drive?

Solar array drives are a long-established product at Moog. Moog has experience with solar array drives, for both Earth orbit and planetary missions, stretching back to 1980. The solar power application is one of the most mature for Moog actuators and biaxial gimbals.

What is a type 3/5 solar array drive assembly (Sada)?

The single axis Type 3/5 Solar Array Drive Assembly (SADA) is based on the Type 3 Rotary Incremental Actuator with a Type 5 sized Harmonic Drive gear transmission and output duplex pair. This standard SADA has varied over many applications to meet mission requirements. [Learn More >](#)

Solar Array Drive Mechanisms With over two decades of experience and a 100% mission success rate, Beyond Gravity is the trusted partner for SADMs in the space industry. Our SADMs are designed and manufactured to the highest standards, ensuring reliable and efficient power generation for even the most demanding missions.

Consisted of mechanisms and electronics, Solar Array Drive Assembly (SADA) is a key component of spacecrafts such as long life three-axis stabilization satellites and space stations, whose main function is to

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sustain and rotate the solar arrays for sunlight acquisition, as well as transfer power and signals from solar array to spacecraft body [1], [2].

The Solar Array Drive Assembly (SADA) and slip rings will be a MOOG Type 5 with high power slip rings. The offset tube or yoke will be standard technology. The hinges will be standard technology at the end of the offset tube to allow the wing to rotate to service position. The control electronics, a two-channel unit from MOOG,

Background Vibrations in space operations, induced by disturbance torque of solar array drive assembly (SADA), is one of the major setbacks, as these reduce performance precision of satellite. Purpose Aiming to simulate behavior of solar panel, this work provides an analytical modeling and analysis method to calculate the disruption response of SADA rotating ...

The SADM sub-assembly is the Solar Array Drive Mechanism which supports the Solar Array and allows it to rotate at command. To minimize mass and volume, the SADM is a direct drive concept (no reduction gear box), which offers an optimized total mass down to 1.65 kg and a highly compact volume as implied by dimensions in Fig. 3.:

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The Type 1 solar array drive assembly offers a minimum weight, minimum power solution for positioning solar array panels at the lower end of the size/power spectrum. It is based on the Moog Type 1 rotary incremental actuator. Continuous rotation of the solar array is facilitated by the integration of a slip ring

A dynamic model of the solar array drive assembly (SADA) system consisting of a stepper motor and two flexible solar arrays is investigated. The fluctuation compensation of the rotating speed and vibration suppression is studied by integrating the sliding mode control (SMC) method and input shaping (IS) technique. The dynamic equations of the system are derived by ...

IMT develops also Custom SADA (Solar Array Drive Assembly) for Nanosatellites and Small Satellites. We use COTS components to offer traditional space performance and reliability at a price supportive of typical small spacecraft budgets. Thanks to our capabilities the IMT solutions can be easily and rapidly adapted for your specific mission ...

The single axis Type 2 Solar Array Drive Assembly (SADA) is based on the Type 2 Rotary Incremental Actuator. The standard actuator has varied over many applications to meet mission requirements. Generally, the items that tend to vary are interface parameters and power transfer requirements. All of the represented Type 2 SADA designs



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Solar Array Drive Assembly (SADA) Product description. Type SADA-1-2-2-2B SADA is designed with lightweight method. And it is the lightest SADA which is developed and applied in the practical engineering by SAST. The mechanism has 4-level maturity. It is applied successfully in satellites, Lunar exploration and deep-space detection.

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Abstract This paper describes in detail the need for, process of designing, and benefits of a new solar array drive assembly for use on CubeSats. The goal of this project is to enable missions utilizing this architecture to maximize the solar power received via their solar arrays by rotating them towards the sun while minimizing weight and volume. This project is a ...

The Solar Array Drive Assembly (SADA), consists of a one axis tracking system for solar panels for a CubeSat platform. The SADA design considers thermal insulation of mechanical components in order to reduce the risk of fatigue of materials due to thermal cycles during operation.

The Type 1 solar array drive assembly offers a minimum weight, minimum power solution for positioning solar array panels at the lower end of the size/power spectrum. It is based on the Moog Type 1 rotary incremental actuator. Continuous rotation of the solar array is facilitated by the integration of a slip ring assembly on the output of the ...

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The disturbance torque generated via solar array drive assembly (SADA) can significantly degrade the key performance of satellite. The discussed SADA is composed of a two-phase hybrid stepping motor and a set of two-stage straight gear reducer. Firstly, the vibration equation of the two-phase hybrid stepping motor is established via simplifying and linearizing ...

The KARMA (Kongsberg Adaptive Rotation Mechanism Assembly) is a family of products comprising Solar Array Drive Mechanisms (SADM) for interplanetary missions, Geostationary (GEO) satellites, and Low Earth



Solar array drive assembly

Orbiting (LEO) satellites and Antenna Pointing Mechanisms (APM) for LEO data downlink antennas and Inter Satellite Link antennas.

Standard Solar Array Drive Assembly . SADA-150. PRODUCT BRIEF . Version #:1.0 6/4/2024. Standard Solar Array Drive Assembly (SADA-150) o In-Line Design with High Torque Output. o High-Efficiency Slip Ring Design. o Flight-Proven Design with 100% Successful Performance Heritage. o Compact Hybrid Stepper Motor and Harmonic Drive.

A reliable and user friendly SOLAR ARRAY DRIVE ASSEMBLY for small satellites. MAIN FEATURES TECHNICAL SPECS. UP TO. 0 X. ... (no slip rings) and highly modular design ensures fast customization to different platform / solar arrays, 3-month lead times and high-volume production. FAIL-SAFE. In case a failure or safe mode occurs, SnapBack, SARA"s ...

YDING Xilun, et al: Design and Test Analysis of a Solar Array Root Hinge Drive Assembly directly because of the dimensional limits. But for a DC motor, its mechanical torque is proportional to the electrical current. Taking more factors like the reduction ratio and

Learn More > The Side-Drive Solar Array Drive Mechanism (SADM) consists of a slip ring assembly and an actuator coupled by a spur gear set, which, when driven by suitable drive electronics, will position the Solar Array toward the sun for maximum power and transfer the collected energy to the spacecraft power bus. Learn More >

Solar Array Drive Assembly (TRL 9) Provides transmission of solar power and electronic signals between solar array and spacecraft; custom or modular slip ring designs for full 360-degree rotation or cable wrap design for limited angle rotations; EMI shielding; Electrically redundant.

The small satellite Solar Array Drive Assembly (SADA) is a lightweight and compact power solution for positioning solar array panels. Continuous rotation of the solar array is facilitated by the integration of a slip ring assembly. Position telemetry is made available using Moog"s noncontact position sensor technology.

Web: <https://wholesalesolar.co.za>