

SH-18010 Constant Torque Spring Hinge

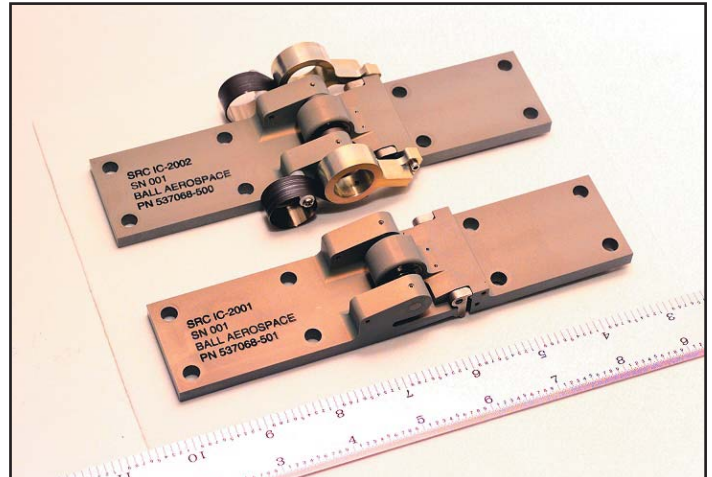
General Description

The Starsys SH-18010 hinge system provides an off-the-shelf solution to small satellite panel deployment. The hinge mechanisms consist of a passive and a powered constant torque hinge. The powered hinge is designed to take axial and radial loads. The passive hinge has axial play to allow panel thermal displacements. Both hinges share the same type of body, arm, bearing, and latching components. The powered hinge has six 1 in-lb constant torque springs; three on each side. The system provides a near constant torque for any deployment angle up to 180°.

Each hinge consists of an axle, a precision spherical bearing, and two spacers (for the powered hinge) or springs (for the passive hinge). Both hinges also have a resettable latching feature that hold the hinge at 0° when deployed. The latch is designed to minimize the rebound of the solar panels when released.

Features:

- Fully redundant self-lubricating surfaces
- Non-binding “floating” hinge line
- Redundant deployment springs
- 0° +/- 0.5° deployment latch



Product Specifications

Mechanical	US	SI
Envelope Dimensions	2.75x6.7x1 in	6.9x17.1x2.5 cm
Misalignment Capability	±3°	
Mass (powered hinge)	7.1 oz	200 grams
Mass (passive hinge)	6.0 oz	170 grams
Redundancy	Redundant Drive Springs, Rotation Surfaces	
Operation Time	Approx. 1 Sec For Deployment	
Output Torque	5.4 in-lbs min. (6 x 1 in-lb springs)	0.61 N-m (6 x 0.11 N-m springs)
Rotation Angle	0°-180°	
Latch Position	0° +/- 0.5°	
Electrical		
Power Input	None	
Telemetry	None	
Connectors	None	
Pinouts	None	
Thermal		
Operating Temperatures	-76° to +176°F	-60° to +80°C
Non-Operating Temperatures	-130° to +248°F	-90° to +120°C
Reset		
Tools Needed	None	
Reset Time	< 1 minute	
Access	Required to Release Latch	

Data for information only and subject to change. Contact Starsys for design data.

