



## **BI-STEM™ ACTUATOR**



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Designed for use as an actuator or instrument boom, the BI-STEM™ deploys and retracts a 0.86-inch (22 mm) diameter BI-STEM™ in lengths adjustable up to 20 feet (6 meters) against a rated compressive load of 5 lb (22 n).

The Model 2646, as shown was developed from the Hubble Space Telescope solar array actuator and is qualified for space applications.

A DC motor drives the actuator which also includes limit switches to terminate and indicate complete deployment or retraction. Length indication is provided in analog form by a potentiometer.

## SPACE APPLICATIONS

- Developed from Hubble Space Telescope Solar Array Deployer
- Skynet IV UHF Antenna Deployment Actuator, Model 2646 (as shown)
- Viking Langmuir Probe Instrument Boom, Model 2646

## PERFORMANCE

### Actuator Size

Height	9.84 in (250 mm)
Width	5.00 in (127 mm)
Depth	3.98 in (101 mm)
Depth (Optional Mounting Plate)	6.00 in (152.4 mm)
Actuator Weight (without boom)	3.53 lb (1.6 Kg)
Boom Weight	0.09 lb/ft (0.134 Kg/m)
Boom Material	Stainless Steel or Beryllium Copper
Boom Coating	Kapton Coat/Kapton Tape

### Boom Properties for Stainless Steel

Min. Bending Stiffness	45,650 lb-in <sup>2</sup> (131 nm <sup>2</sup> )
Allowable Compressive Load	5 lb (22 n)
Ultimate Bending Strength	239 in-lb (27 nm)
Deployment Rate (nominal)	1 in/s (25 mm/sec)
Drive Motor	DC Permanent Magnet Brush Type
Power Requirements (Max at 28 V DC)	15 watts
Limit Switches	2 for Full Deployment; 1 for Full Retraction
Length Indication (Potentiometer)	10,000 ohms
Interface Connector	Cannon Dam-15P-NMB-K56
Environmental	Qualified for Ariane launch
Random Vibration	19.5 g Rms
Stowed Frequency	>80 Hz
Operating Temperature Limits	Qualified at -20 to +60°C



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