TakeMe2Space

HDRM

Technical Specifications

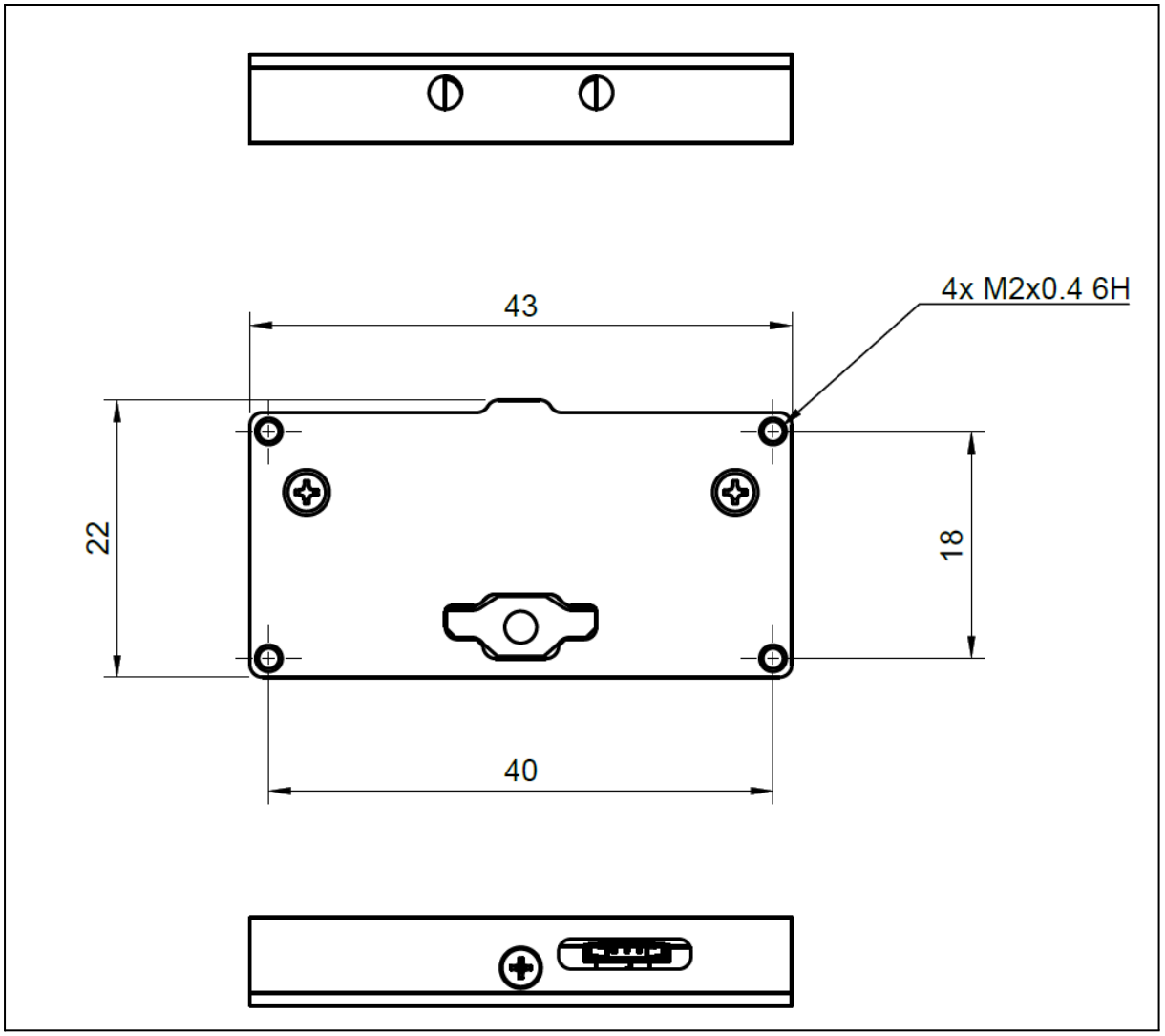
Description:

The miniature Hold-Down and Release Mechanism (HDRM) is designed to secure deployable components such as solar panels, antennas, or booms during launch and to release them upon command once in orbit. A compact and lightweight form factor has been adopted to meet the constraints of CubeSats and other small satellite platforms. Release is accomplished through the controlled disengagement of a preloaded nut, allowing stored energy from hinge or deployment springs to actuate the mechanism. Structural stability is maintained during launch, and reliable separation is ensured through precise mechanical actuation. The design is optimized for ease of integration, mechanical simplicity, and compatibility with standardized satellite interfaces.

Specifications:

Category	Parameter	Value
Electrical	Power Input	5 V DC
	Current	2 A
Load Ratings	Max Release Preload	≈ 3.5 N

	Maximum Allowable Preload During Launch	≈ 1500 N
Environmental	Actuation Time	< 2 seconds
Environmental	Shock Load Rating	TBD
	Vibration Load Rating	TBD
	Vacuum Compatibility	<1% TML, <0.1% CVCM (ASTM E595)
Mechanical	Dimensions	45 × 22 × 6.5 mm
	Enclosure Material	Aluminum 6061 T6
	Connector	3-pin Molex pico-blade



Mechanical Interfaces