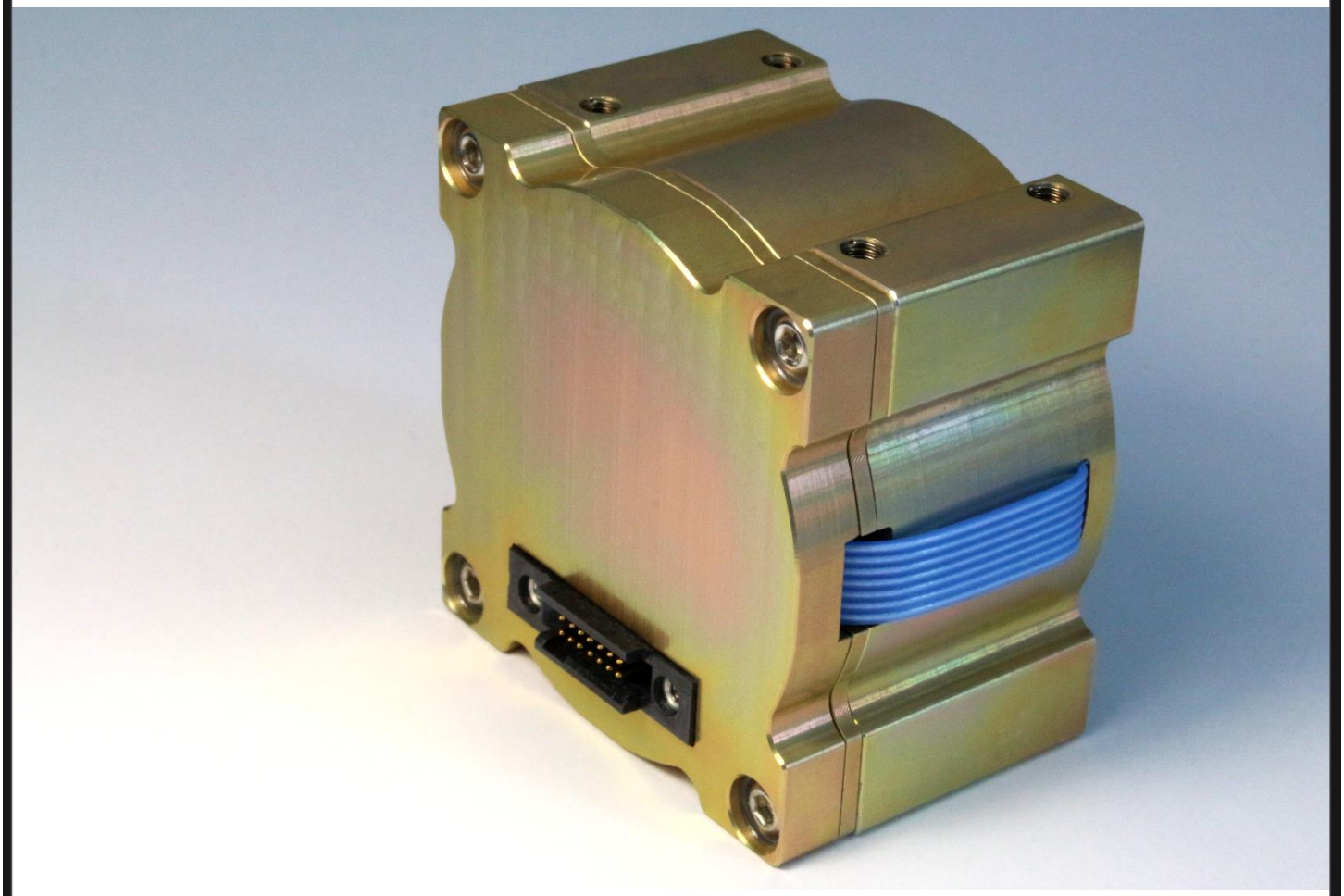
CubeWheel

Momentum/reaction wheels for nanosatellites



Option Sheet

Contact Us

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Table of Contents

1. Client Information

Company/Institution	
Name of proposed satellite	
Physical address	
Contact person	
E-mail address	
Date	

2. Hardware Configuration

Please complete all the relevant sections below to configure the CubeWheel unit.

2.1 Size

The CubeSpace CubeWheel units are available in four different sizes: Small, Small+, Medium, and Large. Refer to the CubeWheel ICD for details regarding the dimensions and mounting specifications for each size. Please select the desired CubeWheel size.

Option 1 – Size

	Small	Small+	Medium	Large
CubeWheel size				

2.2 Connector and harness length

Each CubeWheel unit has a polarised 14-way connector. The Small CubeWheel has a Molex PicoBlade connector, the Small Plus has a soldered in harness with a Samtec SFSDT female header and the CubeWheel Medium/Large has a Samtec SFSDT male header. Please refer to Figure 1.

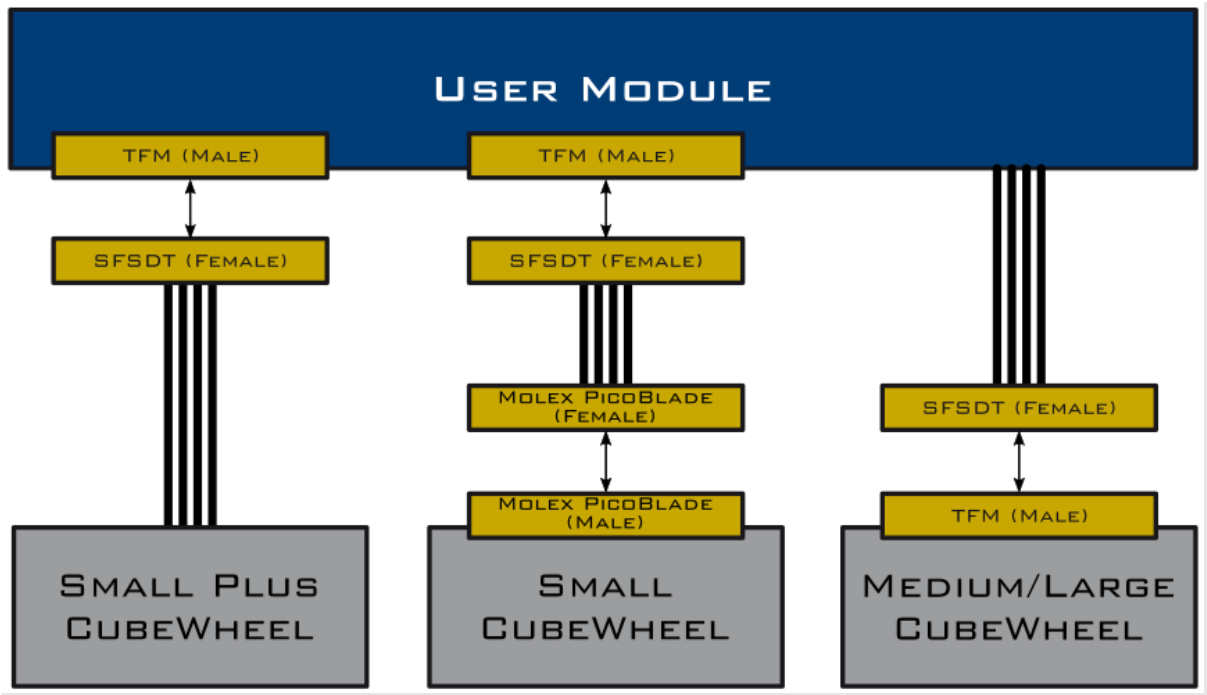

Figure 1 – CubeWheel connector and harness configurations

The Samtec parts used with CubeWheel units are the *SFSDT-07-30-G-XX.XX-SS* harness and the *TFM-107-02-L-D-DS*.

2.2.1 General

All CubeWheel orders are supplied with an interface board and required cabling to assist with the outgoing (performed by CubeSpace) and incoming (performed by the user) health checks. One interface board and one interface harness is provided per order. The length of this harness is 250mm.

2.2.2 CubeWheel Small connector and harness

For CubeWheel Small orders we supply a harness that has a Molex Picoblade connector on the wheel's side, and a SFSDT connector on the user side. This harness is required to test the wheel with the interface board. If the user chooses to use the same style harness to connect to their board, one can be provided for each wheel ordered.

Please indicate if you would like a harness included with each wheel

Option 2 – Connector harness (CubeWheel Small)

	Extra Harness	Length (mm) *
CubeWheel Small harness		

* The maximum length of the wire harness is 350 mm.

2.2.3 CubeWheel Small Plus connector and harness

For CubeWheel Small Plus orders, the harness is soldered in on the wheel's side, and a SFSDT connector on the user side.

Please indicate the length of the harness.

Option 3 – Connector harness (CubeWheel Small Plus)

	Length (mm) *
CubeWheel Small Plus harness	

* The maximum length of the wire harness is 350 mm.

2.2.4 CubeWheel Medium/Large connector and harness

For CubeWheel Medium and Large we provide a harness that has a SFSDT connector on the CubeWheel's side and an open harness on the user side. The user can then add whichever connector they choose. The standard length of the harness is 350mm. If a shorter harness is required, it can be cut to length by the user before adding a connector.

2.3 CAN electronics

CubeWheel units have interfaces for I2C, UART, and CAN. If the CAN interface is not required by the user, it is recommended that the CAN electronics should be left unpopulated. The result will be 17 mW less power consumed from the 3.3 V supply. Please indicate whether or not the CAN electronics should be populated.

Option 4 – CAN electronics

	Populated	Unpopulated
CAN interface electronics		

2.4 Battery bus voltage

The gains of the speed controller on the MCU of the CubeWheel unit are dependent on the battery bus voltage of the satellite. The allowable range is 6.4V to 16V.

Option 5 – Battery bus voltage

	8.0 V	Other (specify)
Raw battery voltage		

2.5 Grounding

The Aluminium housing of the wheel is connected to the electrical ground via an 1.5MΩ resistor. This ensures that no static build-up occurs on mechanical parts. This method also helps with electromagnetic shielding of the electronics. The high resistance will prevent ground-loops and prevent accidental shorts.

3. Additional Requirements

4. Declaration

I, (name)_____, hereby declare that I am a legal representative of (company)_____.

Signature	Date