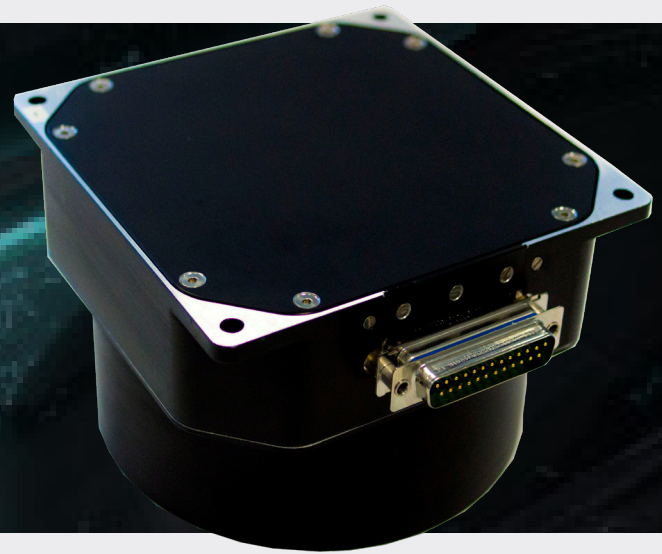


MAXIMUM ACCURACY AND RELIABILITY



The Trillian-1 Reaction Wheel provides high reliability, adaptability, and accuracy making it a one-of-a-kind product for Small Satellite missions. With over 10 units sold, and in-orbit heritage since 2019, the Trillian-1 has proven performance and reliability. The product is tested to NASA GEVS acceptance levels and features input filters that aid to reduce signal noise while a dedicated motor driver control circuit commands the Reaction Wheel safely. Designed for constellation deployment, each wheel produces a nominal 1.2 Nms momentum storage and 47 mNm maximum torque in a 1.5kg package and features three operations modes; Torque, Speed, and Direct DAC control.

KEY HIGHLIGHTS:

- Total Momentum Storage: ± 1.2 Nms.
- Maximum Torque: 47.1 mNm.
- Maximum Rotation Rate: 6500 rpm.
- Input filters to reduce signal noise.
- A dedicated motor driver control circuit.
- Protection Circuitry.
- 10+ telecommands and telemetries.
- Low Mass: 1.5 kg.
- Low Power: 24 W peak.
- Compact: 135x135x82mm



HERITAGE

Trillian-1 has flown since 2019 with over 10 units sold. The design is based on around AAC Clyde Space's extensive reaction wheel development experience proven across 10s of satellites. Each unit features integrated sensor and communications noise filters to increase accuracy and proprietary protection circuitry based on years of subsystem design experience ensuring the Trillian-1 will provide unparalleled mission assurance.



ADAPTABILITY

The Trillian-1 is constellation-ready and optimized for volume manufacturing and testing to support the next generations of constellations. The solution features a wide range of telecommands and telemetries providing direct access to the variables that control it for maximum flexibility if additional functionality is required over the initial 3 operation modes offered (Torque, Speed or Direct DAC control).



RESISTANT

The toughness of Stainless Steel is just the tip of what makes Trillian-1 resistant to the harshness of Space. The Reaction Wheel can operate at temperature ranges of -40°C to 85°C at an absolute pressure of 1000 mbar. Each unit is tested to NASA GEVS Acceptance levels prior to shipment ensuring the Trillian-1 can survive a wide range of launch loads offering flexibility in mission configuration.

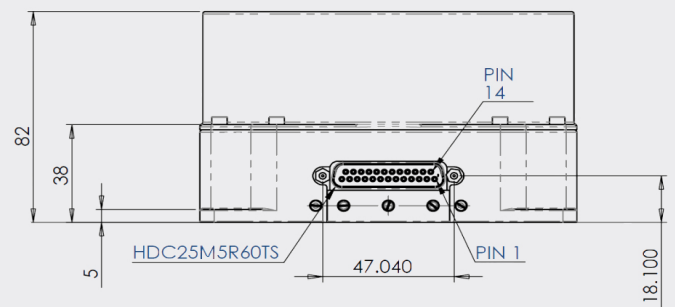
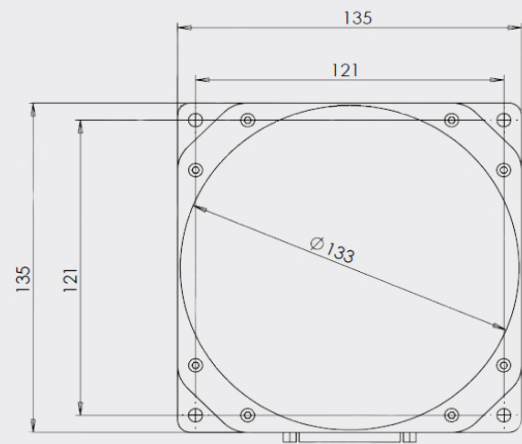
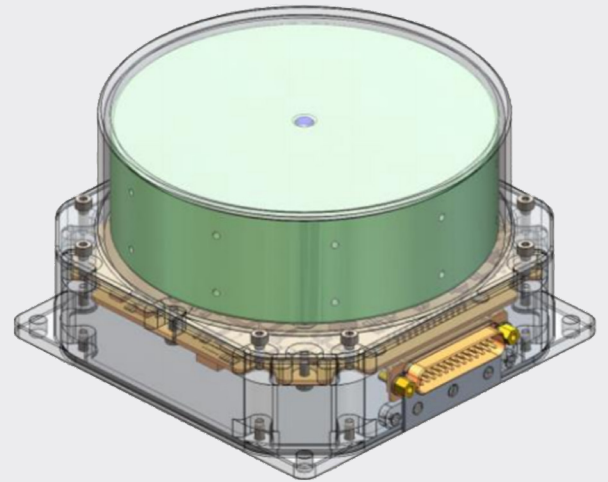
TECHNICAL SPECIFICATIONS

General	
Material	316L Stainless Steel and Aluminium
Storage Temperature	-40°C to 85°C
Operating Temperature	-10°C to +50°C
Vibration	10.0 Grms

Performance	
Total Momentum Storage	±1.2 Nms
Maximum Torque	47.1 mNms
Maximum Rotation Rate	6500 rpm
Control Accuracy	±1 rpm

Dimensions	
Length	135 mm
Depth	135 mm
Height	82 mm
Mass	1.5 kg

General Electrical Characteristics	
Supply Voltage	Minimum: 20 Maximum: 34 V
Bus Logic Level Voltage	5 V
Power Consumption	Idle: 1.5 W Nominal: 12 W Peak: 24 W



The Trillian-1 is part of AAC Clyde Space's extensive product catalogue; need sensors or a power system then check out www.aac-clyde.space for more details.

To make an enquiry, request a quotation or learn about AAC Clyde Space's other products and services, please contact:

enquiries@aac-clydespace.com



#SPACEISAWESOME

www.aac-clyde.space

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