Thermal Management Technologies

-Innovative Products and Engineering-

PYTHON THERMAL SWITCH

-Tools for Innovative Thermal Management-

- Benefits-

- *Passive*

- *Turn down ratio up to 350x*

- *Reliable actuation*

- *Scalable*

- *Adaptable to a wide range of applications*

- *Self-contained*

Python Thermal Switch: Adaptable thermal control connection

Thermal Management

Space systems require adaptable, reliable, and low-cost thermal solutions to add resilience to the overall mission.

Managing temperatures with widely varying heat dissipation is becoming essential to keep spacecraft components within limits. Thermal management requires radiators, heaters, and thermal connections to accommodate variations in heat dissipation.

TMT offers the Python Thermal Switch to enable the need for thermal adaptability. The passive assembly conducts when you need it and provides thermal isolation when you do not.

Python 1/350 Thermal Switch
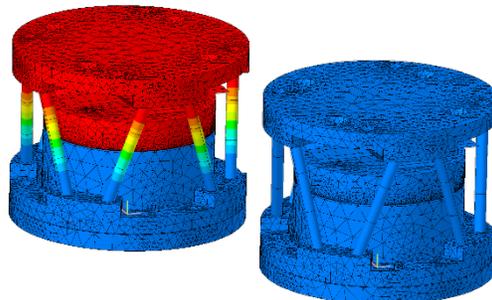
Thermal Simulation of switch assembly (Open-left/ Closed-right)

Typical Applications:

- *Radiator connections*

- *Reduce heater power in long eclipse*

- *Extended thermal storage*

- *Satellite component temperature stabilization*

- *Custom applications*

Design

The base design uses phase-change material to actuate open/closed with a unique self-contained package for ease of integration. Current configurations:

	10 Watt (1/350)	25 Watt (0.4/140)
Open temperature	<5 °C	<5 °C
Thermal Resistance	1. closed/ 350 open	0.4 closed/ 140 open
Mass	<0.5 kg	<1.3 kg
Size	7cm dia. /5.3 cm height	11 cm dia/ 5.8 cm height
Operating temperature	-60 to +75 °C	-60 to +75 °C

Contact TMT to discuss your application

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