

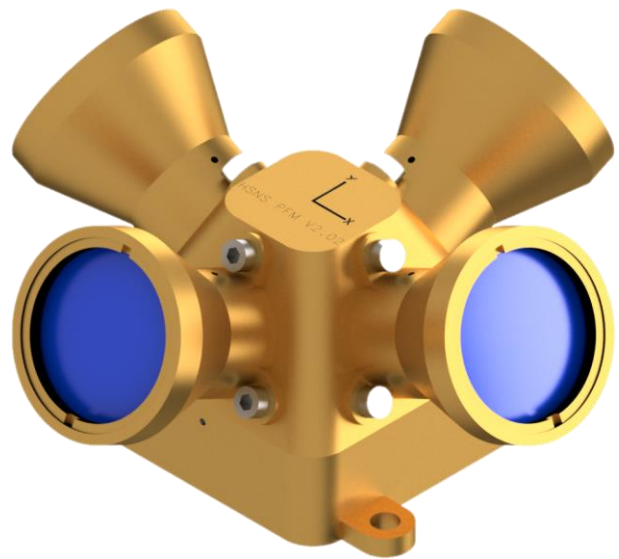
Horizon Sensor for Nano and Micro Satellites (HSNS) of Solar MEMS is a Quad Thermopile sensor for Earth detection and Nadir vector determination. This device measures the infrared radiation from Space and from Earth with 4 IR-eyes, providing accurate and reliable detection and attitude determination.

HSNS is based on previous experience of Solar MEMS making attitude sensors and long research projects on IR sensing devices. Every HSNS is characterized and tested, and includes a microcontroller for fast assembly and integration with different options like UART or I2C protocols.

Technical Characteristics:

Sensor	Horizon sensor
Accuracy	<1 degree, 3sigma (EOL)
Aperture	$\pm 64^\circ$ adapted for 700 km LEO orbit To be tailored for each mission
FOV of each IR eye	$\pm 2,5^\circ$
Output rate	10 Hz
Housing	Aluminum 6082 (Alodined and Anodized)
Power supply	5V and <30 mA
Electrical interface	UART or I2C, microD 15 pins
Dimensions	90 x 92 x 50 mm
Mass	120 g
Orbit	LEO (Customization for different altitudes)
Lifetime	Designed for 3 years

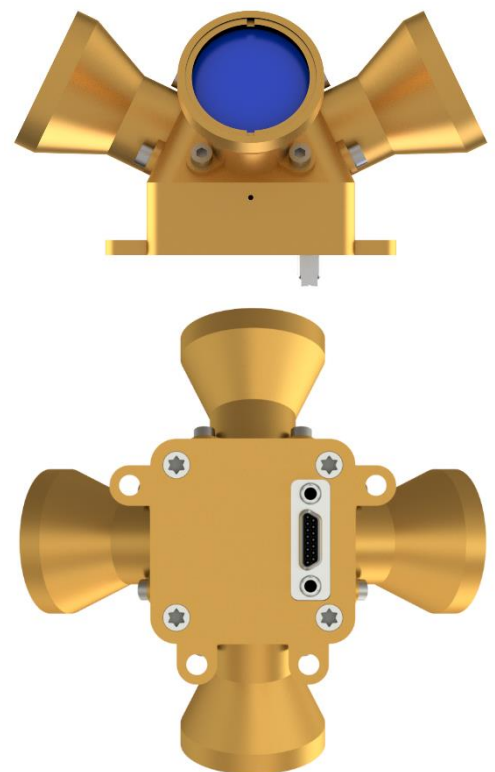
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Qualification Data and Flight Heritage:

Operating Temperature	-30° to 70° Celsius
Qualification	30 kRad Total Ionizing Dose Space-grade components Space qualified microcontroller

Overview:



Mechanical Interface

