



## TECHNOLOGY DESCRIPTION

In partnership with the European Space Agency (ESA), Stellar Space Industries is engaged in the development of a state-of-the-art electric propulsion thruster system for small satellites. This venture is characterised by its innovative Flow Control Unit, designed to ensure precise gas flow in challenging conditions of space. The flow control unit's core component is a novel piezo-based micro machined valve, engineered for high accuracy and efficiency.



## INNOVATIVE ASPECTS

- Superior leakage performance compared to existing market alternatives.
- Rapid response times (within microseconds).
- High precision control of gas flows and pressures.
- Compact design and minimal power consumption/heat generation.
- Accurately and efficiently controlling various gases within specific flowrate ranges, maintaining an unprecedented level of precision.
- Capability to handle various gas mediums.
- Longevity: Specially engineered for extended life endurance, harsh environments and aggressive species, the valves minimise maintenance and replacement costs'



## TECHNOLOGY READINESS

TRL 4 (2024)



## COUNTRY OF ORIGIN

The Netherlands

## LATEST UPDATE

05/2024

SPACE  
FOR BUSINESS  
BUSINESS  
FOR SPACE

TECH CARD



## TAGS

#propulsion

#flow control

#valve

#gas regulation

#accuracy

#thruster

## APPLICATION AREAS

Chemical Engineering & Biotechnology,

Energy

Mechanical engineering

Space technologies

Semi-conductor

Biomedical