

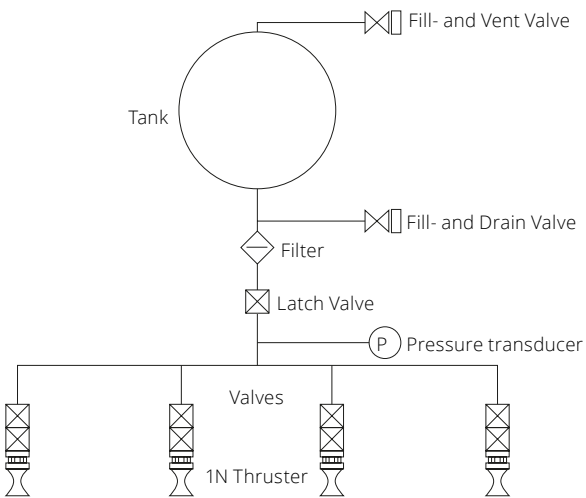
MONO PROPELLANT SYSTEM PM25

SPACE PROPULSION

PM25 DATASHEET

Main features

- › simple and reliable single branch monopropellant propulsion system
- › plug-in design
- › all-metallic propellant tank with propellant management device for bubble free propellant
- › redundant cat bed heater
- › design life up to 12 years
- › pre-integrated and tested ready for integration into the spacecraft
- › three barrier design with dual seat flow control and fill- and drain valves



PM25	
Dry Mass	26.7 kg +/- 5%
Module Overall Height	917 mm
Module Diameter (w/o FDV and electrical Connectors)	660 mm
Max. Leakage	6.1 E-05 scc/s
1N Thruster	
Thrust Range (Steady State Firing)	1.0 +/- 0.1 N at 22 bar ≥ 0.25 N at EOL (5.5 bar)
Supply Pressure Range	5.5 - 24 bar
Steady State Firing Specific Impulse Range	> 2100 m/s (215s) at 22 bar > 1962 m/s (200s) at 5.5 bar
(Minimum) Impulse Bit	0.043 Ns (50 ms ON-Time) at 22 bar 0.014 Ns (50 ms ON-Time) at 6.6 bar
Total Hydrazine Throughput	69.8 kg
Total Operation Time	65.6 h
Longest Steady State Burn	43200 s (12 h)
Total Impulse	140504 Ns
Total Number of Pulses	99862
Propellant Tank	
MEOP	24.6 bar
Tank Net Volume	104 litres
Max. Propellant Capacity	80 kg
Expulsion Efficiency	99.14%

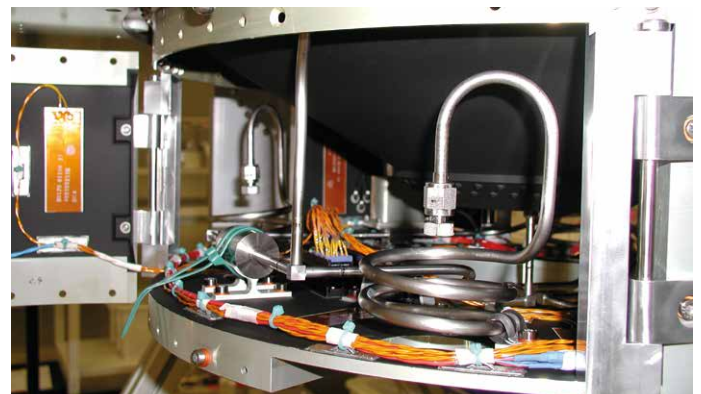
Technical Description

- › The Propulsion Module baseline consists of:

- one (1) Tank
- four (4) Thrusters
- one (1) Latching Valve (LV)
- one (1) Pressure Transducer (PT)
- one (1) Filter
- one (1) Propellant Fill & Drain Valve
- one (1) Pressurant Fill & Vent Valve
- Structure S/S
- Thermal Control S/S
- Harness S/S



- › All-welded design which minimizes mass and ensures leak-tightness, to the exception of screwed connection used for thrusters latch valve and flow control valves for easier integration and flexibility
- › The nominal operational time of up to 12 years.
- › Use of hydrazine as propellant and gaseous helium or nitrogen as pressurant
- › Operating in blow down mode with a ratio of 4 : 1
- › The thrusters provide under BOL conditions a nominal thrust of 1.0 N.
- › Fill- and Drain valves with 3 barriers against propellant leakage
- › Easy accessibility of Fill- and Drain valves for launch site fueling operations
- › Autonomous thermal concept providing multi-layer insulation, heaters and thermistors
- › Cold Start Capability of 1N Thruster allowing to use the propulsion subsystem also for safe mode operation
- › Electrical connection to spacecraft by flexible connector harness or board
- › The PM25 Design Concept is also suitable for ADN propellant as a Green Propulsion Application



Contact

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