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P3 Technologies Delivers Flight Pump for Lockheed Martin Cryogenic Fluid Management

P3 Technologies has delivered liquid hydrogen SCAMP pumps to Lockheed Martin Space for a cryogenic fluid management development effort. Named Ersa after one of Jupiter's moons, the pump operates in Zero-G with zero net positive suction pressure. As a result, it is required to be self-priming and capable of operating with either a gas, liquid, or two-phase flow. "It is really nice to work with partners like P3 Technologies who continue to help us develop new technologies to further our lunar and deep space exploration programs, aiding in successful program and mission execution", says Lockheed Martin Space.

The positive displacement linear solenoid pump underwent a rigorous development and verification program successfully demonstrating all pressure and flow requirements, over 4X life, as well as its ability to withstand the shock and vibration loads associated with launch. "This pump can handle anything you throw at it, and it just keeps running", said Brandon Demski, Vice President of Research and Development, and inventor of the SCAMP.

The SCAMP features an advanced, state-of-the-art controller developed by our teammate Sigenics of Chicago, Illinois. The space-rated controller integrates innovative energy recovery technologies to minimize power requirements.

"The SCAMP is ideal for low-flowrate applications requiring high or low discharge pressures for which a centrifugal pump is not capable", says Robert Sanders, Vice President of Product Engineering. SCAMP is compatible with most liquids include oxygen, hydrogen, methane, nitrogen, and numerous storable liquids and hydrocarbon fuels.

P3 Technologies, a Graham company, manufactures, assembles, and tests its SCAMP family of pumps at its facilities in Jupiter, Florida.


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