Technology Opportunity

Programmable Thermostat/Power Controller Operates on Single Power Source

Researchers at NASA's Marshall Space Flight Center have patented a self-contained power controller that can operate on a single power source, monitor environmental parameters, and generate electrical power on the occurrence of a triggering event, such as a temperature or humidity sensor reaching a set point. Marshall's innovation was developed for and used on the maiden voyage of NASA's Multi-Purpose Logistics Module (MPLM), a pressurized module used to transport International Standard Payload Racks (ISPR) and consumable supplies to and from the International Space Station. The invention helped control the internal temperature and pressure of the MPLM. In another application, up to 32 of these devices can be daisy-chained together to produce a distributed controller. Although the original intent was to provide the device with the capability of programmable set points for the control of several distributed heaters, it also can be used as a solid-state power distribution device with the capability to program turn on/turn off thresholds for various sensors.

Benefits

- **Precise**: Provides tight temperature control
- **Adjustable**: Offers selectable set points with 0.1°C resolution
- **Enhanced**: Supplies closed-loop feedback control capability
- **Flexible**: Affords greater operational adaptability

Commercial Applications

- Heating, ventilating, and air conditioning systems

Licensing and Partnering Opportunities

This technology is part of NASA's technology transfer program. The program seeks to stimulate development of commercial uses of NASA-developed technologies. NASA is flexible in its agreements, and opportunities exist for licensing and joint development. MSFC is interested in a partnership to commercialize the technology.

Patents

U.S. Patent Number: 7,325,749

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