



THERMAL MANAGEMENT OF RESIDENTIAL RACK SYSTEMS



Why is Thermostatic Control Important?

- ✓ Extends equipment life
- ✓ Minimizes noise
- ✓ Extends fan life
- ✓ Minimizes dust
- ✓ Reduces service calls

Thermal management solutions from Middle Atlantic Products have been designed and engineered to integrate aesthetically into any residential environment with little to no impact on the client. Intelligent technology such as thermostatic fan control ensures that the homeowner's electronics system will run optimally by monitoring system temperature and signaling fans to run automatically when necessary, benefiting the client as well as the installer.

Open Shelves

Don't be misled by the open nature of a typical glass and metal television stand. It is still essential to ensure that electronics generating significant amounts of heat are able to breathe. Smaller intelligent fan systems like the Component Cooler are placed directly on the vents of the equipment's chassis, will sense when that satellite/cable box, A/V receiver or gaming console reaches a risky temperature, and work to circulate that hot air.

When the Face of the Rack is Visible and the Rack is Mounted in Millwork or a Cabinet

The closed, isolated nature of cabinets and millwork often requires Active thermal management: the use of fans to properly ventilate heat produced by equipment. Intelligent fan panels installed at the top of the rack will help pull heated air out of the cabinet through the front of the rack, and into the room.

In Cabinets or Entertainment Centers When the Rack is Covered by a Door

It is common for the homeowner to prefer his or her electronics system to be installed behind the scenes. Solid cabinet doors eliminate the opportunity to direct excess heat from the front of the rack. In these instances, an alternate exhaust system like the Cabinet Cooler can be installed in the upper rear of the cabinet or entertainment center in which the rack will be located.



Designer Inspired
Ultra Quiet Fan Panel see pg. 113



In Closets

The installation of a large vertical rack in its own closet can also be preferable to the client, but carries the same challenges as smaller systems installed behind cabinet doors. The question again arises of where heated cabinet air can be exhausted, giving way to technologies like the Closet Cooler that can be installed in the top and bottom of a closet door to pull cool air in from the bottom of the system and exhaust heated air out of the top and into the hallway or room.

Basement

When multiple systems are being distributed throughout the house, one recommendation is to locate home theater and media equipment in a vertical rack system in a basement or separate equipment room. Open areas such as these create more opportunities for passive thermal management, where the room is temperate enough and the rack is open enough for natural airflow to keep equipment adequately cooled. When equipment generates too much heat for natural convection to manage, the use of fans then becomes necessary and integrated fan tops can be utilized in a dedicated basement or equipment room where ultra quiet fan operation is no longer a necessity.

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