Air Management Technologies, Inc.
Building Energy & Environmental Services

FoodTherm INC.
Food Process • Thermal & Energy Solutions

Guaranteed Solutions:

Process Cooling
- Mixer & Sponge Systems
- Chilled Ingredient Water
- Finished Product Cooling
- Blast Freezing
- Refrigeration

Process Heating
- Water Heating
- Steam & Hot Water Systems

Environment Conditioning
- Proofing/Retarding
- Spiral (Finished) Products
- Oven Steam
- Mold & Particulate Control

Industrial HVAC
- Makeup Air Systems
- Spot Cooling
- Space Pressurization
- Filtration
- Mechanical Cooling
- Ventilation

Waste Heat Recovery
- Ovens & Oxidizers
- Solar/Fuel Cells
- Compressed Air
- Industrial Fryers

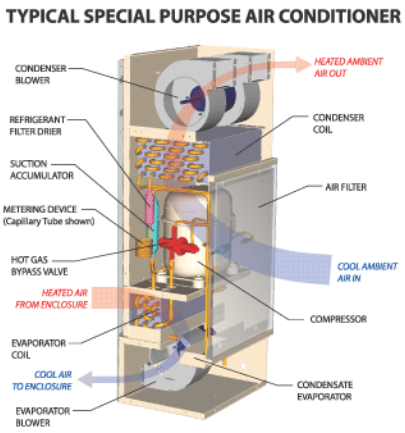
Specialized Technologies
- Absorption Refrigeration
- Cascade Refrigeration
- Industrial Heat Pumps
- Solar/Fuel Cells
- Organic Rankine Cycle

PLC Automation Panel Filtration
Baking and Food Processing Facilities

PLC Automation Panel Self-Contained Cooling Systems

While industrial grade electronic components are quite robust, most control panels still require cooling to prevent overheating. This is because panel enclosures are typically fully sealed to prevent dusts, debris, and other airborne contaminants from entering the panel and damaging critical process electronics. In bakeries and most industrial applications the enclosure is typically cooled by self-contained ventilation systems which are functionally similar to window air conditioners referred to as "panel coolers". These "panel coolers" provide ventilation inside a sealed control panel recirculating the same air in a closed system across the electronics which does a great job keeping contaminants out. The condenser coils which reject heat from the system is located outside of this protected area where it is exposed to facility conditions including flour and other dusts.

Environment and Performance



Flour dust particles are very small, easily absorb water, and if wet stick together and solidify. Industrial options to protect the condenser coils using screens, mesh, or even fiberglass filter panels are insufficient as they lack the proper efficiency to capture these small particles. As dusts collect on the condenser coils it insulates the system reducing thermal efficiency up to 20%. In humid environments such as after sanitation, flour dusts will quickly coagulate on the filters blocking condenser coil airflow. The "panel cooler" system itself begins to overheat. Overheating significantly reduces air conditioning to the panel resulting in out of range enclosure temperatures.

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Maintenance and Filtration

While not thought of in the same vein as preventative maintenance for the ovens or proofers, panel coolers, especially during summer months in non-air conditioned bakeries, are essential systems. System cooling failure can rapidly lead to PLC overheating resulting in process systems control, and thus production, shutdown. With maintenance resources already spread thin on production equipment, routine maintenance for panel coolers is often not a top priority. Depending on panel location, filters should typically be washed or replaced at least once per week. A thorough cleaning of flour deposits on the condenser coils should be conducted monthly if not more frequently depending on dusts pass through. The challenge for facilities is allocating the time for these consuming maintenance requirements.

Evolved Filtration

Developed in direct response to these requirements, Food Therm has developed an enhanced filtration option for PLC control enclosure "panel coolers" which increases filtration efficiency and dusts holding capacity without sacrificing required airflow. Immediate advantages for your facility include:

- Reduction in flour dust pass-through for less condenser cleaning.
- Increased panel cooler air conditioner life expectancy.
- Significant electrical energy savings through greater efficiency.
- Improved PLC Automation Control System reliability.
- Decreased maintenance staff labor used on system maintenance.

Enhanced Maintenance Operations and Service (EMOS)

The *Evolved Filtration Option* (EFO) integrates seamlessly with our new custom engineered maintenance tracking application and analytics solution: "***Powered by Air Filter on Demand"***.

This bakery optimized application leverages intuitive technologies to predict, enable, and track filter replacements and other related tasks.

"From procurement to placement - this new app has it covered!"

Contact Air Management Technologies today to learn more about this new tool designed to help you strengthen maintenance operations, reduce facility operating expenses, and improve PLC automated control systems reliability.

About Us

Air Management Technologies has delivered energy, thermal process conditioning, and environmental solutions for over twenty years. Our written performance guarantee places the responsibility in our hands and the life cycle benefits in yours. Cost conscious decisions are made with the customer in mind and every project is guaranteed to operate as specified.

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