

# THERMAL EDGE SUCCESS STORY: MillerCoors Minimizes Downtime Losses with Thermal Edge Network-Capable ACs

## The High Cost of Reactive Maintenance on Productivity and Service Life

MillerCoors initially housed their PLCs in cabinets equipped with filtered fan packages. Open-loop cooling proved incapable of maintaining consistent cabinet temperatures and exposed the internal components to ambient humidity and contaminants. Microscopic paper fibers shed from product packaging clogged the filters and collected on the electronics, resulting in heat build-up and premature failure.

Although MillerCoors adopted closed-loop air conditioners in the early 1990s, heat-related issues persisted. Technicians had no way to identify air conditioner failures between routine maintenance inspections unless equipment overheated.

Service personnel sometimes failed to identify premature air conditioner failure as the cause of the malfunction. Since the underlying problem remained, the electronics inevitably overheated again. Recurring failures resulted in significant downtime and repair costs, as well as reduced component service life.

Sanitation and maintenance were also major concerns. Air conditioners from previous vendors had flat top panels, allowing moisture to collect on the surface creating sanitation issues. The filters were either disposable or too flimsy to withstand repeated cleaning, adding to total maintenance costs.

Replacing an obsolete or malfunctioning unit with a current model, or one from a different manufacturer, created logistical problems. Technicians were required to fabricate adapter mounting plates, increasing installation costs.

## MillerCoors Searches for a Proactive Thermal Management Solution

MillerCoors needed enclosure air conditioners capable of communicating with their PLCs that could report problems before high internal temperatures impacted component longevity and potential productivity.

The search for a solution ended when Thermal Edge Inc. approached MillerCoors in 2010. Thermal Edge began shipping air conditioners equipped with an EtherNet/IP port and communication software within two months.

*\*Note: Thermal Edge also offers its customers Modbus RTU and Intranet/EtherNet connectivity to communicate with their air conditioners' digital controllers.*

## Thermal Edge Air Conditioners Offer Remote Monitoring Capability, Reduced Maintenance and Simple Retrofit

An example of the benefits of Thermal Edge air conditioners comes from the packaging room floor of the MillerCoors brewery in Fort Worth, Texas. The outside temperature routinely reaches 105° F in summer, with temperatures within the facility reaching 115° F. Internal control cabinet temperatures are maintained at 90° F.

Personnel use the PLC communication software to adjust settings such as the alarm and cabinet temperature set points. The PLC polls the air conditioner for the thermostat set point and internal temperature. The air conditioner alerts the staff before damage can occur by sending an alarm and fault code to the PLC in the case of a compressor shutdown or if the cabinet temperature exceeds the programmed warning level.

The innovative design of Thermal Edge air conditioners resolves issues of maintenance and routine cleaning. The sloping top panel and smooth seam-welded edges prevent water from collecting on the surface. The No. 4 finish on the stainless steel exteriors hides fingerprints, but does not trap contaminants. Thermal Edge filters provide a larger surface area than those of competitors, allowing for extended maintenance intervals. The robust filters are washable and can withstand repeated cleaning, minimizing replacement costs.

Thermal Edge provides adapter plates for any manufacturer's existing cut-out pattern, eliminating the need for fabrication. The adapter plates ensure fast, simple installation and allow uniformity across MillerCoors facilities.

MillerCoors has standardized on Thermal Edge air conditioners due to their communication capability, reduced cost of maintenance, and ease of installation and cleaning. Thermal Edge Inc. is proud to be MillerCoors' preferred supplier of enclosure air conditioners.



MillerCoors is a 150 year old company that operates ten breweries located throughout the United States. The company produces such popular brands as Coors, Miller, as well as a wide variety of specialty and craft beers.

The company relies upon Programmable Logic Controllers (PLCs) housed in electronic enclosures to control their automated brewing and packaging operations. These critical devices can cost over \$100,000. They raise internal cabinet temperatures to 131° Fahrenheit and would quickly overheat without proper cooling.

*"Thus far, we haven't had any failures on the Thermal Edge Units. If there's ever an issue or question, they respond immediately. They have an excellent track record versus the competition." - Larry Trunek VP of Engineering*



**Thermal Edge Inc.**

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## What makes an Air Conditioner a Thermal Edge Air Conditioner?

There are three critical features that make a Thermal Edge Enclosure Air Conditioner different from any other line of air conditioners. *Standard on Every Unit*

### 1. Condensate Evaporation to turn the condensate back into vapor

**Condensate Evaporation System** eliminates drain lines and buckets by routing the refrigerant hot gas lines through a condensate boil off pan. This process converts the liquid back into a vapor which is vented out of the air conditioner. In addition to eliminating the buckets and drains needed with other air conditioners, this process pre-cools the refrigerant gas, thereby lessening the load on the compressor and lowering our running amps.

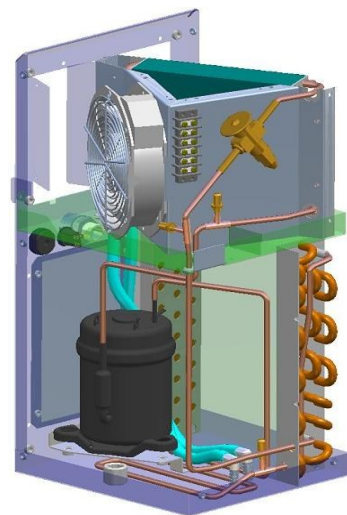
*Lower running amps and no condensate makes a better air conditioner.*

### 2. Thermal Expansion Valve controlling the flow of refrigerant

**Thermal Expansion Valves** balance and modulate the refrigerant flow to the heat load by sensing the temperature of the refrigerant leaving the evaporator. There are three major advantages to this refrigerant control method:

1. Maximum efficiency over a wide temperature and load range
2. Improved refrigerant return to the compressor assures better cooling at high temperatures and reduces the possibility of liquid slugging which can destroy the compressor.
3. Variations in refrigerant charge, particularly smaller units, are less critical

Thermal Edge always uses **Thermal Expansion Valves**. In your demanding environment, you need temperature controls that you can depend on, regardless of temperature changes throughout the work day or seasonal year.



### 3. Programmable Digital Controller making a smarter air conditioner



**The Thermal Edge Digital Programmable Controllers** incorporate programmable set point and temperature controls, visible error and/or alarm messaging, system status indication and password protection. Remote control is available with our OD package. The Digital Controller from Thermal Edge... When a smarter air conditioner is needed for a better package.

**Contact Us Today!!**

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