Energy and Cost Management Strategies

Transforming energy challenges and cost management into a competitive advantage.

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Logix® Energy and Cost Management Strategies

Lowering your refrigeration energy costs involves more than just maximizing energy efficiency at the individual equipment level. Plant-wide energy conservation opportunities, company operational goals, and utility power management objectives must be considered in designing a control system. Logix has the broad energy management experience you can trust to minimize one of the few costs you can actually reduce – your energy bill.

Plant-Wide Control Efficiencies

Built in Holistic Strategies to Ensure Efficiency

Demand Limiting/Load Shedding

- Manages equipment power consumption to a pre-set kW level without compromising cooling objectives
- Automates equipment shut-down according to a user-defined equipment priority list
- Flattens power spikes, improves power factor, and helps you contain your energy use

Load Shifting

- Reduces energy use during high-cost peak power billing periods
- Operates equipment at lower energy use settings by raising allowable room temperatures, suction pressures, and limiting equipment operation as determined by plant personnel
- Automatically lowers temperatures prior to peak cost periods to achieve a thermal “flywheel” effect that maintains products within desired temperature ranges

Power Failure Restart Procedure

- Provides a smooth, gradual startup of plant equipment after a power failure or shutdown occurs
- Manages electrical demand charges that result from the turning on of numerous motors in a refrigeration system startup

Automated Plant Shutdown

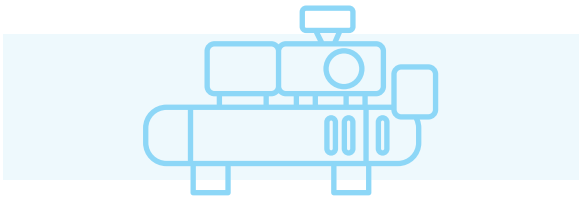
- Turns off equipment in a safe, orderly, and timely manner
- Minimizes labor and potential utility penalty expenses associated with shutdown response
- Avoids power demand spikes with equipment restart

Lighting, Battery Charger, and Other Load Management

- Integrates the operational control of other facility loads with the refrigeration system for coordinated energy management

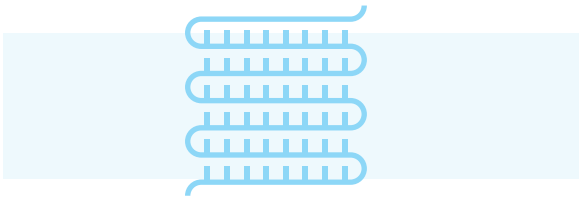
Refrigeration Equipment Control Efficiencies

Logix Systems continuously monitor facility cooling load and control equipment to meet refrigeration demand while optimizing energy conservation. Our distributed control systems ensure the most energy-efficient operation of compressors, evaporators, condensers, and other mechanical equipment.



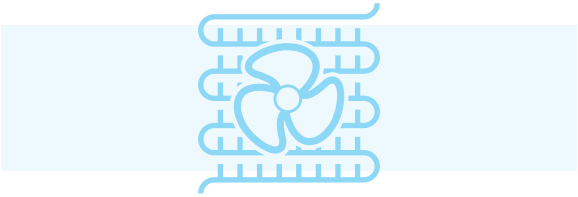
Compressors

- Continuous capacity fine-tuning meets cooling demand while preventing any unnecessary startup of energy-consuming compressor motors
- Automatic compressor selection chooses and stages compressors for maximum energy efficiency for any given cooling load
- Smooth transition control when changing lead lists or after compressor failure contains demand charge
- Floating suction pressure continually adjusts to minimize compressor horsepower requirement for current load conditions
- Variable-speed motor control for maximum savings under partial load conditions



Evaporators

- Load Leveler™ coordinates cooling operation to limit the random spike demand cost typical of simple thermostat-type control
- Fan cycling turns off constant-speed fan motors during light load conditions
- Variable-speed motor control strategies minimize fan speed on an individual evaporator as well as a zone-wide basis
- Demand management limits the number of evaporators that can defrost any one time
- Defrost blocking prevents defrost during high energy costs periods
- Defrost termination detection prevents excessive defrost duration



Condensers

- Floating pressure control continually adjusts to the lowest possible setting while preventing unnecessary operation of pumps and fan motors, minimizing compressor horsepower requirements
- Flexible staging settings for both increasing and decreasing capacity resulting in steady pressure control and minimized condenser cycling
- Continuous capacity fine-tuning selects most efficient condensers for current load while reducing pump horsepower requirements
- Variable-speed motor control for maximum fan energy savings
- Non-condensable Gas Detection adaptively controls purger operation for optimal elimination of energy-penalizing refrigerant contaminants

Other Equipment

We can optimize any other refrigeration system/machine that lends itself to improved efficiency from intelligent control, including chillers, refrigerant vessels, pumps, product storage tanks, purgers, and ice makers.

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