

CONTROLS

Engineered Control Solutions

For Industrial Refrigeration
Energy Savings Through SMART Strategies



Frick[®]

BY JOHNSON CONTROLS

Frick® Engineered Control Solutions by Johnson Controls Setting the Benchmark for Industrial Refrigeration Controls

Frick Engineered Control Solution Systems have been providing safe, reliable, and efficient operation of industrial refrigeration facilities since 1985. During that time our solution engineers have designed and commissioned 1200 plus control systems worldwide. This combination of experience in design and commissioning capabilities makes Frick Engineered Control Solutions (ECS) far and away the best selection for all of your Industrial Refrigeration Control needs.

We Engineer and Build to Your Specifications

Each Frick Engineered Control Solutions system is designed specifically for your application! A Frick Engineered Control Solutions system is a nonproprietary system, available in either OPTO 22 or Allen-Bradley. It's your choice!

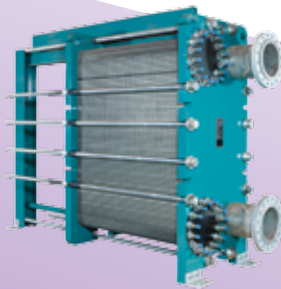
Frick by Johnson Controls is a member of the OPTO Partner program and is a certified Allen-Bradley OEM supplier.

- Each Frick ECS system is fully commissioned by a factory solutions engineer.



We Understand What We Control

As a full product line provider of compressors, condensers, evaporators, heat exchangers, hygienic air-handlers and vessels, our control solution engineers have direct access to the engineering behind all of the products we provide. This means that your next control system will come with the most current, energy efficient strategies available!



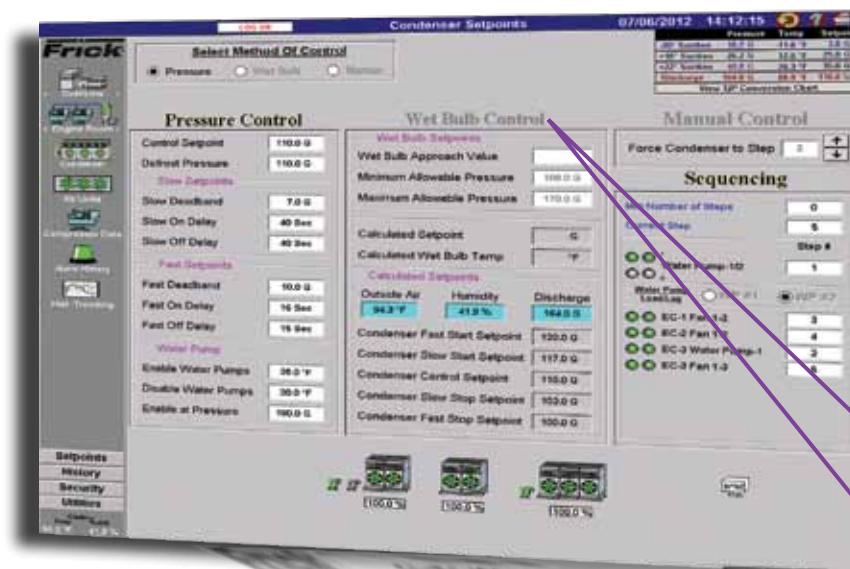


The Virtual Operator

A Frick ECS system is a 24/7 virtual operator of your industrial refrigeration system. Constant monitoring and data gathering allows you to evaluate your system's operation and make changes accordingly. In most cases the Frick ECS system will automatically optimize your operation based on changing conditions (both in and out of the controlled space) to meet the needs of your system and the requirements of your utility providers.

A Few Automated Strategies and Features...

- Compressor Sequencing
- Wet-Bulb (Floating) Condenser Pressure Control
- Condenser VFD Fan Control
- Refrigeration Timed Defrost Control
- Defrost Grouping Control
- Evaporator VFD Fan Control
- Proportional, Integral & Derivative Control Loops (Modulating Devices)
- Floating Suction Pressure Control
- Load Shedding (Based on Schedule, Usage or On Demand)
- Engine Room Ventilation (NH₃ Detection)
- Systematic Space Shutdown (NH₃ Detection)
- E-mail and/or Digital Alarm Notification
- User Defined Report Generating



You Are In Control

We understand that things change over time. For this reason, all Frick ECS systems provide optional control strategies. Optional strategies empower you to control your system in the most efficient way at all times. As an example, all Frick ECS systems allow you to easily choose between one of three condenser control strategies, Wet-Bulb (Floating) Condenser Pressure Control, Fixed Pressure Control, or Manual Control.



Switching to Wet-Bulb Condenser Control

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Engineered Control Solutions



Connecting & Managing the largest loads in your facility in the most precise and efficient manner!



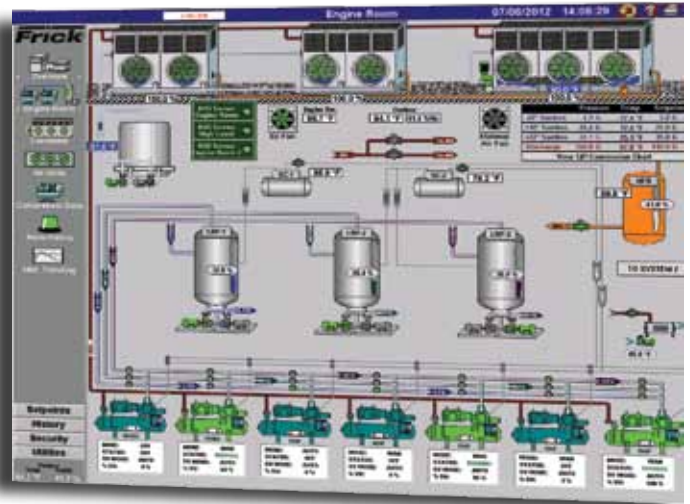
CONTROLS

Precise Control, Delivers Just In Time...

Business owners understand that "Just-In-Time Delivery" minimizes cost. This very concept is directly relative to the operating cost of your refrigeration System. Frick ECS systems are designed to provide "Just-In-Time Delivery" within your refrigeration system. The result is minimized overshoot/undershoot, parasitic heat loads and the use of nearly all non-value added energy.

"The Frick control system's capability to automatically adjust to changing conditions has led to a 28.78% reduction in energy usage over the past two years. The user-friendly screens make our control system a breeze to work with!"

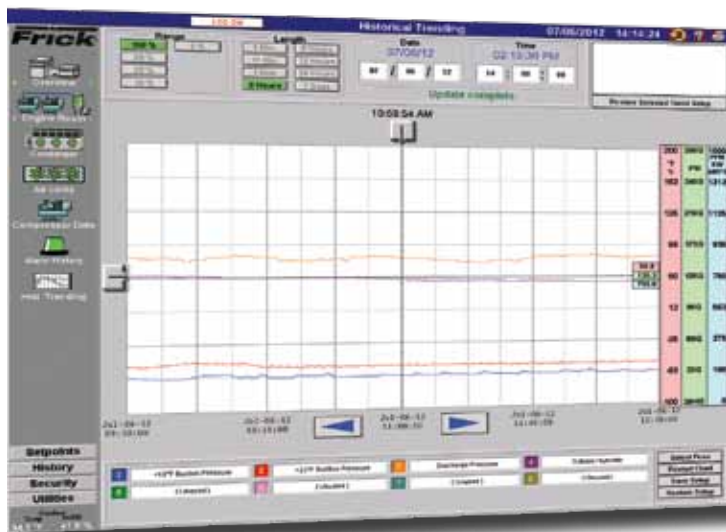
Eddy Osorio, Facilities Director
Maines Paper and Food Service Inc., Conklin, NY



Historical Trending, Establishes the Future...

Historical Trending Data is invaluable to establishing what needs to be done to make tomorrow's operation more efficient and reliable.

Frick ECS systems provide historical data trending of up to all analog input points in groups of eight. View these trended values at 10 to 100% range, over a time window of 1 minute to 1 week.



A UL-508A Certified Shop

All Frick control products are built to meet or exceed the UL-508A standard for industrial controls. Our processes are regularly inspected to be in compliance with the UL-508A standard.

The experienced electricians building these complex systems are truly dedicated to quality and customer satisfaction.





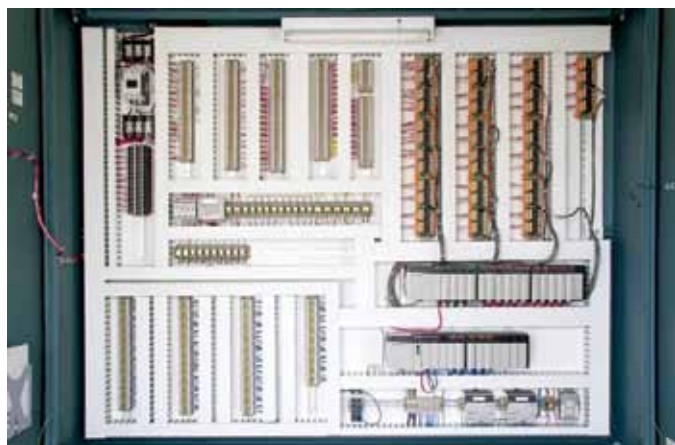
Comprehensive Testing and Functions Checks

Each Frick ECS system undergoes a stringent process of comprehensive function checks and testing prior to being shipped to your location. Additional proving of functionality will occur as necessary, based on changes that may occur during the commissioning process. All digital outputs are equipped with Hand-Off-Auto switches to aid in commissioning and for emergency back-up.

OPTO 22 SNAP PAC PLC system



Allen-Bradley Controllogix PLC system



System Specifications...

PLC Based

- Allen-Bradley (Control Logix Platform)
- OPTO 22 (Snap Pac S2 Processor)
- Both platforms are nonproprietary (off-the-shelf hardware)
- Graphical HMI
- Wonderware/Intouch
- Factory Talk View (Allen-Bradley)

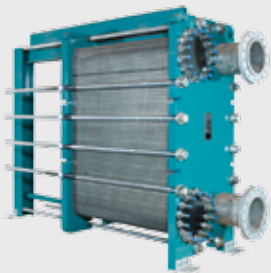
Computer Supplied

- HP Core 2 Duo 2.66 GHz Dual Core or better
- Windows 7
- 2 GB RAM
- (2) 250+ GB hard drive
- CD / CDRW Drive
- Preferred method of remote access (Frick Support and Customer Access) shall be via Internet VPN connection using house network internet connection or dedicated ISP. Internet connection provided by facility IT department.
- Analog modem with pcAnywhere remote communications software provided as back-up to VPN.
- 22" Flat Panel color monitor (HD Wide Screen available on request)
- Color Laser Jet Printer
- Battery Backup (UPS)
- Run time license for all software

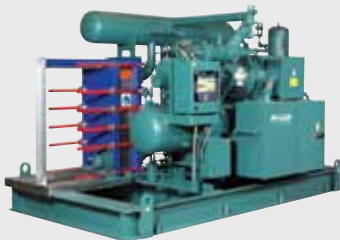
For more information on the benefits of a Frick Engineered Control Solutions system, contact your Frick brand sales representative today!

Single Source Industrial Refrigeration Solutions !

Heat Exchangers



Packaged Equipment



Hygienic Air Units



Vessels



Controls



Evaporators



Compressors



Condensers



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