

# Century Centinel™ Controller

## Intelligent Defrost Control System

# centinel

by Century Refrigeration

Century Refrigeration is proud to offer the Centinel™ Intelligent Defrost Control System as an option with each of its system arrangements.

The Centinel™ is an electronically operated evaporator controller designed to save energy in refrigeration systems. The Centinel™ reduces the energy used by the system through precise control of superheat, fans, reducing compressor run time, and implementing demand defrosts. The Centinel™ was designed for a quick payback and a life expectancy that matches that of the system. The controller pays for itself, then continues to pay dividends for the life of the system.

### About the Centinel™

The Centinel™ consists of a microprocessor driven controller, sensors, and an optional Electronic Expansion Valve (EEV). The controller's microprocessor provides the ability to control the system with precision and accuracy not available with mechanical controls. The sensors provide the necessary feedback from the system to allow the logic to work. The controller should be combined with an EEV to provide maximum efficiency.

The controller can be unit mounted or provided in kit form, including all of the necessary components – controller, temperature sensors, and accessories. The valve is available separately, as it must be sized to the system capacity.

### Operating the Centinel™

The Centinel™ uses a series of complex algorithms to ensure the evaporator is providing maximum efficiency. The key to its success is minimizing individual component's energy usage in the system. By controlling multiple pieces of the system, the incremental gains of each component are compounded to create substantial savings.

The Centinel™ has a unique self-learning algorithm that allows the controller to adjust to changing conditions. Because it is adaptable, the Centinel™ customizes itself to each individual evaporator. The controller does this by first creating a profile of the evaporator's performance characteristics. The performance profile of the evaporator is then continually compared to its current operation. The controller uses this comparison to determine when the system requires defrosting.

### Centinel™ Application

Centinel™ can be used with new or existing applications, is easily configured for use with mechanical or electronic expansion valves, is not refrigerant specific, and can be applied to a wide range of applications. The construction

of the controller and its accessories lends itself to easy installation, helping to reduce the total installed cost. When being applied to existing mechanical valve systems, the controller is installed without breaking into the refrigerant circuit.

The Centinel™ is ideal for applications benefiting from reduction in product shrinkage and tight temperature control. It is Ideal for walk-in coolers and freezers. The Centinel™ replaces the multiple pieces of a traditional system including: room thermostat, defrost time clock, and defrost termination/fan delay thermostat.

A quick start menu allows the Centinel™ controller to be taken from the box to operation in a few simple steps. While it is easy to setup, the Centinel™ also has advanced levels of access. Using the pass code to access the installer level parameters, the controller can be configured for a variety of applications including direct expansion, commercial and industrial applications.

The algorithm is compatible with systems employing electric, hot gas, and off time defrosts. The reduction of total defrosts and many other operational differences will save energy on any system.

### Communication with the Centinel™

The Centinel™ uses a revolutionary communication system known as the Centinel™ Network. It eliminates the proprietary protocol many companies use to communicate. The Centinel™ uses Ethernet communication. This type of communication eliminates the need for a serial network and reduces installation cost by eliminating the need for a communication gateway used to translate the serial data to a universal language. The serial communication is replaced by a more robust design that connects controllers utilizing the structure of local area networks.

The immediate benefit to users is the ability to connect to any computer with an internet browser and see the current state of the controller. This removes the burden of downloading software and by sending the information directly to a web browser, the user is no longer required to check for software updates.

***For more information about the Centinel™ and how it can benefit your system, please contact your local Century Refrigeration Representative.***

