

# ERC & ETC

## Refrigeration Controllers:

# Save Energy at Reduced Costs

For Door Merchandisers, Commercial Fridges & Freezers,  
and Various Additional Applications

### 3 Electronic Controllers

for energy savings  
to meet the  
requirements of  
today's commercial  
applications.



# New ERC refrigeration controller

The new generation of ERC refrigeration controllers allows you to benefit from all previous features and save even more energy with the new Danfoss ECO™ strategy. New features include “early wake-up”, “adaptive defrost”, and “automatic fan control” functions. These all lead to even lower management costs.



## Choose ERC and leave your concerns behind: **greater efficiency - automated cabinet - unsurpassed flexibility - reliability**

### **Automatize the cabinet:**

#### **Several optional sensors**

Dedicated ambient light sensor, movement sensor detection, door opening frequency sensor detection, combined with optimized algorithms lead to greater energy savings when the cabinet is adapted to local ambient conditions. Cabinet management adopts a functional mode depending on the store business hours and high/low customer visit periods.

### **Store opening hours detection:**

#### **ECO management**

“Early Wake Up” gives the opportunity to switch on the cabinet at the right time to guarantee the right product temperature when the first customer arrives. Management of ECO mode produces the best energy savings, while managing light and temperature. The cabinet can also switch into Holiday Mode automatically, based on programmable vacation settings.

### **Display panel efficiency**

ERC 112 displays are large, bright, and come in red or blue. Multifunction configurable icons for compressor, fan, defrosting, ECO, alarm and temperature displays in Celsius or Fahrenheit make this system fully customizable.

### **Reliable compressor and system protection**

ERC can provide voltage compressor protection in a high and low voltage threshold. A high-temperature condenser alarm alerts commercial refrigerator and freezer users before any refrigeration system damage can occur. It helps you save money by reducing field rejects in areas with unstable power supplies and in unclean conditions.

### **Smart automatic fan control**

Cycle the fan when the compressor is OFF to equalize temperature internally, resulting in energy savings of 10% or more.

### **Adaptive defrost**

New defrost algorithms can initiate the defrosting process at a pre-programmed time interval or temperature. The starting temperature can be linked to the set point temperature so the defrost interval can change depending on the active functional mode: save energy and only defrost when needed.

### **Defrost saver**

When the power goes out due to an electric failure or outage, the ERC 112 monitors the temperature and only defrosts when the temperature falls below a certain limit, thus avoiding the defrosting process if the power outage lasts for a long time.

### **Improve controller life**

Due to the built-in smart technology using zero cross switching in all relay, the maximum number of relay cycles is improved, compared to that achieved by standard controllers, thus considerably increasing the controller's life.

# ETC 1C refrigeration controller

ETC 1C is a cabinet controller, which easily replaces electromechanical thermostats. It has a low energy consumption, and uses NTC type temperature sensor. A high level of safety is guaranteed, as the sensor is separated by protective impedance in accordance with EN 60730-1 appendix H.



## High accuracy, combined with close differentials, ensures improved control of the Cabinet

### Key Benefits:

- can control the cabinet or ambient temperature directly and more precisely, compared to mechanical thermostats
- has low energy consumption
- replaces mechanical/electronic timers
- supports up to two sensors
- uses economically priced NTC temperature sensors
- compatible with a wide range of Danfoss temperature sensors for different applications
- temperature control independent of barometric pressure
- high accuracy combined with small differentials and narrow tolerances ensure improved functionality in draft beer coolers and water chilling appliances
- built-in timers for enhanced defrost functionality
- strong relay - withstanding 36 A inrush, 6 continuous load
- pressure equalisation protection on appliance start up
- improved self-diagnostics of sensors and potentiometer ensure a reliable operation
- outstanding compressor protection functionality:
  - voltage protection mechanism (black-out and brown-out)
  - built-in timers
- heavy duty PCB marine coating for optimal moisture protection

## ETC 1H temperature controller

The ETC 1H is introducing a flexible platform due to onboard micro-controller and software dedicated product configuration, perfect for light commercial applications and household applications. Standard versions with similar functionality as the traditional electromechanical thermostats are available as well as several customized high performance software versions. Remote display is available.



### High accuracy, combined with close differentials, ensure improved control

#### Key Benefits:

- can control the cabinet temperature directly
- has low energy consumption
- 1 or 2 sensors (Air, evaporator) and optional remote display can be connected
- using NTC temperature sensors
- temperature control independent of barometric pressure
- high accuracy combined with close differentials and narrow tolerances ensures improved control
- built in timers enhances functionality
- optional alarm for over or under temperature in both cold and warm
- auxiliary relays: 5 Amp for heater, fan, light etc. Eventually with delayed start or/and stop
- under voltage and over voltage compressor protection (brown-out protection)
- pressure equalisation protection on starting the device or when voltage drops out (black- out protection)
- diagnostics and self check of sensors and potentiometer
- several defrosting methods can be handled:
  - time controlled defrosting
  - time controlled defrosting with evaporator sensor
  - temperature controlled defrosting
- dual band control of outdoor bottle coolers

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