



# Innovative Refrigeration Controllers: Save Energy at Reduced Costs

ERC 112 Refrigeration Controller for Glass Door Merchandisers, Commercial Fridges & Freezers, and Various Additional Applications

**33%**

**Energy savings**

With ERC 112's revolutionary  
all-in-one design



# Improve quality and reduce operational costs



Danfoss' new electronic refrigeration controller, ERC 112, is a perfect fit for OEM production processes, while offering 33% \* energy savings for glass door merchandisers and commercial refrigerators. It is suitable for display cabinets and several other applications where cooling control is needed. In addition to realizing cost savings from energy consumption reduction, you will also save time on pre-production/prototyping, assembly and general maintenance costs—all without compromising quality.

## **Save energy and reduce your carbon footprint**

Flexible routines and algorithms working with input from multiple sensors deliver both energy-saving routines and highly economical compressor, light, fan and defrost controls for your increasingly cost-sensitive customers.

## **Save on purchasing, assembly and service**

Reduce time to market by cutting prototyping project costs with lab-friendly software and make your production reliable by using the docking station. Assembly is fast and worry-free, using pre-cabled connectors and front mounting. Keep blank code stock to a minimum: one code has all approvals and accommodates voltage from 100V to 240V. Personalize codes just in time by programming them for your specific customer needs.

## **Flexibility for optimal performance**

With approximately 200 parameters, ERC 112 is a mini-computer with a uniquely flexible design. Danfoss programming software and tools enable effective and fast parameter changes at any time using USB connection.

## **Trusted power, safety and reliability**

The outstanding quality of Danfoss components means that this IP65 rated (on front) controller is built to last, easily withstanding high compressor in-rush loads and cleaning with hosepipes. The controller can be used with Hydrocarbon refrigerants, and has passed global tests including UL, NSF, CQC, IEC/EN, Gost, Glow wire. A dedicated algorithm protects the compressor from an excessively high or low voltage and from issues caused by an unclean condenser, thus increasing the life of the cabinet components.

\* Value measured in comparison to a mechanical controller using the same conditions. Set point 3.5°C, delta ECO set at +4. This value can change when controller is optimized to shop habits and uses ERC automatic functions.



# Choose ERC and leave your concerns behind: Greater efficiency, automated cabinet, unsurpassed flexibility and 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

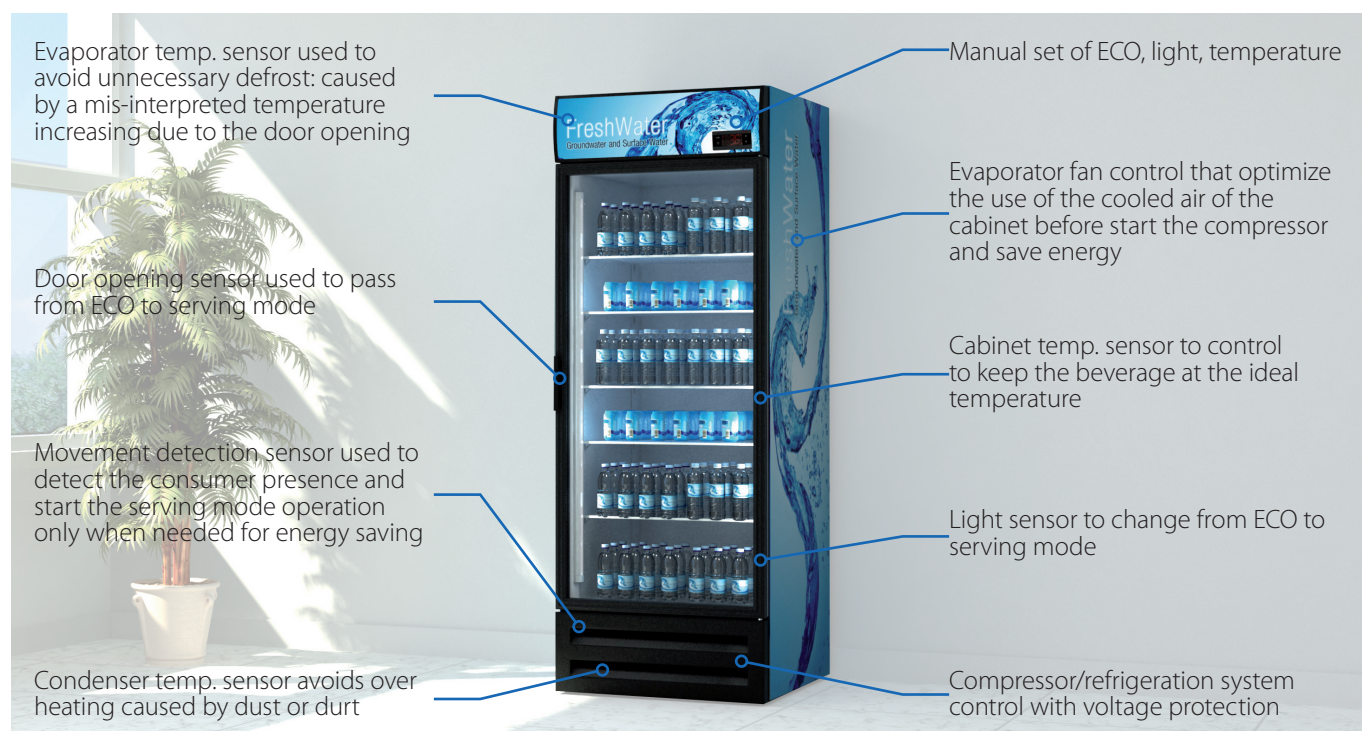
When the power goes out due to an electric failure or outage, the ERC 112 monitors the temperature and only defrosts when the temperature falls below a certain limit, thus avoiding the defrosting process if the power outage lasts for a long time.

## 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.

## Multi-sensor controller maximizes system efficiency

To maximize efficiency, ERC 112 controllers feature up to 4 analogue and 1 digital inputs and 4 outputs. By using the programming tool, you can also utilize the powerful matrix design and re-assign all inputs, output and button functions, adapting each controller to your customer's needs.





# Let Danfoss help you with support, service and supplies

Danfoss runs over 100 sales companies worldwide. This means local sales support, in your own time zone, is always available when you need it. Consider it your personal hotline to Danfoss' global engineering and support.

## We're where you need us

Ordering locally means no language barriers, customs clearance, import duty or tax management. Your local Danfoss Sales office takes care of invoicing in your local currency. We don't just talk service, we live by it!

Power Supply	100 - 240 V a.c. Switch mode power supply. Average 0.7 W		
Input	5 inputs: 4 analogue (digital), 1 digital; user specific assignment		
	• Air/Evaporator/Condenser	• Door sensor: all types, user specific	
	• Light sensor: Danfoss ECO light sensor	• Motion sensor	
Output		UL60730	EN60730
	"DO1" (Compressor relay):	120 V a.c.: 16 A resistive/FLA16/LRA72 240 V a.c.: 10 A resistive/FLA10/LRA60	16(16) A
	"DO4"	8 A resistive, FLA2/LRA12, TV-1	8 A resistive, 2(2) A
	"DO5"	FLA2/LRA12, TV-1	8 A resistive, 2(2) A
	"DO6"	FLA2/LRA12, TV-1	8 A resistive, 2(2) A Max 10 A total "DO4-6"
Probes	Danfoss NTC sensors and Danfoss ECO accessories Danfoss Pt 1000 ohm/0°C		
Connectors	Modular connector system for OEM customers, with optional output screw terminal adapter; Input connector type: Rast2 5 Edge connectors; output connector type: RAST 5 standard		
Programming	Programming with Danfoss ERC docking station, integrated system		
Assembly	3 types for all controls: front mounting; brackets; fully integrated solution (requires OEM specific design of mounting hole)		
Display	LED display, 3 digit, decimal point and multi functionality icons; °C/°F scale		
Keypad	4 buttons (integrated IP65 design), 2 left, 2 right; user programmable		
Operating Conditions	0°C to 55°C, 93% rH		
Storage Conditions	-40°C to 85°C, 93% rH		
Range of Measurement	-40°C to 85°C		
Protection	Front: IP65 Rear: water and dust protection corresponds to IP31, accessibility of connectors limit rear part rating to IP00		
Environmental	Pollution degree II, non-condensing		
Resistance to heat & fire	Category D (UL94-V0)		
EMC category	Category I		
Operating Cycles	Compressor relay: more than 175,000 at full load (16A (16A))		
Approvals	R290/R600a end-use applications employing in accordance to EN/IEC 60335-2-24, annex CC and EN/IEC 60335-2-89, annex BB Glow wire according to EN/IEC 60335-1 IEC/EN 60730 UL60730 NSF CQC GOST R 60730	These approvals are only valid when using the accessories approved	

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