



# User Instructions

**NordCap®**

Low Temperature Freezers Model UNI/LT

## USER INSTRUCTIONS

Congratulations on your new low temperature freezer. We trust that it will serve you for many years to come. In order to gain optimum benefit from your freezer, please read the following instructions thoroughly and act accordingly. The low-temperature freezers are used for freezing and long-term storing of food products, medical preparations (vaccines, blood plasma, etc.) and other biological products.

### 1. Environmental protection and disposal.

The packaging is designed to protect the appliance and its components during transportation, and it is made of recyclable materials.

- Please return the packaging to an official collection point for recycling.
- Old appliances contain reusable materials and should not be disposed of together with household refuse.
- Remove the spring-action hinges from the appliance, in order to prevent children from being entrapped in the appliance.
- Ensure that no part of the refrigeration tubing is damaged as the refrigerant in the appliance risks escaping to the environment.
- Information about refrigerant type and amount will be found on the type plate on the rear of the appliance (Fig. 1).

### 2. Safety instructions.

- In order to prevent injuries and or damage to the appliance, it should be unpacked and set up by min. two people.
- If upon unpacking the appliance is found damaged, do not connect to the mains, but contact the supplier.
- **Interference with or repair to the appliance should only be carried out by authorized personnel, in order to avoid any injuries. (contact the supplier for further information).**
- Never put naked flames or other ignition sources inside the appliance.

- Never touch the freezers interior or products in the freezer when the freezer is operating. Use gloves or aike in order to avoid injuries (frost-bite).
- Keep the key to the appliance away from the appliance and out of the reach of children.

### 3. Connection to the mains.

- For safety reasons the appliance must be earthed. If you are in any doubt, please contact an authorized electrician.
- The appliance should be left for 5 hours before it is connected to the mains. If the appliance is connected before that, there is a risk of damaging the compressor.
- If for any reason the appliance is disconnected from the mains, please wait 10 minutes before re-connecting. The electronic starting device needs this time to cool down, before a safe re-start can be made.

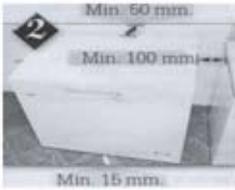
### 4. Before use.

- Before use, the interior of the appliance should be cleaned with a mild soap solution, and wiped off with a dry clean cloth. Never use any kind of solvent or other chemicals.

### 5. Setting up the freezer.

The freezer should not be placed where it might be splashed with water, in extreme high humidity or in direct sunlight. Any of these factors may lead to a reduction in performance and shorten the life span of the components. The freezer should be placed on a horizontal level, and should not be placed close to a heating appliance or heating tubes. Allow a minimum of 50mm (2") clearance on the side and the back. The side with the ventilation grill should have a clearance of at least 100 mm (4") in order to allow the heat from the compressor motor to dissipate. Underneath the appliance there should be a gap of 15 mm approx. (1/2"). On a soft surface, e.g. carpet, it may be necessary to ensure the correct

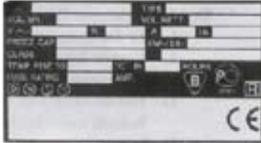
distance by means of spacers.



## 6. Electrical supply.

The electrical supply should always be in accordance with the rating plate on the back of the freezer.

The supply must always be in accordance with the law and regulations regarding electrical safety, if any doubts contact your supplier.



## 7. Starting Up.

In case the compressor does not start when the freezer has been plugged in, the electrical supply may not be in order. Check if there is an electricity supply to the plug or if the fuse is blown. If not please go to trouble shooting page 6. 18.

## 8. Operating the freezer

The empty freezer should be switched on for at least 5-6 hours prior to loading of the freezer. The freezer should not be loaded above the inside walls which is also the load line limit.

*Please note: After the lid has been opened, there will be a vacuum created inside the freezer due to the low temperatures. Wait a few minutes before trying to reopen the lid otherwise the handle could be damaged.*

## 9. Defrosting.

In order for the freezer to work to its maximum efficiency the cabinet should be de-

frosted when a approx. 2mm thick ice layer has formed inside the cabinet.

The ice layer is easily removed with a plastic or wooden scraper. **Never use a sharp metal object which might will cause damage to the inner liner.**

The defrosting frequency is determined mainly by two factors the usage pattern (number of lid openings) and the relative humidity. Excess water can be drained out by using the drain water outlet on the front of the freezer.



## 10. Cleaning.

Cleaning should be done when needed. When used in a dirty environment it might be necessary to remove the compressor compartment grill, and clean the compressor compartment eventually with a vacuum cleaner.

If the cleaning process is neglected there is a risk that the performance of the freezer will be effected, and even damage to the compressor could occur due to overheating.



## 11. Storage.

If the freezer is stored for a period of time, the lid should be kept open for free circulation of air inside the cabinet in order to avoid corrosion of the inner liner.

## 12. Temperature control UNI/LT- freezers.

The temperature inside the freezer is controlled by the electronic controller in the

front grill. The controller has a digital readout of the temperature inside the cabinet, and the option of changing the temperature inside the cabinet.

### 13. External voltage and temperature alarm.

Optionally the freezer can be equipped with a battery operated alarm box with connections for external alarm for voltage failure and temperature alarm. The battery should be exchanged every two years.

Please note! When commissioning the freezer, the battery must be turned into its correct position. More details on page 17.

### 14. EVCO controller.



### 15. Functions.

*How to see the set point:*

1. Press and immediately release the SET key, the display will now show the set point value.
2. Press and immediately release the SET key or wait for 60 seconds to display the probe value again.

*How to lock and unlock the keyboard*

1. Press the set and down keys simultaneously for more than 2 seconds.

*How to change the set point*

1. Press the SET key to change the set point value.
2. The set point value will be displayed and the OUT1 icon starts flashing.
3. To change the set point value, push the up or down arrow.
4. To memorise the new setting press the SET key again or wait 60 seconds for the controller to return to normal display of the probe temperature.

### 16. Setting the controllers offset value

The UNI/LT freezer is designed for long time

and safe storage of sensitive products.

In some situations the UNI/LT freezer is also used for other applications like in laboratories for different low temperature tests. Depending on the actual situation it might be necessary to change the controllers offset value in order to get a correspondence between the reading on the display and the actual temperature inside the cabinet. The factory setting is an offset of 2 dgr:C. The offset can be adjusted in the following way.

*Unlock the keyboard.*

Enter the programming mode by pressing the up and down arrow keys for 4 seconds.

Select the parameter "PA" pressing the SET key to display its value.

Use arrow up or down to change its value to -19 and press SET button again.

Once display shows again PA, keep pressed up and arrow down keys for 4 seconds.

Now you are looking parameter list, select CA1 (offset)

The offset can be adjusted to +/- 25 dgr .C Press SET to store the new value.

Press up + down arrow for 4 seconds or wait 60 seconds without pressing any key. The new value will now be stored.

### 17. Trouble shooting.

If the appliance is not operating. Then please check:

Is the electrical plug connected to the mains (wall socket)? Has the fuse blown?

If the temperature inside the appliance is too high. Then please check:

Is the EVCO controller set to the correct temperature?

Has an excess amount of ice formed inside the appliance?

If the appliance is operating continuously. Then please check:

Is the ambient temperature very high?

Has the appliance recently been loaded with a large amount of warm products?

If you have checked the above points and the appliance is still not working as expected, please contact your local dealer for further advice.

For more detailed information about programming the EVCO controllers please consult the attached manuals.

#### ELCOLD Standard Setting of EVCO Controller

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Description	Label	Setting
SET POINTS	SP	-45°C
Differential (Hysteresis)	r0	3
Offset	CA1	0
Low Temp. Alarm	A1	10°C
High Temp. Alarm	A5	10°C

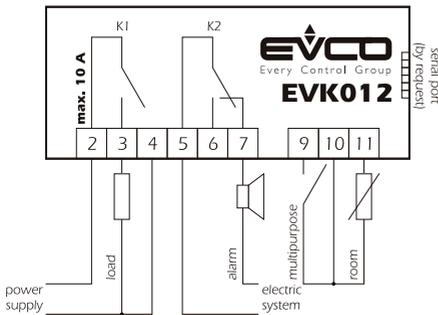
## EVK 012

### Thermoregulator for general purposes

#### 18 Wiring diagram

With reference to the wiring diagrams:

- the polarity of relay K1 depends on parameter u9; according to the default setting, the relay is activated when the regulator is turned off and deactivated when the regulator is turned on
- the polarity of relay K2 depends on parameter u3; according to the default setting, the relay is activated during the normal operation and deactivated during an alarm
- the serial port (by request) is the port for the communication with the supervision system (through a serial interface, via TTL, with MOD-BUS communication protocol) or with the programming key; the port must not be used at the same time for the same purposes.



Additional information for electrical connection:

- do not operate on the terminal blocks with electrical or pneumatic screws
- if the instrument has been moved from a cold location to a warm one, the humidity could condense on the inside; wait about an hour before supplying it
- test the working power supply voltage, working electrical frequency and working electrical power of the instrument; they must correspond with the local power supply
- disconnect the local power supply before servicing the instrument
- do not use the instrument as safety device
- for repairs and information on the instrument please contact Evco sales network.

## 19 USER INTERFACE

### 19.1 Turning on/off the instrument

To turn on the instrument you have to supply it; to turn it off it is enough to cut off the power supply.

### 19.2 Locking/unlocking the keyboard

To lock the keyboard:

- make sure no procedure is running
- press **set** and **▼** 2 s: the display will show "Loc" 1 s.

If the keyboard is locked, you will not be allowed to:

- modify the working setpoint with the procedure related in paragraph 4.1 (you also can modify the working setpoint through parameter SP).

These operations provoke the visualization of the label "Loc" 1 s.

To unlock the keyboard:

- press **set** and **▼** 2 s: the display will show "UnL" 1 s.

### 19.3 Silencing the buzzer

- make sure no procedure is running
- press a button (the first pressure of the button does not provoke its usual effect).

## 20 SETTINGS

### 20.1 Setting the working setpoint

• make sure the keyboard is not locked and no procedure is running

- press **set** LED out 1 will flash
- press **▲** or **▼** in 15 s; also look at parameters r1, r2 and r3
- press **set** or do not operate 15 s.

You also can modify the working setpoint through parameter SP.

### 20.2 Setting configuration parameters

To gain access the procedure:

- make sure no procedure is running
- press **▲** and **▼** 4 s: the display will show "PA"
- press **set**
- press **▼** to set "-19"
- press **set**
- press **▲** and **▼** 4 s: the display will show "SP".

To select a parameter:

- press **▲** or **▼**

To modify a parameter:

- press **set**
- press **▲** or **▼**
- press **set** or do not operate 15 s.

To quit the procedure:

- press  and  4 s or do not operate 60 s.

Switch off/on the power supply of the instrument after the modification of the parameters.

## 21 SIGNALS

LED	MEANING
out 1	LED load if it is lit, the load will be turned on; also look at parameter u9 if it flashes: <ul style="list-style-type: none"><li>•the modification of the working setpoint will be running</li><li>•a load protection will be running (parameters C1 and C2)</li></ul>
	LED defrost if it is lit, the defrost will be running
	LED alarm if it is lit, an alarm will be running
°C	LED Celsius degree if it is lit, the unit of measure of the temperatures will be Celsius degree (parameter P2)
°F	LED Fahrenheit degree if it is lit, the unit of measure of the temperatures will be Fahrenheit degree (parameter P2)

CODE	MEANING
Loc	the keyboard and/or the working setpoint are locked (parameter r3); also look at paragraph 2.5

## 22 ALARMS

CODE	MEANING
ALARM	First temperature alarm
LOW	Remedies: <ul style="list-style-type: none"><li>AL1<ul style="list-style-type: none"><li>•check the room temperature</li><li>•look at parameters A1 and A3</li></ul></li></ul> Effects: <ul style="list-style-type: none"><li>•the alarm output will be deactivated; also look at parameter u3</li></ul>
ALARM	Second temperature alarm
HIGH	Remedies: <ul style="list-style-type: none"><li>AL2<ul style="list-style-type: none"><li>•check the room temperature</li><li>•look at parameters A5 and A7</li></ul></li></ul> Effects: <ul style="list-style-type: none"><li>•the alarm output will be deactivated; also look at parameter u3</li></ul>

When the cause that has provoked the alarm disappears, the instrument restores the normal operation.

## 23 INTERNAL DIAGNOSTICS

CODE	MEANING
Pr1	Room probe error Remedies: <ul style="list-style-type: none"><li>•check the integrity of the probe</li><li>•check the connection instrument-probe</li><li>•check the room temperature</li></ul> Effects: <ul style="list-style-type: none"><li>•the load activity will depend on parameters C4 and C5</li><li>•the alarm output will be deactivated; also look at parameter u3</li></ul>

When the cause that has provoked the alarm disappears, the instrument restores the normal operation.