

User instructions

Bi-Tronic Control 2 - Deep-freezing

To be conserved by the user

Versions of this document

Index number	Date	Nature of evolution	Revised by
1	2014/09/12	Initial document creation	YM / SG

Summary

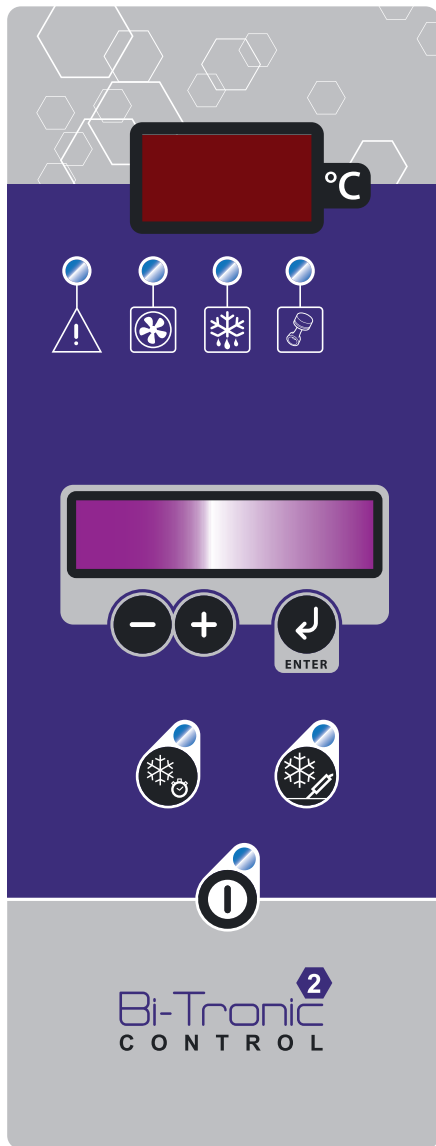
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1 - GENERAL INTRODUCTION

The company HENGEL thanks you for your trust.

The interface BI-TRONIC CONTROL 2 is simple and intuitive. It has two displays. It has the following form:

1.1 Buttons and indicators



Button	Description	Indicator	Description
	On/off		Alarm
	Minus		Ventilator
	Plus		Defrosting
	Validation		Compressor
	Deep-freezing time (clock)		
	Deep-freezing Thermo-Sensor probe		



Attention, the On/Off key puts the regulator in standby. The machine isn't turned off. For that, it is imperatively necessary to cut the disconnecting switch located on the electric box.

2 - USAGE OF THE INTERFACE BI-TRONIC CONTROL 2

2.1 Starting (storage mode)

Once the machine is powered up, the screen flashes a message.
Then it is ready to operate.

To do this, press the button **On/Off**.

The screen displays the date and time.

To display the set-point temperature, press the button "**Validation**".

THE SET TEMPERATURE FLASHES
You can change the value by pressing the button "**Plus**" and "**Minus**" then "**Validation**".

TOTAL STOP



14/05/17 14:37
STORAGE



2.2 Clock setting

On the desktop **STORAGE**, press the button "**Minus**" until the screen flashes «**Clock programmation**».

Press the button "**Validation**".

THE YEAR FLASHES.
Modify it by pressing the button "**Plus**" and "**Minus**" and "**Validation**" to confirm.

THE MONTH FLASHES.
It operates in the same way as for "Year".

Press the button «**Validation**» until the screen flashes «**Clock programmation**».

To return to the original screen, press the "**Minus**" button.

The screen displays the adjusted date and time.



Clock
Programmation



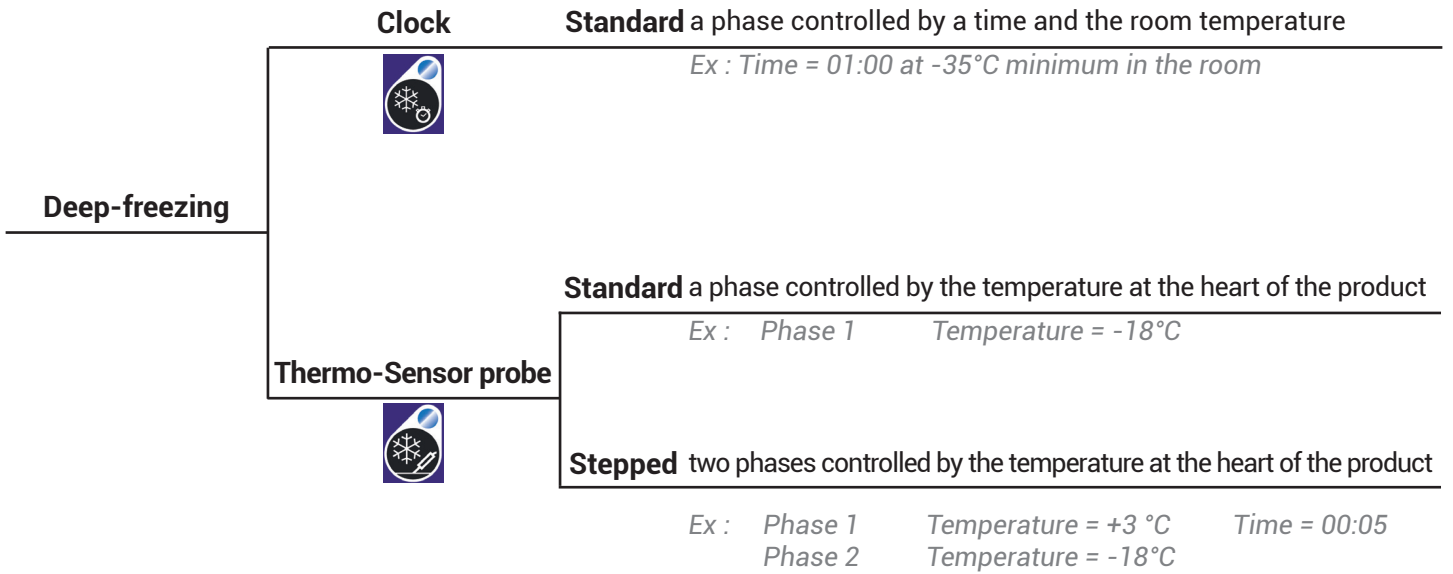
Clock
Programmation



14/09/08 15:37
STORAGE

2.3 Direct program logic of deep-freezing

The interface BI-TRONIC 2 proposes many deep-freezing cycles.



A **Deep-freezing cycle with clock** is limited from 15 mn to 6h and is subject to a temperature control of -35°C to avoid cuts of the pressure switch of the refrigeration unit, slowing down the cooling process (the fan can rotate while the compressor is stopped).

A **Deep-freezing Thermo-Sensor control probe cycle** uses a temperature probe stung in the heart of the product that will be freezed. The BI-TRONIC 2 stops the deep-freezing process as soon as the desired temperature is reached. This self-management ensures :

- Significant energy savings;
- An accurate and definitive knowledge about the precise deep-freezing of all your products.

For the **Stepped** cycles, by decomposing the cooling process the temperature difference between the chamber temperature and the product temperature is decreased by decomposing the cooling process. This process helps to limit the phenomena of surface dryness in products that are delicate to deep-freeze. On the other hand, the deep-freezer can operate in temperature ranges where their performances are better.



The deep-freezing time has a direct impact on the power consumption. Do not overestimate the time, and use the probe thermo-sensor to know it.

2.4 Example of direct program

2.4.1 Deep-freezing cycle with clock

On the desktop **STORAGE** to start a deep-freezing cycle with clock (timer), press the button "**Clock**".



A freezing cycle starts. It will, by default, take an hour.

DEEP-FREEZING
CLOCK 01H00

To modify the length of time, press the button "**Validation**".



THE HOURS FLASHES

If necessary, adjust the time by using the buttons "**Plus**" and "**Minus**", then "**Validation**".

DEEP-FREEZING
CLOCK --H00



THE MINUTES FLASHES

If necessary, adjust the time by using the buttons "**Plus**" and "**Minus**", then "**Validation**".

DEEP-FREEZING
CLOCK 01H--



Note:

- During the deep freezing, the set point time is counted down.
- Once the duration of deep freezing is reached, a ringing would notify the end of the cycle.
- By the use of this cycle for next time, the regulator will display the instruction last time.
- At any time, it is possible to stop the cycle by pressing the button "Time"
- **A deep freezing cycle with preset time is limited from 15 minutes to 6 hours.**

2.4.2 Deep-freezing cycle with Thermo-Sensor probe

From the STORAGE mode, to launch a cycle of Thermo-sensor deep-freezing, activate the «**Probe**» key.
The display indicates «**Thermo Sensor**» and the «**Standard**» cycle flashes, proposing to switch to Thermo-Sensor «**Linear**».



THERMO SENSOR
STANDARD -20°C

After five seconds, if the user does not make a choice, a STANDARD cycle will be launched.

2.4.2.1 STANDARD Thermo-sensor mode

On the desktop **STORAGE** launch a THERMO SENSOR STANDARD cycle by pressing the button "**Validation**", once the « STANDARD » cycle flashes.



When the message does not flash anymore, it means that the cycle is launched.

THERMO SENSOR
STANDARD -20°C

Modify the set point temperature (in heart of the product) by pressing the button "**Validation**".



THE SET TEMPERATURE FLASHES.

Modify the value by pressing the button "**Plus**" and "**Minus**" and then "**Validation**" to confirm.



By the use of this cycle for next time, the regulator will display the instruction last time.

A quick press on the button "**On/Off**" indicates the temperature inside the product (TEMP. SENSO).



TEMP. SENSOR
-15°C

2.4.2.2 LINEAR Thermo-sensor mode

On the desktop **STORAGE** launch a THERMO SENSOR STANDARD cycle by pressing the button "**Minus**" and then "**Validation**", once the «**STANDARD**» cycle flashes.



The display indicates 2 temperatures. The left is the initial temperature in heart of the product. The right is the deep freezing temperature set in the heart of the product. Modify the set point temperature (in the heart of the product) by pressing the button "**Validation**".

THERMO SENSOR
LINEAR +20°C/-20°C



By the use of this cycle for next time, the regulator will display the instruction last time.

THE SET TEMPERATURE FLASHES.

Modify the value by pressing the button "**Plus**" and "**Minus**" and then "**Validation**" to confirm.

THERMO SENSOR
LINEAR -20°C




THE SET TIME OF DESCENT IN DEEP FREEZING FLASHES. Modify the value by pressing the button "**Plus**" and "**Minus**" and then "**Validation**" to confirm.

THERMO SENSOR
LINEAR 02h00



The display returns to the first screen with the original temperature of the probe and the set during the cycle.

2.4.3 Manual defrost

 If automatic daily defrost are programmed (check the settings), the manual defrost is seldom used except for special situation.

On the desktop **STORAGE**, press the button «**Minus**».



The display indicates the message «**DEFROST MANUAL ?**».

DEFROST
MANUAL ?

To launch the cycle, press the button "**Validation**" during five seconds (the same way to stop the cycle) Otherwise, press the button "**Plus**".



Yes
5s



No

2.5 Setup

2.5.1 Automatic defrosts

The regulator manages three daily automatic defrosts (up to six defrosts: ask your technician). For the first use, it is necessary to regulate the hours of defrosting.

On the desktop **STORAGE**, press the button "**Minus**" until the screen flashes a message to set the defrost hour.



DEFROSTING 1
--h--mn

To input the defrosting hour, press the button "**Validation**". Modify it by pressing the buttons "**Plus**" and "**Minus**" and then "**Validation**" to confirm.



Repeat the process to modify the minutes.

Repeat the process for the DEFROSTING 2, and the DEFROSTING 3 by observing the hours in the chronological order.

If a defrosting were to be programmed during a deep freezing, this last cycle has priority : the defrosting is then deferred.

It is possible to ask your technician to have an automatic defrosting after each deep freezing cycle.

2.6 Defaults and parameters

2.6.1 Alarms and defaults

The control reports problems related to an operation's fault through the alarm indicator, with an intermittent buzzer, and by message with the phone number of your technician.

After a power failure, the current cycle is automatically resumed to the status before the interruption.

Faults can be reported remotely by installing a lamp or a buzzer coupled to an output of the control card.

Fault	Critical fault	To check	Action if the check does not solve the problem	Observation
Ambiance probe	No	If the probe is well connected	Change the probe	The program is intended for emergency operation when the probe needs to be changed. The machine is still workable under the Thermo-Sensor probe mode.
Thermo-Sensor probe PT 100	No	If the probe is well connected	Change the probe	The program is intended to operate in emergency mode if the fault happens during a Thermo-sensor cycle. This defect does not affect the launch of a clock mode.
Evaporator / defrost probe	No	If the probe is well connected	Change the probe	This defect does not affect the operation of your machine, unless the defrosting is operated under time constraint.
Temperature drift	No	Check that the weight of frozen product is not greater than the maximum deep-freezing capacity.	Call the technical service for an intervention	The appearance of this fault means that the cooling system does not work in a normal way. This may be due to a product load.
Open door	No	If the door is closed		
Pressure	Yes	-	Contact a technician	The critical faults mean an operation's fault of the compressor or an electrical resistance.
Thermal compressor				
Klixon				
Power failure	No	If the power is restored and if your productions have been chilled or frozen		During a power failure, the interface displays the fault to warn you that the electricity was cut. After turning on the power, Bi-Tronic control continues the cycle where it left off. Acknowledging the default by pressing the "On/Off" key.

2.6.2 Lists of factory and technician defaults settings

To access technician settings, when you are on the **STORAGE** screen, simultaneously press the «**Plus**» and «**Minus**» buttons until the screen flashes a message «**Technician setting**» (About 5 seconds).

Confirm by pressing the button "**Validation**".

The display will then ask the technician code.
The technician code is 123

The first « 0 » flashes, use the "**Plus**" key to enter the first figure « 1 », press "**Validation**" key. Then repeat the process for the second and third figure.

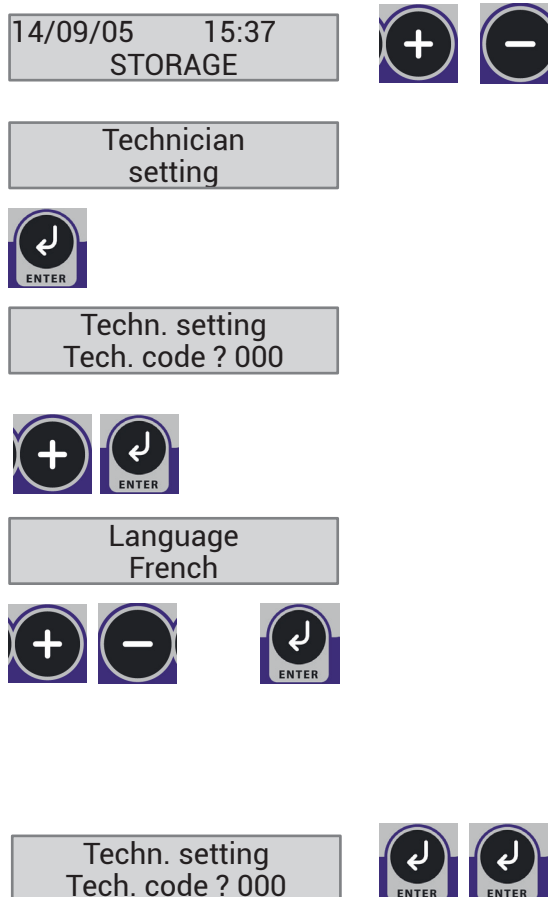
The display shows the language.

The language can be changed by pressing the button "**Plus**" or "**Minus**", and validated by pressing the button "**Validation**".

All the other settings can be modified in the same way.

To exit the technical's menu, scroll down all the settings until the appearance of the display "**Tech. setting Tech. code ? 000**".

Return to the desktop **STORAGE** by pressing the button "**Validation**" for three times.



You can find the list of the technical parameter in the electric diagrams. Each type of machine has its own parameter.

2.7 Stopping the control interface

On the desktop **STORAGE** page, press the button "**On/Off**" during three seconds.



Attention, when the display is in standby, some electric relays are still turned on. In case of interventions, turn off the electric box of the machine.